Concepts of Library Classification Theory
SYLLABUS

Elements of Library Classification
Basic Terminology and Historical Perspective, Need and Purpose of Library Classification

Theory and Development of Library Classification
General Theory of Library Classification, Species of Schemes of Library Classification and Learning about Subjects

Approaches to Library Classification
Postulation and Systems Approaches, Fundamental, Categories, Facet Analysis and Facet Sequence, Phase Relation and Common Isolates and Devices in Library Classification

Study of Selected Schemes of Library Classification
Dewey Decimal Classification (DDC), Comparative Study of the 19th (1979), 20th (1989) and 21st (1996) Editions The Dewey Decimal Classification, Universal Decimal Classification (UDC), Colon Classification (CC), Different Versions of Colon Classification and Current Trends in Library Classification

Suggested Readings:

1. Brian Buchanan, Theory of Library Classification, C. Bingley
2. Mary Liu Kao, Cataloging and Classification for Library Technicians, Haworth Press
CHAPTER 1
Elements of Library Classification

STRUCTURE

- Learning Objectives
- Basic Terminology and Historical Perspective
- Need and Purpose of Library Classification
- Review Questions

LEARNING OBJECTIVES

After reading this chapter, you will be able to:

- Understand the importance of technical terminology in a scientific subject.
- Grasp the meaning of terms and their use in the theory and practice of library classification.
- Identify the factors determining the arrangement of different collections in libraries.
- Identify and describe the need, purpose and function of library classification.

BASIC TERMINOLOGY AND HISTORICAL PERSPECTIVE

Classification Terminology: Historical Perspective

Library classification since an academic discipline is in relation to the 125 years old. Its teaching and research has gained momentum comparatively recently. It necessity be admitted, though, that the terminology is not well settled. One of the principal contributions of Professor S.R. Ranganathan to library classification, along his intuitive and intellectual contributions, is the terminology for expression of thoughts. The evolution of the terminology of library classification in India came beside with the evolution of the theory and practice of classification. It grew at a faster pace flanked by the sixties and eighties. This is due to rigorous developmental research in the field. Extend of jargons in classification to an international circle can said to be fostered through the CRG (Classification Research Group) in London. The CRG members have had extremely secure get in touch with Ranganathan and gravely examined each of his conditions. They refashioned few of them and retained several of them since such and provided descriptive notes to the definitions and then extend them to library schools in Britain and other countries. Textbooks began to seem by several of the concepts, which Ranganathan had propounded. The First International Revise Conference held at Dorking principally supported through CRG saw to
it that a comprehensive glossary of conditions was urbanized for exploit at the international stage. The glossary was compiled through B.C. Vickery for the benefit of the new audience. This movement was extremely well complimented through the FID (International Federation for Fact and Documentation/Federation International Fact et de Documentation) congress, and FID/CA (Committee on Classification Theory) in which Ranganathan himself was extremely much involved in the propagation of thoughts. The growth of the conditions in the second, third and fourth revise conferences indicated a steady improvement in classification research. Today, we can discover that the contribution of Ranganathan to classification terminology is approximately an integral section of any classification research, teaching, studying or script.

Relation to other Terminologies in Library Science

Classification is a basic discipline in the field of library and fact science and pervades all the other sub-meadows of library science. Therefore, the terminology of library classification is an interactive terminology. The symbiotic nature of classification and cataloguing has taken a general link in relation to subject indexing conditions. Several of the verbal plane rules of classification terminology can also act since rules for cataloguing terminology. In relation to reference service, classification gives the analytic and synthetic framework for; efficient handling of reference job and service. Several of the classification conditions can be used! Therefore, a streak of symbiosis can be seen flanked by the two sub-meadows of library science. To a sure extent, management characteristics of libraries can be explained by classificatory terminology. To conclude, classificatory terminology is crucial to the evolution of the discipline of library science. It can be measured, thus to say, that the intellectual framework of library science lies in classificatory terminology.

Nature of Conditions

In an analysis of classification terminology, Prasad had recognized three kinds of conditions—normative, fundamental and associative. Normative conditions are operative in nature and prescribe the process and help identify the expected excellence of the operations that would result from such prescriptions. **Instance 1.1:** Open-ended array and Canon of Differentiation Fundamental conditions, on the other hand, describe the vital concepts which are germane to the extremely nature of classification procedure. In their turn, associative conditions are those which extend the, meaning of the fundamental conditions into dissimilar contextual stages for discussion and operation in classification research.

Instance 1.1: Open-ended array and Canon of Differentiation Fundamental conditions
Therefore, there are in all 514 technological conditions used in the three editions of the Prolegomena. These terms have been distributed in the three planes of job—Thought Plane (298 conditions), Verbal Plane (35 conditions) and Notational Plane (181 conditions). In addition to the conditions, several new conditions and refinement of old conditions have resulted due to the job undertaken at DRTC (Documentation Research and Training Centre) through Ranganathan and his followers.

Further, the interdisciplinary nature of classification described for coordination of epistemological, logical, psychological, mathematical, linguistic and sociological concepts and conditions in papers and discussion at the Third International Revise Conference on Classification Research held at Bombay in 1975. The universality of classification concepts, then—capacity to interconnect many diversified styles to classification and ordering of knowledge were discussed at the conference. International Classification (now described Knowledge Organization), a periodical publication from Frankfurt, West Germany began job pertaining to the consolidation of terminology occurring in classification literature. Classification vocabulary started receiving refined further and made long exploit of concepts pertaining to Organizations Theory, Computer Science, Discourse Theory, etc. FID/CR (Committee on Classification Research) brought out many country statements at this juncture and Bliss Classification Cluster brought out many depth versions of the scheme.

**Classification Terminology: Indian School of Idea**

Throughout the last 100 years, a number of schemes of library classification have been intended in the world. At its meeting held in Brussels on 16 September 1955 the Common Assembly of FID adopted a settlement to the effect that necessary steps should be taken to prepare a glossary of classification conditions. Since a first step in this direction, it was recommended and agreed to in 1957 that each school of idea on the theory of classification should prepare the glossaries of conditions used through it and finally these glossaries should be collated to arrive at a Universal Comprehensive Glossary of all the classification conditions.

Further, with augment in Literacy and the phenomenal expansion and augment in number of libraries in the country, there was require having an authoritative and comprehensive glossary for the guidance of technological staff occupied in libraries. The Documentation Sectional
Committee of the Indian Standards Institution (now recognized as Bureau of Indian Standards) took up the preparation of a glossary of classification conditions.

This glossary of classification conditions current in the Indian School of Idea has been arrived at through three levels. In the first level, not only conditions of the Indian School but also of all other schools of idea in English speaking countries were taken. The definitions incorporated in the first draft were taken from the ALA Glossary and the jobs of Henry Evelyn Bliss, Donker Duyvis, S.R. Ranganathan, W.C. Berwick Sayers, B.C. Vickery and Frand S Wanger, Jr. In the second level, the draft incorporated only those conditions that were measured through the Sectional Committee since fit for retention. These incorporated few alternate conditions and few alternate definitions. At the third and final level, suggestions received since a result of wide circulation of the second draft were measured and the final average was prepared.

This average IS: 2.550-1963, contains 23 chapters under three broad headings: classification in common, universe for library classification, and classification of the universe of knowledge.

These core/vital concepts of classification are enumerated under the following headings:

- Universe and entity
- Cluster and class
- Attributes and features
- Disciplines and vital subjects
- Categories, facets and isolates
- Arrays and chains
- Schedules for classification
- Species of classification for subjects
- Notation

An effort is made to familiarize you with few of the core or vital concepts/conditions of classification in common. Other classification conditions are explained in the part Key Languages of Elements of Course BLIS—03: Library Classification Theory and Course BLIS—03P: Library Classification Practice.

**Sources of Classification Terminology**

The following are sources for classification terminology:

- ALA Glossary of Library Conditions; 1956
- BLISS (H E), Bibliographic Classification; 1-11, 1952
- Ranganathan (S R)
• Classification and Discourse; 1951
• The Series on General Isolates (Review of Documentation, 23-25; 1956-57)
• Prolegomena to Library Classification; Ed 2, 1957
• Classified Catalogue Code; Ed 5, 1964
• Library Classification Glossary (Annals of Library Science, 5; 1958; 76-112)
• Colon Classification; Ed 6, 1959 and Ed 7, 1987
• Units of Library Classification; Ed 3, 1961
• Notational Plane: Interpolation and Extrapolation. (Annals of Library Science. 10; 1963; 1-13)
• SAYERS (W C Berwick)
• Manual of Classification; Ed 3, 1955
• Introduction to Library Classification; Ed 9, 1958
• VICKERY (B Q. Faceted Classification.

**Universe and Entity**

There are substantial conditions in the Theory of Classification which are assumed conditions. While few of them are given few explanations, few are defined through being connected jointly in a report.

**Entity**

Any existent, concrete or conceptual—that is a thing or a thought is an entity for instance:

• A boy,
• A book,
• Sweetness,
• A organization of philosophy
• A subject of revise.

**Universe**

An aggregate under consideration in a given context, aggregate, in its turn, is a collection of entities, without any special arrangement in the middle of them. Universe may be of three kinds:
• **Finite Universe:** A universe with a finite number of entities, e.g., Students in a classroom.
• **Infinite Universe:** A universe with an infinite number of entities, e.g., Universe of integers.
• **Rising Universe:** A universe with new entities added to it or emerging, in it from time to time, e.g., Subjects of revise

**Cluster and Class**

**Cluster**

Any sub-aggregate of the entities shaped through the division of the entities of a universe is a cluster. Clusters, in their turn, are of two kinds:

- **Unitary Cluster:** Cluster consisting of one and only one entity.
- **Multiple Clusters:** Cluster consisting of two or more entities.

**Class**

Class is a ranked cluster and ranking is arranging in a definite sequence the clusters shaped through the division of the entities of a universe, thus since to arrive at a assortment of them. Classes are of two kinds

- **Unitary Class:** Class comprising one and only one entity
- **Multiple Class:** Class comprising two or more entities.

**Attributes and Features**

**Attribute**

Attribute is any property or quantitative measure or excellence possessed through or inherent in an entity. Ranganathan has cited the following examples in the Prolegomena.

**Feature**

On the other hand, a feature is an attribute, or any attribute-intricate with reference to which the likeness or unlikeness of entities can be determined and at least two of them are unlike. Features, in their turn, can be of dissimilar kinds.

- **Natural Feature:** A feature possessed in general through all the entities in the universe measured and inherent and inseparable from the entities For instance, height or age or skill of a person,
- **Artificial Feature**: A feature possessed in general through the entities in the universe measured but not necessary for their being incorporated in the universe. Examples are Clothe; worn through a person, Mode of dressing hair.

- **Division Feature**: A feature used since the foundation for the division of the entities of a universe. For instance, the aggregate of boys in a classroom is a universe. If we sort them on the foundation of their height, then the Division Feature is height and the boys of the similar height form a sub-aggregate.

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**Types of Library Classification**

When entities are books or other things of fact, their classification is described Library Classification. Library classification has also been defined since classification of knowledge contained in the books and other reading material. Library classification is ostensibly utilitarian in the sense that it has an immediate purpose. Library classification has got several meanings. It is Book Classification when it is used to arrange books and other macro documents on the library shelves. When it is used to arrange not the books but records to them, i.e., catalogues, or bibliographies it is described Bibliographic Classification. The Dewey Decimal Classification (DDC) was intended to be a book classification, whereas the Universal Decimal Classification (UDC) was intended to be a bibliographic classification. The word bibliographic classification is also used for depth or detailed classification, Detailed classification required for micro documents is recognized since Depth Classification. Library of Congress Classification is relatively a depth classification. A classification which is not too detailed and meets the requirement of little libraries is described Broad Classification. Riders International Classification and early editions of the DDC are broad classifications.

Classification for a smaller region of knowledge, say for economics, occupational safety, environmental engineering, or leather technology, is recognized since Special Classification. Special classification of the whole universe of knowledge is recognized since Common Classification. Library classification, whatever its types, may be defined comprehensively since:

- A systematic arrangement through subject of books and other studying possessions and/or same systematic arrangement of catalogue or index entries in the manner; mainly useful to those who are seeking either a definite piece of fact or the display of the mainly likely sources for the effective investigation of the subject of their choice. —Rita Marcella and Robert Newton

The purpose is to facilitate the optimum exploit of library possessions. It is a tool for fact retrieval both in manual and automated retrieval organizations.
Disciplines and Subjects

In a contemporary library the arrangement of documents is usually through subject. Therefore, subject is the feature of division for arrangement of books. A Subject is a systematized, homogeneous and cohesive cluster of idea or a chunk of knowledge whose depth and breadth are comfortably within the intellectual competence and; the field of specialization: of a normal intellectual person. But in library classification we are mostly concerned with what is recognized since a specific subject. A specific subject is always in the context of a document. A specific subject of a document is defined since the subject of the document whose extension (scope/breadth) and intension (depth/specificity) are equal to the idea content of the document.

Knowledge has been divided into major regions described Disciplines. A Discipline is a major continuous region, of knowledge shaped on the foundation of either the parallel of the objects of revise (i.e., whether natural objectives, or social issues); or, obtained through a same mode of revise or way of acquiring knowledge (i.e., whether imaginative, or empirical). Broadly speaking there are three major disciplines of the universe of knowledge:

- Sciences (revise of natural objects)
- Social Sciences (troubles of society)
- Humanities (through imagination/perceptions)

Though, connotations of a discipline modify from time to time. Nowadays all classifications are through disciplines—a breakthrough made through Melvil Dewey (1851-1931). A topic may fall under several disciplines.

Disciplines are further divided into vital subjects or main classes. A main class is conventional but extremely cohesive region of knowledge. In library classification it is more or lenses the first row of division of the universe of knowledge. A traditional subdivision of an old main class is recognized since a Canonical Class. For instance, heat, light, magnetism, electricity is canonical classes of the main class physics. Likewise algebra, geometry, analysis are canonical classes of the main class mathematics. Obviously the canonical classes are only of an ancient or traditional main class. A new main class such since library science, journalism, computer science does not have canonical classes. Main classes expounded from a school of idea; say Marxian economics or Newtonian physics or Homeopathy medicine, are recognized since Organization Main Classes. A main class studied from a specialized viewpoint, say aviation medicine, child medicine, sports medicine, or little level economy are recognized since Special Main Class. Likewise a main class expounded from a physical or social milieu or habitation is recognized since Environmental Main Class. For instance, war economy, high altitude engineering, tropical medicine is examples of environmental main classes. Main classes since such, canonical, organizations, special and environmental main classes, when taken jointly, are recognized since Vital Subjects. Ranganathan postulates that there are three types of subjects:
Vital subjects

- Are enumerated in the schedule of vital subjects;
- Cannot be expressed since the compound subject of any of the existing vital subjects;
- Are evolved through one full cycle of the spiral of scientific way since propounded through Ranganathan. They also exhibit dissimilar manners of formation of subjects; and
- Call for schedules of Special Personality Isolates, Matter Isolates and Power Isolates.

Library Science, Physics, Algebra; Ayurvedic Medicine, Marxian Economics, Psycho-
analysis are few of the vital subjects. The concept of a vital subject is social. The total number
and connotations of a vital subject modify from age to age and also from society to society. For
instance, the number of vital subjects in the sixth edition (1960) of the CC was in relation to
the 150 but in the seventh edition (1987) it has raised to more than 750.

A Compound Subject is a vital subject when it has at least one focus, or has at least an
aspect, i.e., it has a vital facet and one or more isolate facets. Agriculture is a vital subject, but
agriculture of wheat or diseases of wheat plants are compound subjects. Psychology is a vital
subject but child psychology, or personality disorder is compound subjects. The number of
compound subjects in this universe is infinite.

A Intricate Subject, on the other hand, is a two phased subject and is shaped through the
combination of two or more vital or compound. Subjects, and made to express the relation
flanked by them, but excluding the case when one of the subjects shapes an isolate of the other,
shaped through subject device. Examples:
- Psychology for nurses;
- Relative revise of Indian and British constitutions; or
- Power of geography on history, or relation flanked by anatomy and physiology.

Such subjects are mostly interdisciplinary. The procedure of analyzing an intricate subject
into its constituent stages is recognized a. Stage Analysis.

Categories, Facets and Isolates

A solitary, unattached thought, which cannot be further, subdivided, and through itself it
cannot form a subject, is described an isolate. For instance, the conditions wheat, child, India is
isolates since through themselves they are vague. These have meanings only in the context of a
main class. For instance, wheat diseases, child psychology or India: history has meanings. An
isolate is the ultimate division of knowledge. Going back a small, Ranganathan defines a compound subject since a vital: subject shapes a compound subject having one or more isolates, an isolate is the context of a vital subject shapes a compound subject and a Vital Subject is a vital subject without an isolate thought.

Isolates are grouped in what are described facets on the foundation of-general features. A facet is therefore a totality of isolates obtained on the foundation of a single train of features of a given entity. Since a matter of information, Ranganathan defined facet since a generic word used to denote any component—be it a vital subject or an isolate—of a compound subject, and also its respective ranked shapes, conditions, and members. We may speak of Vital Facet, Isolate Facet, Geographical Information, Language Facet, Educational Facet Property Facet, Organ Facet, Cultivar Facet, etc.

The totality of the facets having a general feature forms a category. For instance, in library science all the facets pertaining to the types of library, i.e., academic, public, special, form a category named personality category in this case. Yet; another category is the library behaviors, i.e., acquisition, processing, services, preservation, described power category in this case. A category is a highly, generalized division of knowledge. Ranganathan postulates that a subject is constituted of at the mainly five fundamental categories, namely, Personality, Matter, Power, Legroom and Time. In other languages all the concepts of the universe of knowledge belong to five and only five fundamental categories

**Arrays and Chains**

Isolates are arranged in what are described arrays and chains. An array is a sequence of coordinate (equally ranked) classes arranged in little definite order. Ranganathan defines array since a set of classes arranged in the proper sequence and derived from a universe on the foundation of a single feature at any step in the progress towards a complete assortment of the entities of the universe. For instance, when arranged in few order, say through roll number, or alphabetically through name or in order of merit, form an array. Likewise, the sons and daughters of the similar parents are said to form an array. All th4 continents of the world form an array; and all countries of the world when arranged in few order form an array. The army of classes, in its turn, can be an open array when admitting of extrapolation and a closed array when not admitting of extrapolation. A systematic or utilitarian arrangement of members of an array is described Helpful Sequence. This arrangement is described helpful, since it is helpful to the majority of the classification users though not to all. Broader clusters in an array are arranged in what is described a Filiatory Sequence. It means placing jointly closely related classes. The order of main classes in J.D. Browns Subject Classification (1906) is in the evolutionary order of matter 7 force—life—mind—record.
A chain is the sequence of classes of a universe consisting of a class and of its universe of successive removes, accepted backwards to any point desired—that is, all the members are of unequal rank and are arranged in the order of constantly decreasing extension and rising intension. The order in a chain is from common to specific or in the reverse order of specific to common. For instance, the World, Asia, India, Maharashtra, Mumbai form a chain of classes in this or reversed order. Likewise social sciences, economics, fund, money, banks form another chain of classes. Your grandfather, your father, and you form a chain of classes, but all your brothers and sisters form an array of classes. The arrangement of entities in a chain is always hierarchical.

**Classification Schedules**

Library classification invariably needs written has of damps and their subdivisions arranged in a systematic method beside with corresponding symbols denoting classes. This systematic and elaborate list of classes is recognized since Schedules. Schedules beside with an alphabetical index of classes referring to their symbols, and with few auxiliary concepts described general subdivisions, is recognized since Classification Organization. There are several organizations of classification, e.g., the Dewey Decimal Classification Ranganathans Colon Classification, and the Library of Congress Classification. There are in relation to the half a dozen livelihoods common classification organizations. An index is an alphabetical style to the systematic schedules. Topics which are scattered through discipline in the schedules are collocated in the index.

In addition to the schedules which are the core of a classification organization, there are few auxiliary tables of few recurring concepts, say geographical isolates, time isolates; language isolates, form of presentation of the document or to physical format, say book, journal, floppy, maps, CD-ROM or 4 videotape. These recurring concepts are issued once and for all beside with their given symbol. These auxiliary concepts are recognized since Average Subdivisions in the DDC; General Isolates in the CC and General Auxiliaries in the UDC. These usually symbolize the several non-subject aspect of a document or few peripheral but recurring subject characteristics.

The schedules may be either in print form or in electronic form, say, on a floppy or CD-ROM. The DDC, 21st edition is accessible in a CD-ROM format entitled Dewey for Windows.

A designer of a classification organization is recognized since classifications. S.R. Ranganathan, Melvil Dewey, H.E. Bliss, C.A. Cutter are some outstanding names of classificationists. A person who operates these organizations is recognized since classifier. Through BLIS-03P Course you are studying to be a classifier. The majority of the librarians are classifiers, too.
Species of Classification

There are broadly speaking two species of classification organizations—enumerative and faceted.

Enumerative classification is that in which all classes and their corresponding symbols are enumerated, i.e., listed. It consists essentially of a single schedule enumerating all subjects of the past, the present and the anticipatable future. In other languages, the symbols or series of symbols for a class are accessible readymade and the classifiers do not, have any require or power to construct a number. The Library of Congress Classification Organization, the Riders International Classification and the early editions of the Dewey Decimal Classification are examples of an enumerative classification organization. Enumerative classifications are contemptuously called since spot and park organizations.

An Approximately Enumerative scheme for classification consists of a big schedule enumerating mainly of the subjects of the past, the present, and the anticipatable future, and in addition some schedules of general isolates. Subject Classification of Brown and Dewey Decimal Classification are good examples.

On the other hand, the other species of classification is recognized since faceted classification which consists of schedules of vital classes, general isolates and special isolates only and comprises the Approximately-Faceted, Rigidly-Faceted and Freely Faceted classification. Through definition, an Approximately-Faceted scheme for classification consists of a big schedule enumerating mainly of the subjects of the past, the present and the anticipatable future; and in addition some schedules of general isolates and also few schedules of special isolates. In the next kind, the Rigidly-Faceted scheme for classification, the facets and their sequence are pre-determined for the whole subject going with a Vital Class. The first three editions of Colon Classification which have given a facet formula for each vital class are good examples of Rigidly-Faceted schemes. But, in a Freely Faceted Scheme for Classification, there is no rigid, pre-determined Facet Formula for the Compound Subjects going with a Vital Subject. It essentially is an, Analytico-Sythetic Classification guided through postulates and principles. While, editions 4, 5 and 6 of CC can be called since approximately-freely faceted schemes for classification, edition 7 of CC can be measured since a fully freely faceted scheme for classification.

Notation

It is well recognized that subjects should be arranged in a helpful dilatory sequence on the foundation of a scheme of successive features. Further, there is requiring mechanizing the arrangement, to mechanize means to eliminate require keeping in mind or believing the exact
connotation or denotation of the classes in their mutual relation. These two aids create the, following additional concepts necessary:

- Terminology; and
- Notation.

Since regards mechanizing an arrangement of subjects in a preferred sequence, one possibility is alphabetical arrangement. But, alphabetical arrangement, of subjects through their names, since 4 means of mechanizing their arrangement must, be ruled, out:

- Since the sequence it provides is not helpful
- Since the names of subjects are not stable
- Since the names of subjects are not unique
- Since the alphabetical location of a subject would modify with the language from which the name is taken
- Since the subjects denoted through a word are not unique.

**NEED AND PURPOSE OF LIBRARY CLASSIFICATION**

Since a participant in this course you are either a library worker or wish to be one. You are aware that libraries stay several kinds of documents. At the outset, it is necessary to know that libraries hold many kinds of collections like printed books, journals, manuscripts, maps, charts, micro-documents, CD-ROMs, video and audio cassettes, etc. All these collections should necessarily be arranged systematically.

There are three possible methods in which a reader may demand library material. He may inquire through the name of the author whose jobs he wishes to read, or through the title of the book. The third situation is that he may require book(s) on a scrupulous subject. This last one is recognized since subject style. In short, subject style is the means of securing strange things from the collection, and classification is the means of facilitating it. Library classification yields subject-wise arrangement of library materials in which documents are arranged through subject and each subject is followed through another subject related to it, e.g., physics following mathematics. This is recognized since systematic arrangement.

The other significant behaviors in a library such since book selection, circulation and reference services are somewhat indirectly dependent upon library classification. It is therefore no wonder that classification is widely regarded since the base of librarianship. Classification can ensure full use of library material and strengthen other services in a library. Requires for classification is all the greater in contemporary libraries, since they store dissimilar kinds of documents requiring diverse storage media. In other languages, documents on the similar
subject(s) get scattered throughout the collection because of their diverse physical shapes. Classification, though, is the means of bringing books on the shelves and their entries in a catalogue or index at one lay. Let us, so, acquaint ourselves with these dissimilar kinds of documents that contemporary libraries acquire and store.

**Documents**

We discover in libraries several kinds of documents, viz., manuscripts, printed books, periodicals, pamphlets, statements, photo reproductions, sound records, films, musical scores, microfilms, maps, atlases, charts, illustrations and electronic media things, such since CD-ROMs, through which human idea is communicated and preserved. Proper collection, storage and maximum exploit of these documents are the prime concern of present day libraries.

**Nature of Documents**

The problem of collection, storage and retrieval of documents has been complicated through the following factors:

- The steady growth in the output of several kinds of documents popularly recognized since the knowledge explosion or fact explosion or fact flood or fact boom or bloom.
- The publication of documents in several words of the world. The manufacture of documents in diverse physical shapes.
- The nature and complexity of the idea content of the subject matter presented in several shapes of documents.
- The complexity of readers’ style to documents and libraries.

Each document, like an individual, is not only unique but also exhibits dealings of considerable complexity with other documents. Extrinsic characteristics like mass, color, volume, binding, year of publication and intrinsic characteristics like idea content and their arrangement inside the document, or the nature of fact, i.e., textual, numeric, bibliographic or graphic, also add to the complexity of the problem of libraries for achieving the objective of maximum utilization of their collections.

The complexity of idea content and the nature of relationships flanked by several kinds of documents necessity be recognized and clearly recognized for their maximum exploit. The maximum exploit of documents can be ensured through:

- Personal assistance to readers,
- Systematic arrangement, and
- Proper display of materials in the library.
If the collection of a library is arranged in a systematic method documents can be situated and retrieved easily. A classification scheme is the map or device for the arrangement of books in the library.

**Collection and Storage of Documents**

From the dawn of civilization man has recognized require for collecting and preserving the records of human idea. Books and other graphic material are the records of human considerations, action and attainment and can serve since the foundation for future attainment. Their value to society, therefore, cannot be exaggerated. These records are composed and preserved in libraries for the benefit of present and future generations. These records, diverse in form and content, are referred to through the generic word documents.

**Factors Determining Arrangement of Documents**

Documents can be arranged in several methods in a library, e.g., through author, or through title, or through, subject or through foundation such since mass, language, color of binding or any other such criterion. Requires of the readers may be the criterion one can believe for arrangement of documents in a library. Mills, in his book Contemporary Outline of Library Classification, lists the following possible features determining the arrangements of documents:

- **Age of reader:** Childrens books are distinguished from adults books.
- **Circumstances attached to the exploit of the material:** Books for lending are distinguished from those to be consulted within the library. Usually Reference Books approach under this category.
- **Documents of rare mass:** Documents of an abnormal mass, oversize or undersize, are shelved separately. This is done to conserve legroom in the stack region.
- **Documents of rare gross body:** Micro cards, gramophone records, tapes, slides and other audio-visual material and electronic documents are shelved separately.
- **Idea content of the document (subject matter):** Factual literature is arranged through subject, imaginative literature through language or author.
- **Language of the document:** Documents in foreign words are separately arranged in their original words.
- **Value of the document:** Manuscripts and unusual and costly documents are shelved separately.
- **Peculiarities of form of presentation:** Files of bound periodicals are separately shelved.
- **Date of printing:** Incunabula—early printed books—are shelved separately.
- **Regional history collection:** Documents dealing with several characteristics of a lay, locality or area are shelved separately.

- **Gift collection:** A big number of books may be gifted with the condition to shelve them separately.

The factors power the arrangement of documents in libraries. But idea content or subject arrangement (fifth in Mills list) is still the dominant and significant facto—for deciding the sequence of documents. Though a collection can be divided into many parts on the foundation of any of the functional factors, it would still be helpful to arrange documents in each part on the foundation of subject matter. This leads to similarity sequences in the several collections in libraries. In any library, the total collection gets divided into few distinct collections of common books and reference books, textbooks, journals, etc. There are, therefore, several sequences of books on one and the similar subject in the library. These sequences are recognized since similarity sequences.

### Arrangement of Documents in Libraries

Until the end of the 19th century library collections were little in mass. Not since several subject meadows had urbanized since one notice now, and publishing was not since wide extend. The readership was not since big since we notice in the present times. Libraries of yesteryear attempted to arrange their collections on the foundation of fixed sites. This way was employed to allocate each and every document a scrupulous and permanent lay on a scrupulous shelf of the library. Each new document, irrespective of its idea content, was assigned to the lay immediately next to the one previously added to the collection.

The fixed site failed to bring jointly documents embodying the similar subject. Fixed site implied chronological order of accession under broad subject categories.

In few of the older libraries, efforts where made to arrange the collection on the foundation of extrinsic features such since color, mass, year of publication and kind of binding of documents. All these arrangements or sequences are not since helpful since the subject arrangement.

### Style of Readers for Documents

Since stated earlier, documents can be arranged in libraries on the foundation of the color of the binding, the mass, the language, the year of publication, the accession number and thus on. But these ways are outdated and unhelpful, since they cannot bring to the notice of the reader the author, the title or the subject matter of a document. There is small or no chance of your finding
today a library, which arranges its collection on the foundation of color, mass, year of publication or even the name of the publisher. It was possible to exploit these features for arranging books when the collections were extremely little in mass.

There are some libraries where the collections are arranged on the foundation of accession number or serial number. The other ways through which documents are usually arranged are through title, author or subject. This is because in present-day libraries, the readers’ style for a specific document is through title or author or subject. It is general practice that fiction is arranged through author, periodicals through title and scientific factual literature through subject. In few libraries, you can discover that even imaginative literature (belles letters) is arranged first through language, and within each language through form followed through author and, if necessary, through job number.

A reader may demand a document through a scrupulous author or of a scrupulous title or on a scrupulous subject. There are, therefore, mainly three styles to a collection, viz., author, title and subject. To what extent each of these is helpful is explained below.

**Author Style**

Usually readers go to a library to discover:

- A scrupulous document whose author is recognized or
- What documents through a scrupulous author are in the library

But the arrangement of documents on the foundation of the author is not always helpful. If you want a scrupulous document, or documents on a scrupulous subject, the author arrangement fails to bring documents having the similar specific subject and related subjects at one lay.

**Title Style**

Sometimes you may go to a library to get a document whose title you know. If the books in the library are arranged through title, it will meet your requirement. But the way of arranging documents on the foundation of title is also not extremely helpful. There is always a chance of a title being misquoted. Titles sometimes transform from one edition to another. The title of the similar document would differ when translated from one language to another. Sometimes the similar document is published in dissimilar countries under dissimilar titles, though the language may remain the similar.

Title arrangement, like author arrangement, fails to bring jointly documents having the similar specific subject at one lay. Because of these limitations; the arrangement of documents on the foundation of title is not extremely helpful.
Subject Style

In academic, special, technological and research libraries, and to a big extent even in public libraries, you will discover that the majority of readers style documents on the foundation of the subject. This subject style through readers has increased due to the growth in science and technology and also to a big extent in social sciences where the author and the title of a document are significant but not adequate. Due to the enormous output of documents in these meadows, it is often hard to recall a specific title or author correctly except for in the case of classics.

So, one discovers that in well organized libraries documents are arranged on the foundation of subject matter. This arrangement helps to bring documents embodying the similar specific subject jointly and those on related subjects in their secure proximity on the shelves. This would result, since Ranganathan puts it, into an APUPA arrangement that will provide reader the greatest satisfaction at the moment in full conventionality to all the Five Laws of Library Science. In this arrangement, the focal point of ones main interest is the UMBRAL AREA. This is followed on, either face through the PENUMBRAL AREA represented through subjects on either face of the UMBRAL area having successfully a decreasing bearing on the umbral area. The penumbral area will ultimately thin into ALIEN AREAS. This is helpful and convenient especially on open access libraries. Readers can directly go to the shelves and browse through the library collection. Usually, the objective of libraries is to have an APUPA ARRANGEMENT EVERYWHERE.

Subject arrangement, hence, helps bring jointly on the shelves documents on one and the similar subject followed through those of related subjects. Suppose you are looking for a specific document on say, physics, you can discover, where subject arrangement exists, documents not only on physics, but also those related to it in secure proximity, i.e., chemistry. It may thus occur that if a specific title wanted through you is not accessible, you can discover another title on the subject that may extremely well meet your requirement. Few scholars may require everything accessible on their topic. You will notice that close to the books on chemistry you will also discover books on related subjects like mathematics and astronomy on one face and chemistry and biology on the other. Subject arrangement of documents enables you to know:

- What documents the Library has on a specific subject; and
- What is the excellence of collection on that subject, and what are the gaps in the collection?

This type of arrangement is recognized since filiatory sequence. In big and special libraries, having many parts such since:

- Text books
- Reference books
- Theses and dissertations
- Pamphlets
- Bound volumes of periodicals

You will discover that all these dissimilar collections are arranged through subject by a scheme of library classification:

- It has been the measured opinion of experts that the arrangement of documents on a foundation other than subject may not meet the necessities of the majority of readers in modern libraries. Nowadays the subject style to books is predominant. Eminent classificationists like Melvil Dewey, J.D. Brown, C.A. Cutter, W.C.B. Sayers, S.R. Ranganathan, H. E. Bliss and others advocate the subject arrangement of documents. Subject arrangement, though, does not mean that there is no scope for the author and title styles. These styles are taken care of through the author and title catalogues. Subject arrangement, then, is paramount and the foundation for it is the subject content of documents. Library classification is the technique used in libraries for mechanizing of these subject content documents: It is a technique for creation libraries more helpful.

Classification

Meaning of Classification

Systematic grouping of entities (both abstract and concrete) to meet ones requirement is recognized since classification. Classification lies at the root of all human behaviors. Our daily life is extremely much dependent on the procedure of classification, though, elementary this procedure may seem. You can surely recall a number of behaviors approximately you where classification plays its section. Take, for instance, the arrangement of contents in a railway time table, the display of goods in a grocery shop, the arrangement of modules in a departmental store to facilitate the selection of goods through customers, the seating arrangement in a theatre or stadium, the assignment of registration numbers to several motor vehicles through a state transport power, or the sorting of letters through postmen first through the municipality, then through the street and lastly through the homes numbers for quick delivery of post. These are easy examples of how we exploit classification in our behaviors.

The word classification was derived from the Latin word classes which meant order or rank of mobility in Roman society based upon birth and wealth. Classification is a mental procedure through which we cluster or distinct things on the foundation of general features. For instance, things grouped jointly on the foundation of a general feature like script material. In other languages, classification is an effort to identify a class for like things. We succeed in our effort through applying a feature and isolating all like things on that foundation from unlike things. Classification in essence means dividing into clusters, grouping, sorting, arranging, ordering, ranking and relating one entity to the others.
S.R. Ranganathan, in his Prolegomena to Library Classification elaborately discusses the meaning of classification. In the case of physical objects, division and assortment are the two results of classification. According to Ranganathan, while division implies sorting objects into two or more clusters; assortment additionally denotes arrangement of these clusters in a predetermined sequence. Further, in library classification, the sequence of objects, i.e., documents, is thus mechanized through the exploit of notation that it is reflected in the notation when a document is withdrawn or added.

Therefore, one can see that the word `classification is a homonym. Ranganathan, so, tried to resolve the homonym through examining the several methods in which the word has been used:

- Classification in Sense 1 is DIVISION.
- Classification in Sense 2 is ASSORTMENT.
- Classification in Sense 3 is CLASSIFICATION IN SENSE 2 plus on behalf of each entity through an ordinal number taken out of a organization of ordinal numbers, intended to mechanize the maintenance of the sequence,
- Classification in Sense 4 is CLASSIFICATION IN SENSE 3 when complete assortment is made of an amplified universe—that is when the entities and the pseudo-entities arising in the procedure of successive assortment stand arranged in one filiatory sequence.
- Classification in Sense 5 is CLASSIFICATION IN SENSE 4 with all the entities removed but only the pseudo-entities or classes retained.

It is classification in Sense 5 that is used:
- Either when the universe classified is infinite,
- When few of the entities are strange and unknowable at any moment, even though the universe classified is finite.

It is classification in Sense 5 that is practiced through the library profession. The primary concern of libraries is to set up the mainly helpful arrangement of documents. Library classification, so, presupposes the exploit of notation, i.e., a brief symbol for the names of subjects. It is in this sense that the word classification is used in this and other elements.

**Definition of Library Classification**

Having understood the meaning of classification in library science, let us now go through some well-recognized definitions of library classification.

Library classification has been defined through both the classificationists and the critics, all necessarily underlying its utilitarian aspect. Classification is the arranging of things according to likeness and unlikeliness. It is the sorting and grouping of things, but in addition, classification
of books is a knowledge classification with adjustments made necessary through the physical form of books. W.C. Berwick Sayers defines it since the arrangement of books on shelves or account of them in the manner which is mainly helpful to those who read. Arthur Maltby revises Sayers definition since the systematic arrangement of books and other material on shelves or of catalogue and index entries in the manner which is mainly useful to those who read or who seek a definite piece of fact. Ranganathan is more elaborate in his definition.

According to Ranganathan, it is the translation of the name of the subject of a book into the preferred artificial language of ordinal numbers, and the individualization of many books dealing with the similar specific subject through means of a further set of ordinal numbers which symbolize few characteristics of the book other than their idea content. In this definition, we discover three significant phrases, viz.

- Artificial language,
- Ordinal numbers, and
- Specific subject.

**Artificial Language**

In library classification we exploit symbols to denote subjects. The names of subjects are in ordinary language understandable to an ordinary person. So, we call it the natural language which comes naturally to the human being livelihood in a society. On the other hand, the symbols that we may exploit to denote a subject, say B, or 510, or QA for mathematics are artificial in the sense that the general man will not ordinarily understand the meaning of these symbols. Hence these are artificial and intelligible to a specifically trained class of professionals. Their value is only ordinal, which means that these symbols have no quantitative or qualitative value; they only determine the sequence/order of documents on the shelves. These symbols also uphold/preserve the chosen sequence since the books will be replaced at their proper lay after taking them out for reading or lending. These symbols do not indicate anything except for the order/sequence of these documents on the shelves.

**Ordinal Numbers**

These are used not for the purpose of counting but ordering and mechanizing the arrangement of things. For instance, participants in a conference can be listed in a desired sequence on the foundation of little appropriate principle and then this sequence can be mechanized with the help of ordinal numbers.

Melvil Dewey, the father of contemporary library classification, was the first classifications to exploit easy Indo-Arabic numerals (0-9) since ordinal numbers for the systematic listing of subjects both broader and narrower, in his Decimal Classification first
published in 1876. As then the organization of ordinal numbers-notation since it is described in library classification-has been the principal unit in the design and exploit of library classification schemes.

Specific Subject

The contents of a document may trade with few field of knowledge. It is a prerequisite for a classifier to know what subject matter the document exactly contains. After ascertaining the exact subject, or specific subject, the classifier translates that specific subject into the artificial language or ordinal numbers of the classification scheme used. In order to know the specific subject of the document the classifier has to look at its title, contents page, preface and introduction, and to scan through few chapters, and, if necessary to go through the whole book. There may be sure occasions where a classifier has to consult an expert to ascertain the specific subject of a document.

Ranganathan defines the specific subject of a document since that division of knowledge whose extension and intension are equal to those of its idea content. Extension means the scope if the subject treatment and intension means the depth of the subject treatment in a given document.

Palmer and Wells describe it since that division of knowledge which exactly comprehends all the major factors that go in its creation. Let us take an instance and perform an analysis to ascertain the specific subject.

A.L. Srivastava

A Short History of Akbar the Great, Agra, Shivlal Aggarwal, 1957. It is possible to interpret the contents of this book since Mstory or `History of India or `History of India throughout the Mughal Era. All these possible subjects are not specific sufficient and are too broad to convey the actual idea content of the book. It is, so, necessary to add one more phrase to the analysis to create it complete, and that phrase is `Reign of Akbar. All these characteristics should now be brought into the class number. If you omit any of these characteristics, the extension and intension will not be equal to the idea content of the book. The specific subject of the book can be arrived at since follows History

- Indian History
- Mughal Era
- Akbar
- Reign

The extension decreases and the intension augment with every successive division. This sort of subject ordering is described common to specific. Ranganathans definition of classification refers to two objectives:
Translation of the subject into an ordinal number and individualization of a given document in the total order of documents in a library.

The subject of the document is translated into a class number with the help of a notation. But, many documents are likely to bear the similar class number and the problem of individualization arises. The class number is, so, not sufficient. It has to be complemented through one, or if necessary, through two, additional units. These additional units are:

- Book number
- Collection number.

Class number, book number and collection number constitute the call number of a document.

**Purpose and Function**

We have thus distant studied the meaning of classification. We also have studied the importance of a call number. We would now do well to see what exactly is achieved through classifying documents and arranging them in a systematic method in a library.

In the period of the fact revolution, the role of libraries in acquiring and organizing several kinds of documents hardly requires any emphasis-Libraries since service organizations acquire documents for exploit. These acquisitions should systematically be arranged thus since to meet the ever rising requires of readers precisely, exhaustively and expeditiously.

The arrangement will not be helpful in meeting the necessities of the majority of readers who usually style a library for subject material. In other languages, documents should be classified and arranged on the foundation of their subject content.

We are witness to the fact revolution. Documents are published in several words in several disciplines in diverse shapes. Libraries have always been acquiring books and adding them to their collections. So, the collection of an active library continues to grow year after year. Ranganathan compares active and effective libraries with rising organisms, in an unclassified library, when the collection grows steadily into thousands and lakhs of volumes, it t would be hard for the library staff to place hands on a scrupulous document required through a reader. To meet the subject style of readers the collection necessity necessarily be classified through subject.

In libraries where the collection is arranged through accession number, or author or title, and not through subject, books on the similar subject will be scattered throughout the collection. Even if the books are arranged alphabetically through subject, the resultant sequence will not be helpful, since unrelated material will approach jointly. The following instance:

- Adult education
This kind of sequence of subjects surely is distant less useful and will fail to meet the
necessities of readers. Alphabetical sequence leads to alphabetical scattering of logically related
subjects. It is through systematic arrangement that a filiatory sequence or collection of closely
related subjects can be achieved. For this we need a scheme of library classification. Here is an
instance 1.2 of arranging documents on the foundation of Dewey Decimal Classification which
brings documents dealing with dissimilar characteristics of economics systematically one after
another at one lay in a collection.

**Instance 1.2: Arranging Documents on the Foundation of Dewey Decimal Classification**

<table>
<thead>
<tr>
<th>Class</th>
<th>Title</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>330</td>
<td>Economics explained</td>
<td>R.L. Hirshman</td>
</tr>
<tr>
<td>331</td>
<td>The economics of work and pay</td>
<td>Albert Reis</td>
</tr>
<tr>
<td>332</td>
<td>Essentials of finance</td>
<td>R.G. Jones</td>
</tr>
<tr>
<td>333</td>
<td>The economics of natural resources</td>
<td>R. Levenber</td>
</tr>
<tr>
<td>334</td>
<td>Cooperative living</td>
<td>M. Dighty</td>
</tr>
<tr>
<td>335</td>
<td>Socialism without the state</td>
<td>E. Ludel</td>
</tr>
<tr>
<td>336</td>
<td>The fiscal system of Hong Kong</td>
<td>H.C.Y. Ho</td>
</tr>
<tr>
<td>337</td>
<td>Building Europe: Britain's partners in EEC</td>
<td>K.J. Twitchett</td>
</tr>
<tr>
<td>338</td>
<td>Production economics</td>
<td>M. Fuss</td>
</tr>
<tr>
<td>339</td>
<td>Macroeconomics</td>
<td>J.B. Berre</td>
</tr>
</tbody>
</table>

Within each class the arrangement is accepted out finally and minutely, e.g.

- 300: Social sciences
- 330: Economics
- 332: Financial economics
- 332.1: Banks and banking
- 332.11: Central banks
- 331.110 954: Reserve Bank of India

Libraries stock several kinds of documents for dissimilar purposes. Classification helps
achieve a systematic arrangement of dissimilar kinds of documents.
In large libraries, the collection is segregated in dissimilar parts or departments. This is done for the efficient and effective exploit of library collections and for the convenience of dissimilar kinds of readers. In each department, the collection needs a classified arrangement. An unclassified collection, even though equipped with necessary guides, would be of no exploit since the readers feel lost in the ocean of books wasting their precious time to discover documents. It has rightly been said that to locate a book in an unclassified library is since hard since to locate a needle in a haystack. On the other hand, a systematic arrangement helps readers to get documents without loss of time. Therefore the time saved through the library staff can be utilized for rendering personalized reference service for the benefit of readers. A systematic arrangement of documents creates order out of chaos. It gives a panoramic view of documents accessible in a library on a given subject beside with those on closely related subjects. This filiatory sequence of subjects facilitates readers not only in receiving his/her documents, but also helps them know the strength and weakness of the collection. The second, third and fourth Laws of Library Science, viz., Every reader his/her document, Every document its reader and Save the time of the reader, since expounded through Ranganathan, can be practiced through libraries through the systematic arrangement of documents. The First and Fifth Laws, i.e., Books are for exploit and A library is a rising organism also advocate a systematic classification of books in libraries.

The arrangement of documents on the shelves is in a progressive order of complexity, i.e., from the common to the specific. Colon Classification is able to arrange documents in an APUPA pattern. Such an arrangement is in pedagogical order, i.e., it is self-educative and reflects the progress of that subject in an evolutionary order. The functions of library classification can be summarized since follows:

- Library classification helps to arrange documents in a systematic order, which is mainly convenient to the reader and the library staff. It brings related subjects in secure proximity, described collocation through Henry Bliss.
- It helps the identification and site of a document on a given subject wanted through a reader whatever may be the mass of the library collection. Documents can be quickly retrieved from and replaced to their original positions. The site, lending and replacement of documents are completed mechanically in libraries.
- It helps to arrange documents into organized clusters, like pigeonholes; and when a new document is added to the collection, classification discovers a suitable lay for the newly added documents in the middle of the other documents on the similar subject.
- The universe of knowledge is dynamic, continuous, infinite and ever rising. New regions or subjects are being continuously added to the sum total of human knowledge. When the first document on a new subject is added to the library collection, it discovers itself at the
suitable lay in the middle of the already existing related subjects, i.e., in the middle of its kith and kin and according to the stage of its connection to them.

- It helps to organize book displays and exhibitions. It facilitates withdrawal of sure documents from the main collection for special purposes and occasions such as book talks, seminars, symposia, conferences and special exhibitions, on a given topic.

- It helps in recording the daily issue and return of documents on several subjects at the circulation counter of a library. This facilitates the compilation of statistics on issues, which reflect the pattern of exploit and demand of documents on dissimilar subjects. The feedback helps in the allocation of funds to several subjects and guides the book selection policy of the library. The statistics thus composed can be incorporated in the annual statement of the library.

- Stock verification is an extremely significant aspect of library management. Library classification, through the medium of shelf lists, facilitates an efficient and thorough stock verification of the library’s holdings.

- It helps in the compilation of reading lists. This facilitates facet analysis of the reference queries on several characteristics and indirectly helps in an efficient reference service.

- It helps in the compilation of subject union catalogues and bibliographies of books and other reading material. The union catalogues are extremely significant apparatus for resource sharing and cooperation in the middle of libraries.

- Classified catalogues are only possible with a classification scheme. In a research library classified catalogues are preferred in excess of dictionary catalogues.

- It assists in systematically deriving subject entries. It also aids the cataloguer to exploit the alphabetical list of subject headings for deriving specific subject headings through class numbers, i.e., through the chain process.

- Classificatory principles are used in subject headings and thesaurus construction.

- It helps the library staff, especially the classifiers, to be aware of and comprehend the complexities in the evolution of the universe of knowledge, which is the foundation for a systematic arrangement of documents in libraries.

- Nowadays classification discovers immense uses in OPACs. In a computerized catalogue, the class number field can be used in combination with other meadows such as language, date or even subject heading and can be used with logical operators such as AND/OR/NOT or the Boolean logical operators. Class numbers can be used to broaden or narrow the searches. Class number searches in combination with other meadows augment the efficiency of the fact retrieval organization, of which classification is a tool.

- It is the foundation for the organization of knowledge embedded in documents for maximum exploit. It is the foundation for efficient bibliographic manage and retrieval of documents. It is a great time saving device for the reader and the library staff. Since
Hulme puts it, it is a mechanical time saving device for the detection of knowledge in books.

**REVIEW QUESTIONS**

- Explain the different kinds of library classification.
- Define the terms “Discipline” and “Subject”.
- Define "Notation" and "Notational System".
- Write a brief note on the different approaches of readers to finding documents in libraries.
- Explain the components of a call number. How a call number is constructed?
CHAPTER 2

Theory and Development of Library Classification

STRUCTURE

- Learning Objectives
- General Theory of Library Classification
- Species of Schemes of Library Classification
- Learning about Subjects
- Review Questions

LEARNING OBJECTIVES

After reading this chapter, you will get acquainted with the:

- Need and importance of a general theory of library classification
- Place of postulates, principles and canons in the theory of library classification
- Know the different species of library classification being used today for the organisation of knowledge
- Become familiar with the major systems of general and special classification
- Get a clear grasp of the structure and development of the Universe of Subjects

GENERAL THEORY OF LIBRARY CLASSIFICATION

Theory of Library Classification

Before we effort to revise the Theory of Library Classification, it is necessary for us to know the importance of developing a theory. It is equally necessary for us to recognize require for such a theory.

*Importance of a Theory*

At the outset, one necessity knows what constitutes a theory and how it is significant for evolution of a subject. A theory refers to an organized set of principles, which gives the foundation for further investigations into and the evolution of a subject. It explains the and why of the existing phenomena. It qualifies the subject to be carried since a discipline. It gives a scientific foundation distant a subject and brings respectability and status to it. Its importance for the growth and evolution of a subject hardly requires emphasis.
Require of a Theory

If we seem into the history of library classification, we discover that throughout the early levels of its evolution it handled a little number of subjects constituting the whole of knowledge, and a broad classification met the necessities of that time. The schemes were prepared mainly in response to the exigency of the time. These schemes look to have been guided through the purpose on hand rather than a theory that would stand the test of time. These schemes solved the immediate and short-word troubles. With the rising complexity of subjects enshrined in documents it became necessary to classify knowledge minutely. This complexity described for a theory of library classification which could meet the challenges posed through the turbulent growth in knowledge.

Evolution of a Theory

In any sphere of life, practice precedes theory. Life force stimulates man to improvise, design, and develop several aids—both at the physical and mental stages. After an extensive experience is gained with an improvised aid, a theory is urbanized in order to understand the, aid deeply and to systematize, improve, refine and develop it. Thus also it has been with classification. Within fifty years: after the design of Decimal Classification, Richardson adds Sayers made relative studies of the then recognized schemes for classification; and they also evolved a Theory of Classification. It was mainly a descriptive formulation and interpretative explanation. It was static and not dynamic. The emphasis at this level, according to Parkhi in his book Library Classification, Development of a Dynamic Theory, was on the account of the practices followed through the classificationists in designing their schemes and were measured since norms for designing schemes.

On the other hand, after 1949, Ranganathan and his associates gradually evolved a Dynamic Theory of Classification. The first consolidated explanation of this Dynamic Theory was published in 1957 in the Prolegomena to Library Classification, through Ranganathan. This was further refined after the establishment of DRTC at Bangalore in 1962, which provided facilities for deepening the Theory of Classification and creation it more dynamic and applicable both to book classification and article classification. Consequentially, active job in the design of depth classification schedules for the classification of articles progressed. Require for such a dynamic theory is obvious since it only could give guidelines for the evolution of subject classification in the future.
In the beginning there was no theory; only practice was followed. Practice gave rise to descriptive theory. Therefore, the descriptive theory was the first level in the evolution of library classification. This theory was able to meet the necessities of the universe of subjects since it lived at that time. The descriptive theory was based on the practices in vogue based on dissimilar schemes of classification then accessible. The descriptive theory, distilled out of the modern—schemes, held its sway until the early 1950s. The schemes intended before the 1950s were based on `the flair or natural gift of the designers and not on any objectively worked out theory of library classification.

Their ways were empirical. The evolution of the descriptive theory is attributed to many stalwarts like Brown, Richardson, Hulme, Sayers, Bliss and Ranganathan. The era flanked by 1898 and 1937 witnessed the genesis and evolution of this theory. These stalwarts, through their schemes and writings, enunciated sure principles of library classification which greatly contributed to the evolution of a Common Theory of Library Classification.

**J.D. Brown (1862-1914)**

J.D. Brown was an English librarian, whose contribution to the Common Theory of Library Classification was little but important. He brought out three dissimilar schemes of classification. The first of these three was urbanized in 1894 together with J.H. Quinn and was recognized since Guinn-Brown Scheme. This scheme did not create much impact. Three years later, in 1897, Brown independently brought out another scheme and described it Adjustable Classification. This scheme also proved inadequate even in those days. In the year 1906, Brown published the first edition of his Subject Classification, the scheme for which he is mostly recognized. Its second edition was brought out in 1914 and the third; edited through J.D. Stewart; in 1939.

Browns Subject Classification was founded on the principle that every science and art spring from. In the order of things, there were first two factors, viz., matter and force. These, in turn, gave lay to life. Life, in course of time, led to the mind, which in turn gave birth to records.

In addition to the shove principle, Brown also advocated two other principles. The first of these two was his one lay theory. Each subject has only one lay in the scheme irrespective of its characteristics and numerous manifestations. For instance, the subject of rose may be viewed from the viewpoints of botany, horticulture, history, geography, decoration, bibliography, etc. The subject of rose is concrete, while the several viewpoints symbolize its characteristics. He was of the opinion that the interest of the scholar in `rose is consistent, unlike that of the bibliographer whose interest is only occasional. It means that his arrangement of books was not lt discipline.
The other principle advocated through Brown was the science and its applications theory. He spaces each subject since nearer since possible to the science from which it has sprung. Therefore, rose is placed under botany, libraries under library economy, coal under mineralogy, and persons under biography. Theory and practice are collocated. Since a result of this principle, Brown dispensed with conventions, distinctions and groupings, which are arbitrary rather than scientific. for instance, the distinction flanked by Pure and Applied Sciences, flanked by Fine Arts and Useful Arts, flanked by Currency and Numismatics, flanked by Architecture and Structure and flanked by Costume and Press was not made. He faithfully followed these principles in his Subject Classification.

E.C Richardson (1860-9939)

E.C. Richardson was the first librarian of Hartford Theological Seminary, USA, and later took in excess of since librarian of the Princeton University Library. Richardson is regarded since the first classificationists to have a systematic effort to set down a theory of library classification. In 1910, he published his book Classification, Theoretical and Practical. It was the first textbook on classification, which later convinced W.C.B. Sayers. In the introduction to this job, he enumerated vital laws and principles meant to guide the job of designing a scheme of classification. These principles, described since Criteria of Classification, are since follows:

Classification should follow the order of things; classes should be arranged in historical sequence.

- Division of classes should be minute.
- Arrange things according to likeness and unlikeness.
- Books are composed for exploit; they are administered for exploit, and hence, it is the exploit, which is the motive behind classification.
- A scheme of classification should be provided with a notation. The notation should be amenable to indefinite subdivisions preferably by a mixed symbol with decimal foundation and with mnemonic characteristics.

Richardson asserted that things: nature aye already classified and roan has to trace only the order -of the classification and record if.

E.W Hulme (9659-1954)

Hulme was the librarian of the Patent Office Library, London. In 1911-1912, he published his book Principles of Book Classification in the library Association Record. Has principles convinced the later theories of book-classification. In the languages of W.C.B. Sayers, the
contribution of Hulme was a precious lead up to the more complete and satisfactory theories today. All classifications could be arranged into two clusters (categories), viz.,

- Mechanical and
- Philosophical

Book classification is mechanical. Hulme's principles of book classification are as follows:

- Book classification is the plotting of regions pre-existing in literature, and coincidence with a philosophical order is no guarantee of accuracy.
- Book classification is mechanical assembly of material into classes.
- The division and coordination of classes in literature is determined mainly upon formal and non-philosophical lines.
- Classification should be based on literary warrant.

Hulme states that mechanical classifications are left uncoordinated. But in book classification, systematic coordination of classes is introduced. His theory of literary warrant immensely attracted the attention of later classificationists. E.A. Savage (1877-1966) revived the word. Hulme regards books as concrete aggregates of facts selected from the general stock of knowledge. What Hulme meant through concrete aggregates is that if there are books on the subject of electricity and magnetism, there is literary warrant for providing a number for such a class named electricity and magnetism. Literary warrant basically means that a subject cannot be listed in the scheme unless little literature has already emerged on it. Cr, the existing literature on a subject only justifies the inclusion of that subject in the scheme.

Hulme's principle of literary warrant greatly convinced the Library of Congress Classification (LC). Ranganathan also made exploit of this principle, but not exactly in the sense Hulme made, exploit of it. According to Ranganathan, when the literature on a scrupulous subject grows in mass, there may arise require for providing a distinct class for it in the scheme. Ranganathan's principle of literary warrant states that the subjects in an array of subjects or the isolates in an array of isolates may be arranged in the sequence of decreasing quantity of the documents published or anticipated to be published on them, except for when any other overwhelming consideration rules it out. Hence, it needs that the several characteristics of such a new subject should be thus listed since to bring those characteristics first on which more literature have emerged.
W.C.B. Sayers (1881-1960)

William Charles Berwick Sayers, an English librarian and teacher of S.R. Ranganathan made an extra ordinary contribution to the evolution of the theory of classification. He is referred to since the first grammarian of library classification. He is responsible for interpreting and systematizing the thoughts of other theoreticians. He never intended any classification scheme, though, through his theory he has shown the method for others in the designing of classification schemes. His theory of book classification first emerged in 1915 under the title Canons of Classification.

Sayers Canons of Classification: Sayers simplified his theory of classification through stating 29 principles. He described those canons, meaning rules, regulations, average tests or criteria of classification. Exhibit 2.1, the 29-canonis can be grouped under six categories since follows:

Exhibit 2.1. 29-canonis can be grouped under six categories

<table>
<thead>
<tr>
<th>Canons of definition</th>
<th>...</th>
<th>...</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canons of division</td>
<td>...</td>
<td>...</td>
<td>7</td>
</tr>
<tr>
<td>Canons of terms</td>
<td>...</td>
<td>...</td>
<td>4</td>
</tr>
<tr>
<td>Canons of book classification</td>
<td>...</td>
<td>...</td>
<td>4</td>
</tr>
<tr>
<td>Canons of notation</td>
<td>...</td>
<td>...</td>
<td>4</td>
</tr>
<tr>
<td>schemes</td>
<td>...</td>
<td>...</td>
<td>5</td>
</tr>
</tbody>
</table>

These are discussed below:

- **Definition:** Classification is a mental procedure through which things or thoughts are grouped according to their likeness. The likeness which exists in the universe of things and in thoughts is described feature in classification. A feature is a foundation of division or grouping of classes. In a scheme of classification, classes are to be arranged in a systematic order. The order is based on the theory of knowledge.

- **Division:** Assembling things according to their degree of likeness and separating them according to their degree of unlikeness is the procedure of division. The chosen likeness or feature used to divide the given things may be natural or artificial. A natural feature is the inherent excellence of a thing and hence, is responsible for its extremely subsistence. An artificial feature may be possessed through a cluster of things. For instance, color of clothes is an artificial feature. The division should proceed from greater extension and smaller intension to smaller extension and greater intension. The procedure of division should be gradual moving from common to specific. The feature used necessity is constant at each level of division.

- **Conditions:** A scheme of classification is a report of knowledge by verbal conditions. A word is the name for a class. It may be a word or a phrase. The conditions should be unambiguous and unique with the similar meaning whenever they are used in a scheme of
classification. In a scheme of classification the conditions used should always be non-critical.

- **Book Classification:** A book classification is a device for the arrangement of books through subject or form in a logical order. It necessity be capable of admitting any new subject without dislocating the class of subjects already drawn. Book classification schemes necessity be equipped with:
  - A generalia class;
  - Form classes like poetry, fiction, drama, etc.;
  - Shapes in which subjects are presented like theory, history, dictionary, etc.;
  - A notation; and
  - An index.

- **Notation:** A notation consists of signs on behalf of the class names in a scheme of classification. A notation should be brief, easy and flexible and have a mnemonic value.

- **Book Classification Schemes:** A scheme of classification should give columnar schedules in the order of precedence of subjects. It is necessary to explain how to exploit the scheme. There should be machinery for the revision of the scheme to stay it up-to-date accommodating new developments in the knowledge.

**H.E. Bliss (1370-1955)**

He Evelyn Bliss devoted his whole active life to the rigorous revise of the art and science of classification. In addition to the articles; which he contributed in library journals, his theories and principles of classification were expanded in his first job, titled Organization of Knowledge and the Organization of Science (1929). In this job, he formulated scientific, philosophical and logical grounds for the revise of bibliographic classification. This job is regarded since one of the vital texts on the theory of organization of knowledge. He laid down the base for a relatively stable, scientifically acceptable and constant scheme of classification. He also published another vital job on the theory of library classification titled Organization of Knowledge in Libraries and the Subject Style to Books (1933, 2nd ed. 1939). His job helped in establishing librarianship since a scholarly discipline.

These two vital jobs convey to us the fundamental principles of classification which Bliss later tried to apply in his Organization of Bibliographic Classification (BC) whose outline was first published in 1935.

The vital concepts of classification since expounded through Bliss may broadly be categorized since:
- Consensus
- Subordination
Consensus: Bliss viewed book classification since simply knowledge classification. He felt that considerable agreement lived in the middle of the experts on the arrangement of several branches of human knowledge. He termed this since scientific and educational consensus. The growth, organization and evolution of human knowledge are brought in relation to the through the procedure of science and education. The word consensus refers to a relative agreement on the major classes of knowledge, their scope, order of arrangement and the essential relation flanked by them. He whispered that the natural order of main classes was secure to this consensual order. Bliss felt that more closely a library classification reflected this consensus, the more stable, durable, flexible and efficient it would be. His order of main classes is based on this consensus.

Subordination: Bliss theorized that a classification scheme should observe two kinds of subordination, viz.,

- Subordination of the special to the common, and
- Gradation through specialty

Subordination of the special to the common: This is also referred to since the principle of decreasing extension. A scheme of classification should arrange subjects in the order of decreasing extension thus that a common subject is followed through a special subject. The order of subjects in a scheme of classification should reflect the sequence from common to specific.

Gradation through specialty: This concept is based on the philosophical notion of gradation through specialty. Gradation principle is employed for organizing a series of topics of equal rank into a rational sequence. The principle is that few subject depend for their extremely subsistence on the jobs or findings of others, and those that thus dependant should follow the disciplines upon which they rely. This is also recognized since the principle of dependency. For instance, in the middle of the natural sciences, physics comes first because it trades with the fundamentals of natural phenomena. Chemical phenomena too little extent on the findings of the physicists and, so, chemistry follows physics. Bliss claims that gradation through specialty is no mere arbitrary foundation for classification but is a principle essential to the extremely procedure. Therefore, the order of classes will be :

- Common treated usually.
- Common treated specially.
- Special treated usually
- Special treated specially.

**Collocation:** It is a through product of the two principles. Through collocation, Bliss means bringing jointly in proximity subjects who are mainly closely related. Ranganathan termed this since filiatory sequence. The principles of subordination and gradation through specialty help to decide the sequence of broad subject meadows or disciplines and, within each subject, the principle of decreasing extension and several orders in any array determine the sequence of the subject. It is also necessary for bringing jointly same subjects, which are mainly closely related. So, Bliss, in his Bibliographic Classification, collocate language with literature, because of their extremely secure affinity with each other. Likewise, education is collocated with psychology, and chemical technology with chemistry. Collocation usually refers to coordinate classes. But, it may also refer to subordinate classes. Bliss subordinated sociology to anthropology and anthropology to biology.

**Alternative sites:** A scheme of classification should meet the dissimilar requires and necessities of a special collection. So, libraries may wish to—alter the order recognized through logical sequence. A scheme, if it is to be of maximum usefulness, should so give for the version of logical sequence to practical convenience in order to meet dissimilar views. Bliss did not consider in the rigid and inadaptable view of the order of knowledge. To meet this principle of practical convenience, provision has been made deliberately for alternative sites and treatments in his unique scheme, though it is somewhat contrary to the principle of consensus. Provision has been made in notation for moving sure topics to other sites. For instance, moving theology from the main class P religion to class AJ following philosophy; technologies like aeronautics or ship structure from applied physics to useful arts and subordinating international law to political science or to law; and economic history to common history. This principle gives flexibility needed to solve sure troubles in classification faced through all classifiers of all organizations. But it also proves that there is no absolute consensus on the order of subjects.

**Notation:** Bliss recognized three significant qualities of a good notation. These are:

- It should be correlative and subsidiary.
- It should be easy and brief, i.e., a notation should remain reasonably easy. He even suggested an economic limit of three to four digits in a class number.
- It should exploit synthetic characteristics. This is to achieve economy in the printing and display of schedules resulting in the simplicity of building and convenience in exploit.
Bliss achieved this through the provision of common and special systematic schedules for construction of coextensive class numbers.

**S.R. Ranganathan (1892-1972)**

Right from 1924, S.R. Ranganathan had been developing his theory of library classification. In the first edition of Prolegomena to Library Classification (1937), he provided an integrated theory, mainly descriptive and comparative, of the practices in classification then in vogue. Ranganathan went ahead of those classificationists through extending the principles put forward through them. He also provided the main list of normative principles named through - him since Fundamental Laws, Postulates, Principles and Canons and evolved a special terminology, which is apparent from the first edition of Prolegomena. These rightly belong to level-2 in the evolution of the Common Theory of Library Classification. His theory is now synonymous with the Common Theory of Library Classification.

**Classification Research Cluster (London)**

After the Royal Society Scientific Fact Conference in 1948 and on the suggestion of the eminent scientist J.D. Bernel, the Classification Research Cluster (CRG) London was recognized in 1952. It is an unattached society of volunteers pursuing classification since an additional off the occupation job. They meet frequently in London. Up to 1996, they have held 308 meetings. Its founder members D.J. Foskett, Bernard Palmer (1910-1979), B.C. Vickery and A.J. Wells (1911-1994) were greatly convinced through Ranganathan’s job. They mostly came from special, industrial and academic libraries. Their deep and thorough revise led them to consider that none of the published schemes provided a satisfactory organization either in arrangement or depth of details. CRG carried Ranganathans way of facet analysis though it did not accept his views on the restriction of the number of categories to be five. They named their categories since Entities, Properties and Behaviors. Nevertheless, in Ranganathans Dynamic Theory, they establish a sound foundation to be built up. They published their manifesto in the periodical Library Association Record (1955) which emphasizes on the-require for a faceted classification since the foundation of all ways of fact retrieval. B.C. Vickery wrote a little volume on the ways of constructing a faceted classification. Members of CRG intended several faceted classification schemes for specialized subjects ranging from diamond technology to soil science; music to education. Experience gained in designing such schemes led them to consider that the right style should be to seek new principles for library classification. Though they never produced any new common classification organization, their contributions to the evolution of classification techniques were several and innovating. A prominent member, Miss Barbara Kyle had a limited success in doing absent with the necessity of main classes. Another member J.E.L. Farradane (1906-1989) incorporated the thought of relational analysis with operators into the construction
of a faceted classification scheme. Later, a cluster member urbanized the Theory of Integrative Stages, which arranged entities in an evolving aggregation of complexities. Their job received publicity and wide discussion in their International Conference on Classification Research held at Dorking, England in 1957. Another publication enshrining their job is Sayers Memorial Volume (1961) edited through D.J. Foskett and B.I. Palmer (London Library Association). At present, the CRG meetings are devoted to the discussion of the ensuing revised schedules of the Bibliographic Classification (BC2) their major applied job remnants in PRECIS formulated through Derek Austin, which had a classificatory style.

**Dynamic Theory of Library Classification**

The dynamic theory, according to R.S. Parkhi, is a theory of library classification capable of carving out a methodology for the design of a scheme for library classification. It is regarded since level-2 in the evolution of the Common Theory of Library Classification. Such a theory enables us to organize emerging new subjects and the already recognized subjects in their proper spaces in a scheme of classification without disturbing the already recognized sequence. Its style is futuristic.

The dynamic theory of library (classification, urbanized through Ranganathan flanked by 1948 and 1955, was presented for the first time in the second edition of has Prolegomena to Library Classification, published in 1957. A more advanced version of this theory emerged in 1967 in the form of the third edition of the Prolegomena.

This dynamic theory has provided a sound and stable methodology for designing a scheme of library classification. This has also helped the classificationists to stay pace with the developments in the universe of knowledge to design more stable schemes of classification.

The formulation of a dynamic theory of library classification was marked through the recognition and isolation of three planes of job the Thought Phine, the Verbal Plane and the Notational Plane.

Before this was done, lack of capability in the, Notational Plane inhibited free job in the Thought Plane. Nor was the Notational Plane cultivated. On the other hand, there was reluctance to cultivate it. There was even opposition to attention being paid to it.

The exploit of popular conditions with all their homonyms and synonyms in the Verbal Plane caused confusion in the Thought Plane. Therefore, the isolation of job in the three planes laid bare the paramountancy of the job in the Thought Plane and requires allowing it to develop unhindered on its own right.

Through 1963, the dynamic theory was refined further and few of the new additions incorporated the following:
• Identification of Property isolates since manifestations of Matter beside with Matter -
Material isolates with the result that few of the isolates forcibly incorporated in the earlier
years in the `Problem Schedule, but later named forcibly since Power Schedules, Were in
reality Matter-Property isolates.,
• Prescription that life indicator digit, (,) comma should be inserted before the first
Personality isolate number/,
• Capability of-an array in the Notational Plane was increased through divesting Roman
little letters of interiorizing excellence and through restoring to digit (0) `zero, its natural
ordinal value lying flanked by the digits. `z and
• Postulation of digits T to Z since Emptying Digits which facilitates interpolation at any
point P the. Array.
• `The theory in the Thought Plane formulated 18 principles of helpful sequence and -the
powerful Wall-Picture Principle for helpful sequence of facets and of isolates.

These findings of the deeper and more dynamic theory of classification consciously
urbanized have been incorporated in Colon Classification Version 3 (Edition 7).creation it a truly
Freely Faceted Analytico-Synthetic Scheme for Classification. Therefore, the vital laws, canons
and principles enunciated through Ranganathan have greatly contributed to the development of
the dynamic theory.

S.R. Ranganathan
S.R. Ranganathan was instrumental in revolutionizing the Theory of Classification. He
propounded sure fundamental thoughts and concepts, which are the foundation for the evolution
of the Theory of Classification. 141—uniformly advocated that library classification should
conform to the Laws of Library Science. He worked vigorously towards the mainly helpful and
filiatory sequence of classes in a scheme of classification based on the concept of Facet Analysis
and Fundamental Categories. He totally rejected the earlier schemes, based purely on
enumeration. His laws, canons and principles of library classification have been presented in his
Prolegomena to Library Classification. This is regarded since one of the seminal jobs on the
Theory of Library Classification.

Mapping of Universe of Knowledge, Ranganathan visualized the problem of transforming
the multi-dimensional universe of knowledge into a uni-dimensional one. This was the
fundamental and perennial problem faced through the classificationists in the design of schemes
of classification. To meet this problem squarely, Ranganathan formulated the Common Theory of
Classification, which was guided through Vital Laws, Laws of Library Science, Canons,
Principles and Postulates. With the help of these laws, canons and principles, the mapping of the universe of knowledge in a scheme of classification could be successfully represented.

Vital Laws

Ranganathan formulated six vital laws, viz.,

- Law of Interpretation
- Law of Impartiality
- Law of Symmetry
- Law of Parsimony
- Law of Regional Difference
- Law of Osmosis

These vital laws govern the thinking procedure in common. These may be invoked when two or more Laws of Library Science or Canons for Classification lead to conflicting or equally valid dissimilar decisions.

Laws of Library Science

Ranganathan’s Five Laws of Library Science are:

- Books are for exploit.
- Every reader his/her book.
- Every book its reader.
- Save the time of the reader.
- A library is a rising organism.

These were formulated in 1928 and were first published in the book The Five Laws of Library Science (1931). These laws have an impact on library functions and are invoked when two or more canons or principles of classification lead to conflicting or equally valid alternate decisions. These are useful in every branch of library and fact science.

Postulates for Facets

The mainly important contribution to the Theory of Classification is the enunciation, of postulates dealing with the concept of facet analysis and fundamental categories.
Fundamental Categories

A subject may manifest itself in anyone or all of the fundamental categories. He postulated that there are five and only five fundamental categories, namely Time, Legroom, Power, Matter and Personality, PMEST; for short.

Facet Sequence

The five fundamental categories form the following sequence when they are arranged according to their decreasing concreteness PMEST.

Rounds of Power

Ranganathan also postulated that the fundamental category Power may manifest itself in one and die similar subject more than once. These manifestations of power are described rounds of manifestations. Likewise, the fundamental categories Personality and Matter may manifest themselves in Round I, Round 2 and thus on.

Stages

He further postulated that the fundamental categories Personality and Matter may manifest themselves more than once in one and the similar round within a subject. The first manifestation of a fundamental category within a round is said to be its stage 1 facet in that round. Legroom and Time manifest themselves in the last round.

Principles of Facet Sequence: Ranganathan formulated four principles of Facet Sequence, viz.,

- Wall-Picture Principle
- Whole-Organ Principle
- Cow-Calf Principle
- Act and Action-Actor-Tool Principle

These principles guide us in deciding the sequence of facets, which may seem in a compound subject.

Principles of Helpful Sequence

To achieve a helpful sequence of entities in an array, Ranganathan formulated eight Principles of Helpful Sequence. These are

- Principle of Later-in-Time
Principle of Later-in-Development
Principle of Spatial Contiguity
Principles for Entities beside a Vertical Row:
  Principle of Bottom Upwards
  Principle of Top Downwards
Principles for Entities beside a Horizontal Row:
  Principle of Left to Right
  Principle of Right to Left
Principles of Entities beside a Circular Row:
  Principle of Clockwise Direction
  Principle of Counter-Clockwise Direction
Principles for Entities beside extensive a Radial Row:
  Principle of Centre to Margin
  Principle of Margin to Centre
  Principle of Absent-from-Location
Principles for Quantitative Measure
  Principle of Rising Quantity
  Principle of Decreasing Quantity
Principle of Rising Complexity
Principle of Canonical Sequence
Principle of Literary Warrant
Principle of Alphabetical Sequence

Canons of Classification

Ranganathan provided a totally new direction to the concept of classification originally formulated through Sayers. Ranganathan formulated 43 canons and grouped them into three planes of job.

  Canons for Thought Plane (15).
  Canons for Verbal Plane (4).
  Canons for Notational Plane (24).

These are in total conventionality with his Vital Laws and Laws of Library Science. These are normally invoked in the design of a scheme of library classification. Let us now talk about briefly these three clusters of canons.
The fifteen canons for Thought Plane are further grouped into

- Canons for Features—4
- Canons for Succession of Features—3
- Canons for Array—4
- Canons for Chain—2
- Canons for Filiatory Sequence—2

The four canons for features trade with the procedure of division of knowledge. The features selected for division should be easily differentiated, ascertainable, relevant and permanent. The three canons for succession of features in the procedure of division of knowledge trade with the application of more than one feature and the sequence in which these features are to be applied. The two canons for chain (subordinate classes) trade with the procedure of division of knowledge which should proceed from common to specific and it should be properly regulated. The two canons for filiatory sequence state that a scheme of library classification should clearly identify both coordinate and subordinate classes and they should be arranged in the middle of themselves according to their mutual affiliation.

**Canons for Verbal Plane (4)**

The four canons for Verbal Plane trade with the language and terminology characteristics in a scheme of classification. The terminology used in the scheme should clearly indicate the context in which a scrupulous word has been used and what characteristics it comprehends. The conditions used to denote concepts should be current and non-critical. The four canons are:

- Canon of Context
- Canon of Enumeration
- Canon of Currency
- Canon of Reticence

**Canons for Notational Plane (24)**

These have been further grouped into:

- Vital Canons — 12
- Mnemonics — 5
- Rising Universe — 4
- Book Classification — 3
Notation means an organization of ordinal symbols on behalf of classes in a scheme of library classification. The vital canons, which are twelve in number, trade with require for the removal of homonyms and synonyms in class numbers. The notation, according to these canons, should reflect hierarchy of classes. The foundation of the notation may be mixed or pure. Though, the vital canons talk about the relative capability of each of these two kinds. The notation may be faceted or non-faceted. The canons nevertheless trade with the relative advantages of both types. The class number should be co-long or non-co-long. The implications of these two diversities are also explained through these canons.

The five canons for meanness trade with the require for dissimilar kinds of mnemonic devices, namely

- Alphabetical,
- Scheduled,
- Systematic, and
- Seminal

The four canons for rising universe trade with the capability of a notational organization for admission of newly emerging classes into the fold of a scheme of classification.

Ranganathan described this capability of a notational organization through the conditions hospitality in array and hospitality in chain. The notational organization should be capable of admitting emerging new classes at the beginning, or at the end, or in the transitional of an array or a chain. This is also recognized since extrapolation and interpolation (in the transitional) in an array.

The three canons for book classification deal with the provision of a organization for construction of book numbers and collection numbers in a scheme of classification, and the sequence of these three units—class number, book number and collection number – creation up a Call Number.

*Role of Postulates, Canons and Principles*

The postulates place down the procedure of job in the thought plane. The canons place down the rhythm of classification. The principles trade with the details of the arrangement of the isolates in the schedules. The laws, postulates, canons and principles listed in the preceding paragraphs laid down a sound base for the Dynamic Theory of Library Classification. The application of the principles has amply been demonstrated in Colon Classification scheme. From the fourth edition, published in 1952, Colon Classification has been a freely faceted scheme of classification based on the laws, postulates, canons and principles. Prior to the fourth edition, Colon Classification was a rigidly faceted scheme.
The contribution of Ranganathan to the evolution of the Common Theory of Classification is fundamental, unique and unparalleled. His concepts of facet analysis and fundamental categories have received wide acceptance. Since a result, many special schemes of classification have been intended applying the concepts and principles formulated through Ranganathan in his Prolegomena to Library Classification (1967), and other books.

**SPECIES OF SCHEMES OF LIBRARY CLASSIFICATION**

**Species Library Classification**

The common row of development of schemes for classification of subjects has been from Enumerative towards Analytico-Synthetic, guided through Postulates and Principles.

*Enumerative Classification*

The literal meaning of Enumeration is to list or count. An enumerative scheme for classification consists essentially of a single schedule enumerating all subjects—of the past, the present and the anticipatable future. It means that the class numbers for dissimilar subjects are enumerated in the schedules. There are no distinct supplementary schedules of general isolates to construct a number. A good instance of this species of classification is the Library of Congress Classification (LC). There is no provision for synthesis of numbers. Exhibit 2.2, in LC:

**Exhibit 2.2. Library of Congress Classification (LC)**

<table>
<thead>
<tr>
<th>HA</th>
<th>Statistics</th>
<th>HB</th>
<th>Economic theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA1</td>
<td>Statistics periodicals</td>
<td>HB9</td>
<td>Periodicals</td>
</tr>
<tr>
<td>HA9</td>
<td>Statistics conferences</td>
<td>HB21</td>
<td>Conferences</td>
</tr>
</tbody>
</table>

Another member of this species is Rider’s International Classification (RIC) (1961). It is an extensive schedule and enumerates in relation to the 18000 subjects each represented through three digits namely, Roman Capital Alphabets. There is no possibility of number structure here.

Consequently, it is not possible to symbolize new subjects. Hence, one is forced to provide the similar class number for many subjects. This is liable to produce Chaos-in-Small in the middle of the books carrying that single number for on behalf of many subjects. So, the resilience of RIC is extremely limited.

*Approximately-Enumerative Classification*

An approximately-enumerative scheme for classification consists of a big schedule enumerating mainly of the subjects of the past, the present and the foreseeable future, and in addition, some schedules of general isolates. A majority of the documents gets ready-made class
numbers, while in few cases a preliminary synthesis is possible with the help of supplementary schedules; The instance of such a species of classification is Subject Classification (SC) (1906) through 7.D. Brown (1862-1914) of England.

It consists of a main schedule of subjects, mainly compound subjects denoted through alphabets further divided through numerals. Brown also appended a table of commonly used subdivisions, which he described Categorical Table. It lists shapes and other divisions used with any class in the schedules, therefore providing a limited notational synthesis. These are:

- .0 Usually
- .00 Catalogues, Lists
- .1 Bibliography
- .2 Encyclopedia
- .10 History

Main and supplementary schedules are fairly extensive though not since extensive since those of LC or RIC. The DDC is also an approximately-enumerative classification though, in addition to schedules, it gives two tables of average subdivisions, and a region table. A limited synthesis is also possible within the schedules through Divide like instructions. The class number is monolithic in spite of the provision for isolate facets. This is because the connecting digits for the isolate facets are of the similar species since the semantically rich digits in the class numbers. Though, little relief is given to the eye through the legroom left after every three digits in a class number. Further, there is ample proof that DDC Ed.17 has felt concerned in relation to the onslaught of newly emerging subjects finding their method into common libraries. It so adopted an oblique style to faceted classification.

Such schemes are not able to withstand the pressure of the turbulently rising universe of knowledge in all directions. Browns Subject Classification is now a dead organization; while the DDC has greatly enhanced its number structure capability through raising the auxiliary tables to seven as the 18th edition (1971). Ranganathan feels that it is an oblique style to faceted classification. But it cannot, go the whole hog. Such schemes are now outdated.

**Approximately-Faceted Classification**

Obviously in the row of development, the approximately-faceted classification lies flanked by the approximately-enumerative classification to fully faceted classification. Such a species has an extensive schedule of vital, compound and even intricate subjects of the past, the present, and the anticipatable future, and in addition, some schedules of general isolates and also few schedules of special isolates. There are few indicator digits/connecting symbols to attach the general and special isolates with the number from the main schedules, which are dissimilar from the semantically rich digits used in the -schedules. Examples are LTDC (1905-1994+) and the 1st
editions of Bibliographic Classification BC 1 (1940-1953). Mainly of the numbers are still accessible readymade, yet several more can be synthesized with the help of auxiliary tables. Readymade class numbers are polythnic and their building is bit more transparent. Schedules are comparatively little, though main schedules are still lengthy. There are several additional tables to supplement the schedules and therefore raising several times the capability to synthesize class numbers. Being polythnic the facets can be expanded internally. The exploit of many isolates facets and the prescription to combine two class numbers through: (colon) and other symbols whenever the result cannot be got with the aid of the schedules of isolates enable UDC to be sufficiently resilient to meet the pressure of the emergence of new subjects. Likewise, the resilience of Bibliographic Classification is comparable to that of UDC.

**Fully Faceted Classification**

A faceted classification consists of schedules of vital classes; special isolates and general isolates only. In addition, there are few devices for sharpening existing isolates and/or constructing new isolates. Schedules are brief. No compound or intricate subjects are enumerated. Class numbers for such subjects are not accessible readymade. They have to be synthesized every time according to specified rules (grammar) of the schemes concerned. Therefore, the class numbers of such subjects synthesized are polythnic and their building with facets is transparent. In the development of classification organizations, the faceted organizations are quite recent and are bigger equipped to meet the onslaught of knowledge revolution. These are of two kinds:

- Rigidly-Faceted Classification
- Freely Faceted Classification

**Rigidly-Faceted Classification**

It is the first level in the evolution of faceted classifications. In a rigidly-faceted classification, the facets and their citation order are fixed and their facet formula is predetermined. No -facet can be omitted. The first three editions of the Colon Classification (CC) are measured rigidly-faceted since they have provided a facet formula for each vital class. In the class number, there is cluttering of facets, and it was a bit hard to recognize the category to which a given facet belonged. The problem arose; since there was only one connecting digit colon If an intermediate facet was away, there was a necessity to insert the connecting digit even for away facets For instance:

- D66: 121::4 Design of Electrical Generator

In this subject the Section Facet is alone away. It occurs in the transitional of the facet formula So; the connecting digit colon needed for it has been inserted immediately after the
secondary Job Number and presently before colon preceding the Engineering Problem Number. Therefore, two consecutive colons seem in this class number. This creates the class number seem a bit awkward and inelegant. It means the exploit of facets was predetermined. It also creates the addition of new facets a bit cumbersome.

*Freely Faceted Classification*

This is the last level in the development of library classification. A freely faceted classification is based on postulates and principles and there is no rigid, pre-determined facet formula for the compound subjects going with a Vital Subject. As such a scheme is based on analysis and synthesis, thus each subject determines its own facet formula. The facet formula is open. As the job involves analysis and synthesis of facets and the sequence of facets are guided through postulates and principles, another name for this type of classification is Analytico-Synthetic Classification. Edition 4 (1952) to Edition 6 (460 of the Colon Classification are examples of a freely faceted classification. Another instance of such a species is Bibliographic Classification Edition 2 (BC-2) (1977—) revised through J. Mills. Resilience of such a species is virtually infinite. The class numbers are co-long, brief and elegant. Though, few view these since approximately-freely faceted classification schemes wherein exploit of dissimilar indicator digits for diverse type of facets and the concept of Rounds and Stages removed, the severe rigidity in the number and sequence of facets that can happen in a compound subject. Nevertheless, little rigidity connected in respect of stages of facet within a round exists.

But, with the help of Sector Notation, the rigidity in the number of stages of facets and their sequence in a round lurking up to CC Ed. 6 have been removed in CC Ed. 7, since it recognizes that faces belong to compound subjects and not to a vital subject. Hence, predetermination of the facets for all compound subjects likely to go with any vital subject is ruled out. It has, so, been called since fully Freely Faceted Scheme of Classification. Ranganathan’s Colon Classification, therefore, is an excellent instance of a Freely Faceted Analytico-Synthetic Classification guided through postulates and principles.

*Evolutionary Trends*

The Common Theory of Library Classification and consequently, the development of classification organizations have always remained in a state of flux. The transforms had been both rapid and progressive. The trend has been the movement from enumerative to fully freely faceted schemes of classification with intervening intermediary levels of approximately-faceted, rigidly-faceted and approximately-freely faceted schemes of classification.

Mainly of the theorists, though, usually divide them into two vital species, i.e., enumerative and faceted. A relative revise of the distinctive characteristics, their advantages and disadvantages is often made.
Few Major Classification Organizations

There has been a rapid growth of common and special classification organizations especially as 1876. A common classification organization is intended for the whole domain of knowledge. Examples are the Dewey Decimal Classification, C.A. Cutters Expansive Classification, Ranganathans Colon Classification.

On the other hand, a special classification organization is an extremely detailed, minutely divided classification, urbanized for a smaller region of knowledge, says for Social Science, or Economics, or even for Banking. There are numerous such special classification organizations since suggested, revise some classification organizations in brief. Few of these classification organizations will be called and discussed in Block 4 of this Course (BLIS=03).

Dewey Decimal Classification (DDC)

DDC was conceptualized through Melvil Dewey and was first published in 1876. It is now in its 21st edition. Its author Melvil Dewey (1851-1931) is veritably acknowledged since the father of contemporary librarianship. It is the first discipline-oriented classification -and uses decimal numbers to divide the whole knowledge into ten main classes. Divisions of main classes are hierarchical and minute. In Edition 21, there are seven auxiliary tables to supplement the main schedules 001/999 in volume 2. Its bibliographical details are:


For little libraries, abridged edition of DDC is brought out. The present abridged edition in one volume is the 13th edition (1997). Mainly of the class numbers are enumerated, and several more numbers can now be extended through add-to instructions and seven auxiliary tables.

It is the mainly popular classification scheme being used in relation to the 2, 00,000 libraries in 135 countries and has been translated in 35 words. It is also used in Cataloguing-in-Publication (CIP) data and MARC records. The impact of fact technology on DDC can be seen in that on 29 July 1988, a computer tape containing considerably all of the text of DDC was delivered to a firm in Massachusetts to begin manufacture of the twentieth edition. Therefore, since DDC enters the online age, the Editorial Policy Committee will continue to monitor future developments of the classification, and recommend policies that will help it to become more adoptable and amenable to online fact storage and retrieval. It is already accessible in CD-ROM (Dewey for Windows, 1996).
Universal Decimal Classification (UDC)

The UDC was urbanized in 1895 through Paul Otlet and Henri Fontaine taking the DDC since its foundation. Their efforts resulted in the publication of a scheme described Manuel du Repertoire Universal Bibliographic, an approximately-faceted scheme which involved adopting the approximately-enumerative classification into one which allows synthesis. It is a bibliographic classification accessible in three versions:

- Full edition: 2,2 1,000 conditions
- Medium edition: 70,000 (30% of the full edition)
- Abridged edition: 20,000 (10% of the full edition)

English edition is published through the British Standards Institution since BS: 1000. Now, the UDC is owned through a consortium. It is constantly revised and revisions are announced in its annual bulletin: Extensions and Corrections to UDC. At present, the UDC is being restructured to a fully faceted organization.

Colon Classification (CC)

Intended through S.R. Ranganathan and published first in 1933 through the Madras Library Association, the Colon Classification brought a revolution in classification theory and practice. It is a freely faceted classification conforming to the Common Theory of Classification and guided through postulates and principles. The major building of the scheme is in its vital subject schedules and the schedule of isolates belonging to the five fundamental categories:

- Personality,
- Matter,
- Power,
- Legroom and
- Time.

Thought, Verbal and Notational Plane, job of classification has become objective. It is still a best and sound instance of an analytico—synthetic classification.

The Colon Classification is now in its seventh edition (1987). The scheme though a trend setter is not a highly used classification. It is used in few special and academic libraries in India. Its intricate mixed notation is a barrier in its exploit and popularity. But its ways and theory have had an impact on other schemes, such since, DDC, and BC-2, UDC in their revision, and in the designing of new organizations such since Broad Organization of Ordering (BSO). CRG members have used its ways to design several special classification organizations.
Library of Congress Classification (LC)

The LC is a purely enumerative classification. It consists of 21 classes in 29 sections and 45 volumes and is the bulkiest of all the classification organizations. It is based upon literary warrant. Main classes are denoted through alphabets:

- **A**: Generalia
- **B**: Philosophy and Religion
- **C/F**: History
- **G**: Geography
- **H**: Social Sciences
- **J**: Political Science
- **K**: Law
- **L**: Education
- **M**: Music
- **N**: Fine arts
- **P**: Words and Literature
- **Q**: Science
- **R**: Medicine
- **S**: Agriculture
- **T**: Technology
- **U**: Military Science
- **V**: Naval Science
- **Z**: Library Science

The alphabets 1, 0, W, X, Y are still vacant. Further divisions are again denoted through alphabets:

- **Q**: Science
- **QA**: Mathematics
- **QB**: Astronomy
- **QC**: Physics
- **QD**: Chemistry

Further subdivisions are through numerals:

- **QD**:
  - 71-142: Analytical Chemistry
  - 156-197: Inorganic Chemistry
It creates frequent exploit of alphabetical mnemonics for further subdivisions:

- QD171 : Metals
- QD172 : Through cluster A/2
- QD172 : M4 Magnesium Cluster
- QD172 : P8 Platinum Cluster
- QD 182.R2 : Unusual Earth Metals

The alphabets and numerals M4, P8 and R2 have approach from the simplified Cutter Table for author spots. Sometimes the year of publication is also incorporated in the class numbers:

- The economic method of thinking through Paul T Helyne HB 171.5.H46 1990
- Class numbers, which are call numbers, are lengthy.

**Troubles**

It is a bulky scheme and appropriate for shelf arrangement only. It is a spot and park organization. Being enumerative, it is hard to accommodate new subjects at proper spaces. Only device used through the scheme is the gap device for hospitality.

**Exploit**

It is one of the large three classification organizations—the other two being the DDC and UDC and is being used in the main library of the World—the Library of Congress (USA) which has 10 crore documents. 60% of the research libraries and 50% of the college libraries are by this organization in 1JSAA. It is also used in few large libraries in Africa, Asia and Europe. LC class numbers are accessible on CIP data, MARC record, and are used through other centralized agencies. It is also being used in online catalogues. Due to its strong institutional backing it has an assured future.

**Depth Schedules**

A depth schedule is also described o Special Classification Organization. Depth or special classification schedules are detailed organizations to classify micro literature, such since, periodical articles, dissertations, statement, patents and standards pertaining to a narrow subject field. These can also be for non-print media such since maps, electronic documents, microforms, photographs, etc., any depth schedule are accessible on subject like music, public management,
forestry, occupational safety, pen technology, forestry, horticulture, civil engineering and architecture.

There is controversy whether we really require special schedules. S.R Ranganathan was of the opinion the common classifications be detailed sufficient to serve both since common classification and special classification organization. He used to say that his CC is like the trunk of an elephant, which can pick up a twig or the whole tree with equal. Few common organizations such since the UDC and LC published fascicules for dissimilar classes. Though it was meant for common libraries, these are detailed sufficient to be measured since special schedules. Anyhow, there exist numerous recognized and strange specialized classification organizations. The major ones are prepared through the Classification (CRG), London and the Documentation Research and Training Centre (DTRC), Bangalore. At DRTC, Bangalore the special schedules have been intended to go with the common CC schedules, i.e., these are extensions of the common schedules.

LEARNING ABOUT SUBJECTS

Universe of Subjects

Library service is, in essence, the retrieval and dissemination of embodied knowledge to individual members and clusters in a society. Hence, the two essential parameters which affect the value of library services are:

- Universe of Readers; and
- Universe of Subjects.

In order to achieve efficiency of services to readers, it has become imperative to adopt and develop such apparatus and techniques which would facilitate the classification of subjects embodied in documents and therefore help in retrieval and service to the satisfaction of the laws of library science. But, for this to occur, it is essential that the discipline of library science necessity stay developing itself to meet transforms in the value of each of the parameters.

*Laws of Library Science vis-à-vis Universe of Subjects*

The revise of the building and evolution of the through the fact professional can be shown to be a necessary implication of the five laws of library science.
The first law is Books are for exploit. Here, the word book is a generic word to denote all types of documents, including books themselves, periodicals, technological statements, patents, specifications, non-conventional and meta-documents. The document, in its turn, is a trinity of

- Soul—embodied knowledge;
- Subtle body—language and expression of the knowledge; and
- Gross body—physical body of the document.

The word exploit, on the other hand, implies essentially the exploit of organized, expressed and embodied knowledge—that is, the subject dealt with in documents—through the readers, although the subtle body is indispensable for the acquisition of knowledge and since a vehicle for its discourse, and the physical body is a convenient means of transport of the embodied knowledge crossways legroom and through time. A document retrieval organization is, so, essentially concerned with the classification, search, retrieval, and service of the subject.

A subject, in its turn, is an organized or systematized body of thoughts, whose extension and intension are likely to fall coherently within the field of interest and comfortably within the intellectual competence of and the field of inevitable specialization of a normal person.

**Implication**

To satisfy law 1, the arrangement of documents and the main entries should primarily be based on the features of the subjects embodied in the documents. The revise of these features is so, essential for the efficient classification, search, and retrieval of subjects and service to readers.

Further, the criterion for exploit assumes significance. So, it may be helpful to look at the differences, if any in the respective purposes of the reader. Sure affinities and dissimilarities in the middle of the subjects will then be recognized.

**Law 2 and its Implication**

The second law Every reader his book implies that the classification and arrangement of documents and/or the main entries for them should bring jointly at every point of style presently those documents relevant to the interest of the reader at the moment, and also arrange them on either face in the decreasing degree of affinity. In other languages, an APUPA (Alien, Penumbral, Umbral, Penumbral, and Alien) pattern everywhere of documents and/or main entries is desirable.
Law 3 and its Implication

The third law Every book its reader implies that at the time of retrieval no document relevant to the interest of the reader at the moment should be missed, irrespective of his style. Again, a revise of the building and evolution of designates that no single tool of library science can fully satisfy this law. Many of its apparatus and ways have to be used concurrently or in succession according to require to meet the interest of the majority since well since the minority.

Law 4 and its Implication

The fourth law save the time of the reader and of the staff implies that:
- The intellectual and mental potential of the reader should be conserved through pinpointed and expeditious retrieval; and
- The retrieval and service should be done in the mainly economic manner.

To Satisfy Law 4 One Needs
- An analysis of the each of its constituents and their relevant features; and
- Formulation of a methodology for the design and evolution of a document retrieval organization which can implement the findings.
- The job done and to be done in this context pertains to the constituents.

Lawn 5 and its Implication

The fifth law Library is a rising organism implies that ever rising and, so, library science is ever rising. Hence, a historical revise of the pattern of evolution and the building at dissimilar levels of growth will help to recognize the manners of formation of subjects and thereby it would be possible to develop and refine techniques apparatus for efficient fact retrieval and dissemination.

From the foregoing explanation, it becomes clear that the revise of the building and evolution of the librarian is a necessary implication of the five laws of library science.

Manners of Formation of Subjects

The classifications has to ascertain the several attributes—infinitive, turbulently dynamic, continuum, manifold multidimensional excellence, dissimilar manners of formation of subjects, etc. The manners of formation of subjects that have been recognized are:
- Lamination
- Loose Assemblage
- Fission
- Fusion
Methodology for the Revise of Subjects

Until recently, fact consolidation products (ICP) were prepared through subject specialists themselves on the foundation of the documents furnished through libraries and fact centers. But with advances made in the field of library and fact science, especially in the techniques of organizing and displaying fact, the library and fact science (LIS) personnel have started playing a dominant role in the preparation of ICPs. But, for them to play a useful role, the following prerequisites become necessary:

- Familiarity with the dissimilar characteristics of the subject;
- Familiarity with readers necessities on the subject of his pursuit; and
- Knowledge of the helpful ways of presentation of thoughts in an ICP.

Understanding the Highways and Byways of Subjects

The majority of the queries/questions that LIS personnel will have to trade with are in relation to the subjects. An answer to such a query, in whatever form it may finally be presented to suit the necessities of the reader, will be derived from the subjects embodied in documents. So, the LIS personnel should become well-known with the subjects they have to trade with predominantly. The more rigorous the knowledge they have of the subjects, the more helpful it will be in creation the fact services productive.

Obviously, such knowledge of all the subjects cannot be acquired through one person. A person with a vital backdrop in a subject—say, at the graduate or post-graduate stage—can build upon it through experience,—such since doing research and/or teaching the subject, But the LIS personnel’s job does not admit of doing research simultaneously (other than in library and fact science). Further, it is not the rigorous specialization in a narrow area of a subject that will be useful in the job of the LIS personnel. What they need is a broad perspective that is, the highways and byways of the dissimilar subjects with which their clientele are concerned.

Specific Implication

In common, the type of knowledge that the LIS personnel should gain in relation to the subjects may be specified since follows:

- Scope of the subject since a whole;
Its main branches and subdivisions within each branch and the scope of each of them;

The thoughts usually falling in relation to the subject and their grouping in relation to the branches and subdivisions within each branch of the subject;

The interrelation flanked by the component thoughts and the relevant features on the foundation of which they can be grouped;

The landmarks in the development of the subject: the significant contributors and their respective contributions;

The state-of-the art and trend in each of the dissimilar branches of the subject;

The interrelation of a subject with other subjects; and

The technological terminology of each of the dissimilar subjects.

Systematic Revise of Subjects through Documents

Reading in Relation to the Major Subject Meadows

LIS personnel should recognize the major subject meadows related to the job of the institution concerned. Further, it would be helpful to cluster the subjects since of umbral and penumbral interest. This implies that the person should develop the skill to read through the documents in such a method that the thoughts relevant to his purpose are picked up without his plodding through each and every sentence in the document.

Types of Documents for Revise

The following diversities of documents may be helpful in the systematic revise of a subject to acquire the type of knowledge mentioned under the heading Specific Implication.

- Average common dictionaries and technological glossaries for definitions and synonyms of conditions,
- Articles in common encyclopedia for receiving an overview of the scope and major divisions of the subject.
- Specialized encyclopedias, if any, mainly devoted to the subject for receiving a deeper knowledge of the subject than that from the common encyclopedias.
- An orientation book, specially written with flair and/or with a bias to the necessities of the LIS personnel.
- Books on the history of the subjects for sensing the landmarks in the development of the subject.
- Treatises for receiving a deeper knowledge of the thoughts falling in the dissimilar divisions of the subject, their interrelations, and also to get a proper perspective of the subject since a whole.
Good review articles and trend statements for sensing the current developments and trends in the subject.

REVIEW QUESTIONS

- Write in brief the difference between the descriptive and the dynamic theories of library classifications.
- Write a note on Bliss's idea of scientific and educational consensus.
- Compare the features of enumerative and faceted classification system.
- Enumerate the characteristics of a freely faceted classification. Why it is also called analytico-synthetic classification?
- What are the different modes of formation of subjects? Give examples.
- What are the difference method that can be adopted for understanding the highways and byways of subjects?
CHAPTER 3
Approaches to Library Classification

STRUCTURE
- Learning Objectives
- POSTULATIONAL AND Systems Approaches
- Fundamental Categories, Facet Analysis and Facet Sequence
- Phase Relation and Common Isolates
- Devices in Library Classification
- Review Questions

LEARNING OBJECTIVES
After reading this chapter, you will be able to:
- Get a clear grasp of the meaning, need and advantage of the postulational approach;
- Obtain an insight into the application of the postulational approach to library classification;
- Get a clear understanding of the postulate of fundamental categories;
- Understand the concepts and techniques of facet analysis and facet sequence and their application to the classification of documents in a library;
- Identify different types and kinds of phase relation in subjects; and
- Get a clear idea of devices and their need in library classification.

POSTULATIONAL AND SYSTEMS APPROACHES

Subject Representation

Subject representation is the principal foundation on which fact organizations retrieve fact. The subject or idea content of the document can be represented since subject heading index word, class numbers, data buildings and other types of surrogates. This is to give access to fact in the fact organization.

This representation of subjects is done through the procedure of analysis of the subject of document into its constituent units and assembling them in a preferred sequence or order. This procedure is equivalent to transforming the n-dimensional configuration of the subject into a linear configuration. In other languages, it is the procedure through which the dynamic, e multidimensional and multifaceted knowledge since embodied in a document is s/ represented in a linear sequence. Obviously, this would involve the arrangement of that units of each subject belonging to a subject field and all subjects belonging subject meadows in the middle of
themselves in a sequence helpful to the majority of users, keeping unvarying every immediate neighborhood relation, in the middle of all the subject while transforming or mapping the n-dimensional configuration of subjects into a row. He representation is primarily concerned with analyzing, identifying and on behalf of relation flanked by the components of the subject of a document.

While Ranganathans style to the structuring of subjects is based on what the postulational style/way, there was another style based on the organization.

**Postulational Style**

In arranging books on the shelves of a library, convenience needs that they should be arranged aloft a linear sequence. Since books trade with subjects, it follows that the physical limitation enforcing a linear arrangement of books enforces also a linear arrangement of subject but this creates troubles as subjects belong to a dynamic, ever-rising, multi-dimensional universe. In effect, it would mean that classification of subjects for arrangement in library amounts to mapping or transforming the organization of points marked out in multidimensional legroom into an organization of points beside a row. That is, the multidimensional legroom should be mapped beside one-dimensional legroom, a row for instance.

Therefore, in library classification, the problem is to choose what should be kept unvarying in the classification of subjects. The question then is since to which of the subjects can have its immediate neighborhood relation kept unvarying in the mapping, as an indefinitely big immediate neighborhood dealings is possible. Therefore, mapping is a very matter.

Dissimilar schemes have provided dissimilar solutions to this problem. The problem of mapping has been solved through Ranganathan through means of sure guidelines. This, he described since postulational style style to library classification, in which a set of postulates (guidelines) can be for offering an operational methodology in a given field. While this kind of postulational style was adopted in mathematical studies and other subjects like philosophy, Ranganathan used the postulations style extremely effectively in library and bibliographical classification. According to him A postulate is a report in relation to which we cannot exploit either of the epithets right or `wrong. We can only speak of a set of postulates since `helpful or `unhelpful Therefore, postulates are sure assumptions, which are helpful in carrying out the procedure of classification of documents.

The postulational style in library classification brings objectivity to the revise and practice of this discipline. It puts the revise and practice of library classification on a scientific foundation. Since a result of this style, the discipline of classification has become both simple and motivating. In information, Ranganathan calls practical classification based on postulates
since classification without tears. On the other hand, classifications who designs and develops schemes of classification should foundation his job on such a style to avoid pitfalls. This style also helps a classifier to avoid the hit-or-miss style to classification. Since a matter of information, the postulates of this style are helpful and useful for a comparison of the efficiency and effectiveness of dissimilar schemes of classification.

**Advantages**

Specifically speaking, the application of postulates in content analysis is extremely useful for arriving at a helpful order of the resulting thoughts. Few of the advantages in adopting the postulational style are:

- Application of postulates results in a constant sequence of thoughts which conform to a single recognizable pattern,
- Postulates give a matrix for the analysis of contents of documents and to a sure degree help mechanize the process,
- The framework resulting out of this matrix (arrangement of thoughts in lines and columns) gives flexibility to accommodate new concepts without disturbing the existing building of subject, i.e., it facilitates interpolation and extrapolation of thoughts/concepts appropriately, and
- Practical classification becomes methodical, bringing in a greater amount of consistency in classificatory process, although dissimilar persons may be involved in the job.

**Application of Postulational Style**

Another precious characteristic of the postulational style is that it helps to clear fallacies likely to happen. In this way, one is not bound through any preconceived metaphysical or other thoughts and not even through factual experiences. Sure postulates are assumed and all the implications are worked out. Through varying the postulates, one can get dissimilar models. In other languages, this style sets up many models with many organizations of postulates since the foundation, quite unmindful of the models subsistence or otherwise within the realm of experience or facts. Then, one can choose the scrupulous model whose postulates are helpful in that universe. So, Ran and concludes through saying that classification too will gain in this efficiency if the postulational way is adopted.

While charting the universe of knowledge, dissimilar schemes have followed dissimilar ways and styles. Ranganathan, on the foundation of sure assumptions, i.e., postulates, has preceded step through step to chart the universe of subjects methodically and scientifically. The following chart 3.1 illustrates the procedure of division of the universe of subjects.
The procedure of mapping of the universe of subjects up to Step 2 is same in all schemes of library classification. From Step 3, the procedure of division differs from scheme to scheme. It is at Step 3 of the procedure of division that Ranganathans postulational style comes in full play. For instance, in determining the several facets occurring in a Compound Subject, he enumerates five postulates—first facet, concreteness, facet sequence within a round, facet sequence within the last round, stages, and stage cluster, etc. He then goes on to enumerate the several canons, principles which could be made exploit of in Step 4 for arrangement of isolates in a helpful sequence. This led to the exposition of the analytico-synthetic style to classification. The postulational style has, therefore, added a new dimension to the Theory of Classification through providing clarity of idea and action for pursuing the theory and practice of library classification.

A lucid and exhaustive presentation of the postulates enunciated through Ranganathan can be establish in his magnum opus Prolegomena to Library Classification (Ed.3; 1967) which is regarded the world in excess of since one of the seminal contributions to the Common Theory of Library Classification.

**Demonstration in Practical Classification**

The Common theory of classification guided through the postulates and principles enables the classifier to do practical classification easily without any difficulty. Essentially, practical classification involves the identification of the specific subject embodied in the document and translating it into the class number. In other languages, the procedure of translation takes it from natural language into a classificatory language – that is, a language of ordinal numbers. Ranganathan felt that it is convenient to carry out the translation in eight successive steps and to verify the result in the final step through reverse translation. These steps are:

- **Step 0; RAW TITLE:** The more or less expressive title of a-document either establishes on the title page or provided through the classifier in the case of a fanciful title.
- **Step 1: EXPRESSIVE TITLE:** An expressive title which is also described full title is. one expressing all the facets/characteristics of a subject sheltered in the document.
Step 2: **KERNEL TITLE:** The title resulting from the expressive title through removing all the tools languages and changing each kernel word to its nominative singular form.

Step 3: **EXAMINED TITLE:** The title in kernel conditions with the respective symbols denoting the nature of its manifestation, i.e., each kernel word with the indication of the fundamental category to which it belongs.

Step 4: **TRANSFORMED TITLE:** The title resulting from the examined title through rearranging the kernel conditions on the foundation of the postulates and principles governing their sequence.

Step 5: **TITLE AVERAGE CONDITIONS:** The title derived from the transformed title through replacing each average kernel word with its average word or equivalent average word since given in the Scheme for Classification.

Step 6: **TITLE IN FOCAL NUMBERS:** The title derived from the title in average conditions through replacing each average (kernel) word with the vital class number or isolate number, since the case may be, since given in the schedules of the preferred scheme for classification.

Step 7: **CLASS NUMBER:** The ordinal number derived from the title in focal number through replacing the symbol after each focal number through connecting the digit suitable to the succeeding regional number since prescribed in the rules of the preferred scheme for classification.

Step 8: **VERIFICATION:** The name of the subject arrived from the title at through translating the class number and checking for its equivalence with the raw/ expressive title.

**Organizations Style**

While Ranganathans style to the structuring of subjects is based on the postulational style, Foskett and Heinalata Iyer individually have examined organizations style to subject structuring. Iyer argues that Ranganathans absolute syntax which gives a building is based on the categorization of concepts and that there are three methods of establishing relationships in the middle of them—reason-effect; probabilistic; and the third and mainly recent being organizations style which is concerned with the interaction of the organization with the habitation. This way of understanding is an analytico-synthetic one. It seems at the overall purpose governing the design and functions of an organization in order to explain its behavior. The organizations style is hierarchic in nature and moves from the scrupulous to the common and also vice versa. Although synthesis cannot be separated from analysis and causality, it is dissimilar in its style. The purpose and its fulfillment are its primary concern. Obviously, then priorities in the fulfillment of its purpose becomes essential, Therefore, the representation of a organization according to its
purposes, its environmental constraints, its actors, their objectives, the functions of the organization, and the sections that perform these functions take on a hierarchic form.

A same row of thinking can be seen in Fosketts thoughts derived form Bertalanffys Common Organization Theory. The thought of an organization is any entity whose features are recognized since the nature of its sections and the dealings flanked by them can be seen in the contribution of Bertalanffy, Kenneth Moulding and Ervin Laszlo. For instance, a bicycle is more than a heap of bits of metal, rubber, plastic and thus on; the relationships set up flanked by these sections changes the heap into the feature appearance of a bicycle and enables it to perform the feature function of bicycle through converting the rotary motion of the pedals into the horizontal motion of the bicycle and the passenger beside the road. A committee is more than a collection of single individuals.

Further, an organization may also be a constituent section of another organization of a higher order of organization. Therefore, a word is an organization of letters organized in a sure method. A sentence is an organization of languages organized in a scrupulous sequence, and a paragraph is an organization of sentences. A book is an organization of paragraphs and a library is an organization of books. Therefore, we have in the real world, which gives the subjects for documentation, an organization of organizations in an order of rising complexity of sections and dealings. Applying this concept to schemes of classification will produce on ordered organization which strongly resembles the scheme produced in outline through Dhalberg. Foskett, based on his research, believes that there is plenty of proof to illustrate that we cover the whole knowledge through relating subject analysis, or classification, to a common theory of organizations.

**Organizations Style to Fundamental Categories**

In a common classification for documentation any organization can be named since a vital subject, in DRTC conditions, because organizations also can be examined through facet analysis. The organization itself, measured since a whole, becomes the Personality. Its constituent sections and the dealings flanked by them become the **Matter and Power**, which Foskett calls **Power A**. The dealings of the organization with its habitation are all procedures, which he calls **Power B**. The other organizations in the habitation, which react with the original organization, are mediators or, in Ranganathans own conditions, **Second Round Personality** of course, one require not accept Ranganathans conditions. But, this has been done in order to show how appropriately the organizations theory fits the scheme of the greatest contributor to classification as Bliss and Dewey.

Likewise, Iyer believes that any organization can be looked at in conditions of sections and units. She defines Personality in conditions of its unique regular and specified responses to its habitation, and these responses involve the properties of an individual. The properties transform or are made to transform due to external action in conditions of legroom and time;
hence, the thought of property, action, legroom and time. The specific connotations of these embedded categories may he delineated further.

**Practical Implications of Organizations Style**

The question then is:

- What are the practical implications of the organizations style to documentary classification?

The main purpose of any scheme of classification is to organize documents in a method that creates sense to specialists in each field. This requires not necessarily be a useful order, as one and the similar specialist may style the literature differently each time. Though, the order arrived at necessity create sense, i.e., the specialist necessity be able to recognize the foundation of the order. In other languages, while specialists seem at knowledge from the point of view of their own subject, librarians and fact professionals seem at classification from the perspectives of the whole universe of knowledge. Therefore the scheme for documentary classification, necessity is more than merely a collection of specialized schemes: this would not be an organization in itself, it would be no more than a heap of unrelated sections.

The organizations theory, internal dealings flanked by the sections are essential if these sections are to have the organization of an entity capable of subsistence since an integral whole in a scrupulous habitation. In our context the habitation is the library, its documents and services. The aim of the librarian in classifying is to reflect and demonstrate the order and harmony existing in the real world, the universe of nature, including the world of man.

**FUNDAMENTAL CATEGORIES, FACET ANALYSIS AND FACET SEQUENCE**

**Fundamental Categories**

In mapping the universe of subjects, dissimilar organizations of classification have adopted dissimilar ways and styles. Ranganathan adopted a systematic process based on sure assumptions which we have described Postulates. The procedure of division that Ranganathan followed recognizes that every subject has a vital facet, i.e., the first context-specifying facet and represented through the concept/word described vital subject (BS), to which one or more isolate thoughts may be attached. He postulated these fundamental thoughts through the word “Fundamental Categories. Through going to a dictionary and finding out the meaning of each of the two component conditions “Fundamental and “Category and then combining the meanings, one cannot understand what the Fundamental Categories (FC) are. The word-cluster forming the word FC is an unbreakable one and can be defined through enumeration only.
Postulate of Fundamental Categories

This postulate There are five and only five fundamental categories—viz., Time, Legroom, Power, Matter and Personality. Explaining these, Ranganathan emphasizes that these conditions and the thoughts denoted through them belong strictly to the context of the discipline concerned. Their significance, in our context, can be seen only in the context of the discipline concerned. This set of FC is, for brevity, denoted through the PMEST.

After identifying vital subjects, the analysis of isolate thoughts going with vital classes has also to be done in a systematic and logical method to produce the desired result. An examination of subjects will reveal that every subject has its dissimilar characteristics and jointly all these present a coherent explanation of the subject.

Exhibit 3.1, Six conditions in the subject of chemistry.

| 1. alcohol | 1. Substance |
| 2. liquid | 2. State |
| 4. combustion | 4. Reaction |
| 5. analysis | 5. Operation |
| 6. burette | 6. Device for |

It can be seen that each of the isolate conditions in the left column belongs to a corresponding category in the right column. Here, object means all substances and state means all states. It so follows that each of the conditions is a category of thoughts and can be regarded since a facet of the subject chemistry. Indeed we can discern this kind of organization of thoughts in any subject. Table 1 shows this. This table lists few vital subjects and the kind of facets that go with each of them respectively.

While designing Colon Classification, Ranganathan discerned that although dissimilar subjects have facets special to them, there is an underlying unity of thoughts when these facets are examined in depth. In each one of the subjects, there is a core set of thoughts that are central to every aspect of the revise of that subject. This underlying of thoughts led Ranganathan to postulate the Fundamental Categories.

Table 3.1: Matrix of Vital Subjects and Their Corresponding Facets
**Five Fundamental Categories**

These are:

- Personality [P]
- Matter [M]
- Power [E]
- Legroom [S]
- Time [T]

Let us loop at Table I-again in the light of the five Fundamental Categories. Each of the facets, going with the vital subjects, can be regarded since a manifestation of one or the other of the five Fundamental Categories. Figure 1 graphically symbolizes this thought. PME are the categories that operate in legroom-time configurations.

![Figure 1. Generalized facet building for subjects according to Ranganathans postulate of vital subject and fundamental categories](image-url)
For instance let us believe a wooden table in relation to the vital subject **furniture**
production. Here table with its separate form, volume, utility, etc., is the core thought and is
central-to every other thought that goes with it. Hence, it is to be regarded since a member of the
facet furniture, which in turn can be regarded since P. The wood that has gone into the creation of
the table can be regarded since the manifestation of M. The processes and behaviors that ace
necessary to get the finished product could be regarded since the manifestation of E. That the
table is in the premises of IGNOU in Delhi symbolizes the concept legroom and so facet S and. it
is, there in 1997 which symbolizes the facet T. Although this, instance is an in excess of-
simplification of the way of analysis, it explains the vital thoughts of Fundamental Categories
fairly clearly. Let us now attempt to get a formal explanation of Fundamental Categories (FCS).

**Time**

The FC **Time** provides the least difficulty in identification. It is used in accordance with
what we commonly understand through the word. The usual Time isolates thoughts such since
millennium, century, decade, and year and thus on is its manifestations. Time isolates of another
type—such since, day and night, seasons such since summer and winter, and time with
meteorological excellence such since wet, arid, snowy, stormy, etc., is also taken since a
manifestation of the FC Time. Few examples of titles presenting the Time unit are given below:

- Superconductivity in **1997**
- **Winter** sowing of wheat
- **Night** journey through trains
- Technical advances in the 20th century
- Revise of astronomy through the **millennia**

In classification schemes like CC, UDC, etc., time schedules are listed separately since
Time Isolates or Chronological divisions or Featured Time Isolates these general isolates happen
in several subjects.
Legroom

The FC Legroom comes next to Time. Normally, there is no difficulty in its identification and is represented in mainly schemes of classification. It is in accordance with what is commonly understood through the word. It comprises geographical isolate thoughts like continents, countries, states, districts, taluks, municipalities, cities, villages; water formation and physiographical isolate thoughts such since oceans and seas, deserts, prairie, rain-forest, plateau, mountain, rivers, canals; climatologically zones, tropics; regions engaged through population groups, such since municipality, city, etc. All these are taken to be a manifestation of the FC Legroom. The following are examples of titles wherein Legroom Isolates are present.

- Textile industry in Canada
- Mountain ranges of India
- Air-conditioning in the tropics
- Public library services in village
- Political conflicts relating to the Indian Ocean
- The Ganga cleaning project

It is clear that the manifestation of FCs Time and Legroom can be easily understood and presents no difficulty, usually, in their identification. In several cases, they can be recognized from the titles of documents themselves.

Power

The manifestations of Power are usually actions. They connote dynamic actions, such since, doing, changing evaluating determining, `forecasting, analysis, etc. The action may be in the middle of and through all types of entities—inanimate, animate, conceptual, intellectual, and intuitive. The identification of the FC Power is a small more hard than that of Time or Legroom. Since matter of information, the distinction flanked by the manifestation of Power isolate and Matter Property isolate poses troubles mainly due to action-associated thoughts. It has been establish that two clusters of attributes can be deemed to be manifestations of Matter (Property). They are:

- Isolate thought denoting a static attribute that is an action-associated attribute doing few feature function-common or specific-or a behavior of an entity or an organization.

For instance, Function, Physiology and Manage. On this foundation an isolate thought such since Manage occurs since a facet in the subject Management because; it denotes a function
of management. But, on the other hand, the isolate thought Manage occurring since a facet in the subject of Manage of the diseases of the human body is deemed to be a manifestation of Power. Here Manage does not denote a function of anyone deemed to be a dynamic attribute of the core entity. Therefore, it is not a manifestation of Matter.

**Matter**

The identification of the FC Matter, is more hard than even Power. Its manifestations are taken to be of two types—Matter-Material and Matter-Property. Viewed from the angle of Classification, Matter-Material ranges from chemical units or raw materials from one end to finished products at the other end. There is a series of intermediate levels, connecting these two ends. For instance, cotton is a raw material in the context of garment production which is a finished product. Cotton fabric is at the intermediate level. Cotton, though, is the ultimate crop product in the context of agriculture.

According to Ranganathan's school of idea, properties of things, persons, etc., are also deemed to be manifestations of Matter. Isolates such since variance, intensity, wavelength, height, weight, volume, etc., are regarded since manifestations of Matter. Here, are few examples of titles displaying Matter Isolates.

- Density of solid
- Ink excellence in printing
- Rubber excellence in the manufacturing of mattresses
- Electric current resistance of superconductors

**Personality**

The Fundamental Category personality presents the greatest difficulty in identification. It is too elusive. So, Ranganathan had suggested adopting the Way of Residues for identifying Personality Isolate in the facet analysis of a Compound Subject. If a sure manifestation is easily determined not to be one of Time, Legroom, Power, or Matter, it is deemed to be a manifestation of the FC Personality. This is thus; there is five and only five FCs. The application of this way of residues, though, is not infallible. But experience will lead to the establishment of reflex action in recognizing this FC manifesting in any isolate thought.

Nevertheless, later developments have suggested that it is helpful to recognize the manifestations of FC Personality first and then the manifestation of the other FCs. Experience in the design of depth schedules suggests that it is possible to identify a core concept in compound subjects going with a vital subject, such since human mind in psychology, human body in medicine, etc. Such a core concept is deemed to be a manifestation of FC Personality. The attributes of such a core concept can be many. A concept helps to determine the pattern of
sequence of concepts. It helps in determining the relative degree of affinity of subjects going with
dissimilar vital subjects. Greater weight age will have to be given in relation to the affinities in
the middle of core concepts, The core concepts in their role since manifestations of the FC
Personality act since leading sections of the organization. Therefore, to search for this leading
section core concept should be the best way of recognizing the manifestation of the FC
Personality

In other languages, **Personality** is a central section of the whole subject, encompassing a
range of related thoughts. **Crops** in agriculture, **natural clusters** of plants in botany, animals in
zoology, the **Society of people** in history, **substances** in chemistry, and **social clusters** in
sociology are few of the best examples to understand and comprehend the FC **Personality**. Examples of tides displaying Personality Isolates are:

- Quantitative analysis of Organic Compounds
- Economics of Steel Industry
- Cotton bleaching in hydrogen peroxide
- History of Indian people
- Cancer of Lung
- Revise of anger in Women
- Sugarcane yield in Uttar Pradesh

**Facet Analysis**

**Subject Analysis by Facet Analysis**

A facet is an aspect of a subject. Facet analysis means an analysis of a subject into its
characteristics obtained on the foundation of a systematic application of a set of features. Facet
analysis of a subject results in the formation of clusters of classes. Let us show this with an
instance: In analyzing the subject Toy Production, we can discern that Toys, being the ultimate
product manufactured, is one of its facets; the Materials used in the creation of toys is another
facet and the Procedure of manufacturing toys is yet another facet. Therefore, the Toys facet will
include a number of clusters and subgroups; same is the case with the Material facet and
Procedure facet. The chart 3.2 given here will further clarify this:

Chart 3.2. Toy Production
We have divided Toys into a number of subgroups on the foundation of the application of a set of features; likewise Materials used in the creation of Toys have been divided to produce a number of subgroups and thus also the Procedure of production of Toys has been divided to result in a number of subgroups. Each of these subgroups could be further divided to form sub-subgroups till a point is reached when no more division would be possible. These subgroups and the sub-subgroups since well since the members of each one of these clusters are all arranged systematically in a helpful order and displayed in a classification schedule which serves since a tool for classification.

It is clear that all subjects can be broken up into their facets applying suitable features for the purpose of division. We should also note that facet analysis is independent of any organization of classification. The purpose of such division of subjects into their facets is to obtain a helpful order in classifying documents on the foundation of their subject contents for organizing them on library shelves, in catalogues and in bibliographies and such other apparatus of storage and retrieval of fact.

Therefore, facet analysis, according to Ranganathan, is Analysis of a subject into facets according to the postulates and principles stated for the purpose. In the languages of Palmer and Wells it...means the analysis of a specific subject into facets produced through the application of features.
The earlier schemes of classification were enumerative in nature and the whole universe of subjects was systematically divided into classes and sub-classes and resulted in readymade class numbers. In contrast, Ranganathan adopted the faceted style wherein, instead of enumerating all subjects of past, present and anticipatable future, it would be bigger to enumerate the vital concepts or units or descriptors. At the time of classification of documents depending on the subject concerned - easy, compound, intricate—the concepts/descriptors can be examined and then synthesized in a suitable manner resulting in class numbers on behalf of the subject(s) discussed in the documents. While the facet analysis style is adopted through the classifications in desiring classification schemes, the classifier adopts it for classifying document.

**Colon Classification and Facet Analysis**

In the middle of the organizations of library classification, it is in Colon Classification that we see the explicit application of facet analysis in full measure. Ranganathan urbanized his postulate of Fundamental Categories from the intensive analysis of subjects into their facets. In information, in the first three editions of Colon Classification, the Fundamental Categories of PMEST had not featured. After cautiously learning the types of facets in dissimilar subjects, Ranganathan was able to set up that they could be accommodated in Five Fundamental Categories, despite their evident surface differences. In subsequent editions of CC, the Postulate of Fundamental Categories has been used to design schedules for every, vital subject. CC is regarded since a Freely Faceted Classification Organization because it is the nature of subjects that determines their facets which are fitted into the framework of postulates and not based on any predetermined facet building. The enumeration of isolates for each class, the general isolates, the legroom and time isolates, the language isolates, etc.,—all these have appeared by the Principle of Facet Analysis.

Applying the postulate of Fundamental Categories of Ranganathan to the subject `Toy Production we may regard

- Toys since a manifestation of Personality
- Materials since a manifestation of Matter
- Production since a manifestation of Power
- Legroom and Time can be added when warranted

If the title Treatment of Lung Disease in India in 1997 is examined, it results in the following facets:

- **Vital Subject** : Medicine
- **Personality** : Lung
- **Matter** : Disease
Power : Treatment
Legroom : India
Time : 1997

_Dewey Decimal Classification and Facet Analysis_

In Dewey Decimal Classification, there is clear indication of the implicit exploit of Facet Analysis for the design of the classification organization. In the Editors Introduction to the 19th edition of DDC, it is stated, In all classes unless a dissimilar sequence is prescribed, arrangement is first through mainly specific discipline and mainly specific subject under it, then through region of specification, then through time specification if the schedules permit then through form of presentation.

_Universal Decimal Classification and Facet Analysis_

The Universal Decimal Classification (UDC) has adopted the vital building of DDC but has urbanized on its own philosophy, policies and principles. The facet building of UDC is much more explicit than it, is in DDC. Few of its faceted characteristics are given below:

- General auxiliaries of Lay, Race and Nationality, Time, Points of View, etc.;
- Facet indicators Colon (:) Square Buckets() Double Colon (::) to combine two or more facets;
- Special auxiliaries to introduce facets peculiar to a given vital class with specific facet indicative;
- Availability of a facet division for application to any class which warrants such division.

This is somewhat same to the provisions in DDC.

_Facet Sequence_

We have thus distant been discussing an analysis of subjects into their facets. But the purpose of such analysis is to synthesize the facets-in a chosen order to be helpful for document storage and retrieval. Thus the end objective of analysis is to set up an order of synthesis of the facets. Without this intensive analysis, it would be hard to set up a rational order of synthesis. Indeed facet analysis and facet synthesis are the two faces of the similar coin, the one has no purpose without the other.

The question now arises is what should be the sequence of facets? Is there any single order through which the sequence of facets could be recognized which is mainly helpful for the purpose of document storage and retrieval?
Ire the instance Toy Production, we recognized three facets, viz., Toys (A), Materials (B) and Procedure (C). The following are the six methods of arranging these three facets:

- Toys, Materials Procedure : ABC
- Toys, Procedure, Materials : ACB
- Materials, Toys, Procedure : BAC
- Materials, Procedure, Toys : BCA
- Procedure, Toys, Materials : CAB
- Procedure, Materials Toys : CBA

If there are only two facets, there are two methods of arranging them viz., AB or BA. If there are three facets, there are six methods of arranging them. If there are four facets, there are 24 methods of arranging them. If there are five facets, there are 120 methods of arranging them. Obviously we have to choose only one in the middle of the several choices accessible, since we cannot have all of them. How to choose one order in the middle of the several is the question.

**Facet Sequence in Colon Classification**

After determining the several facets curing in a Compound Subject, one should arrange them in a helpful sequence. For this purpose, Ranganathan enunciated five postulates. These are:

- Postulate of First Facet
- Postulate of Concreteness
- Postulate of Facet Sequence within a Round
- Postulate of Facet Sequence with the Last Round
- Postulate of Stage and Stage-Cluster

**Facet Sequence in Dewey Decimal Classification**

DDC does not specify any facet sequence in its schedules of compound subjects, although it uses implicitly the principle of facet analysis. But, long rules have been provided throughout its schedule for classifying documents, which demand a treatment of by facet analysis and synthesis.

Agriculture and Related Technologies have been divided first through crop manufacture, then through plant injuries, diseases, pests and then through individual crops since given below:

- 630: Agriculture and related technologies
- 631: Crops and their manufacture
- 632: Plant injuries, diseases, pests
- 633: Field crops
Now, a document on *Harvesting of Peaches* could either be classed in 631.55 giving preference to Harvesting or under 634.25, giving preference to Peaches. But the specific subject of the document needs a combination of the two, viz., the scrupulous crop and harvesting. Rules given under 634.25 (Add since instructed under 633-635) precisely indicate that the two facets could be combined, drawing the subdivisions of 631 on behalf of harvesting to arrive at 634.255 which stands for Harvesting of Peaches. In this method, throughout the schedule, rules have been provided to combine facets directly without any connecting symbol or with a connecting symbol of Zero (0). But the citation order is set through the organization and is not necessarily based on any stated principle.

In addition to the set of rules prescribed at several spaces in the Schedules, DDC suggests a Citation Order Formula when no rule has been provided. The facets and the sequence or citation order suggested are given below:

- Things
- Types of things
- Sections of things

Materials from which the Things, Types and Sections are made, Properties of the Things, Types, Sections, Materials Procedures within the Things, Types, Sections, Materials Operations upon the Things, Types, Sections or Materials Mediators performing such Operations. The rule says:

- Apply the citation order formula which will usually prove to be reasonable and helpful.

**Facet Sequence in Universal Decimal Classification**

Although there is no specific citation order or facet sequence given in UDC, either in its introduction or anywhere in the Schedules of classes, a Citation Order has been recommended through Jack Mills in his Guide to Universal Decimal Classification which is since given below.

Things, Types, Sections; Materials:

- Properties;
- Procedures;
- Operations;
- Agent.
The General and Special Auxiliaries with their specific facet indicators give full scope to apply facet synthesis wherever necessary.

Particularly the relation signs Colon (:), the Square Brackets [ ] and the Double Colon (::) facilitate combination of facets: For instance, for classifying a document Virus diseases and indoor plants, the schedule gives distinct spaces for virus diseases and indoor plants, since 635.91 and 632.38. But they can be combined through the relation sign colon (: ) to get a class number since 635.91:632.38. This can be reversed since 632.38:635.91, creation virus diseases the first facet and indoor plants the second, if a library prefers this sequence. But if a Double Colon (::::) is used for the combination, the reversing device would not be allowed.

Square Brackets [ ] since a facet combinatory is used to indicate a scrupulous chosen order of facets. For instance: Indoor anemones (anemones are a type of indoor plants) get the class number 635.91:582.675.1(582.675.1 standing for anemones), But if a library wants to gather everything on scrupulous plants jointly, under the common heading. Horticulture, it might transform the above number to 635.91 [582.675.1] to create the main facet the individual plant with indoor since a secondary facet.

This principle is recognized since Flexibility in facet citation. This is acclaimed since strength but it could also be viewed since an undesirable characteristic if libraries by UDC chase dissimilar facet sequences.

The Special Auxiliaries also provide scope for facet combinations. There are three kinds of special auxiliaries which are by facet indicators (Hyphen (-) Point Zero (.0) and the Apostrophe O. The Hypen and Point Zero are used to introduce a facet peculiar to a given vital class.

The apostrophe is at present used with a rather dissimilar meaning in chemistry and same subjects where it is used to indicate synthesis of material units since well since notational.

**Few Common Observations**

Colon Classification is backed through a theoretical foundation for fixing the facet building of its schedules. While this theoretical foundation may be subjected to criticism, it is essential to have a theoretical foundation without which the order of arrangement of classes would suffer. Framing ad hoc rules for by facet analysis and synthesis, both DDC and UDC are not able to get a mainly desirable filiatory sequence of classes, The policy of DDC, while recognizing its weak building, is not to introduce any vital structural transforms which might endanger its exploit through many thousands of libraries throughout the world, but meet the problem through providing rules for facet analysis wherever necessary. UDC, having a greater facility for facet analysis and synthesis, suffers from its version of DDCs building which restricts its scope of the exploit of the facet principles of analysis and synthesis. In recent times there
urbanized a generation gap in the middle of the three classification organizations. With DDC or UDC, it is not possible to create any drastic transform to meet the expanding demands of bibliographic classification. Future classification organizations would benefit from Ranganathans contribution to theoretical base to library and bibliographic classification.

PHASE RELATION AND COMMON ISOLATES

Vital Compound and Intricate Subjects

It is useful to begin with the definitions of Vital Subject (BS), Compound Subject (CdS), and Intricate Subject (CxS) in order to get a clear notion of stage analysis. A Vital Subject is a subject which:

- Is enumerated in the schedule of BS;
- Cannot be expressed since the Compound Subject of any of the existing BS, i.e., a subject without any isolate thought since a component;
- Is evolved through one full cycle of the spiral of scientific way since propounded through Dr. S. R. Ranganathan. They also exhibit dissimilar manners of formation of subjects;
- Calls for schedules of special personality, matter and power isolates;
- Has little specialization-academic and/or professional segmentation. The indicators for this are:
  - Subsistence of professional societies
  - Degree course
  - Periodical publications
  - Whole books on the subject

There are many diversities of BS. The correlation of manners of formation of BS to the types of BS is summarized since follows figure 3.1.

Fig. 3.1. Kinds of Vital Subjects (BS)

Primary Vital Subjects are the core frame for all other types of BS. Compound Subject (CdS) is a subject with a BS and one or more isolate thought (Isl) since components. e.g.,

- Chemistry of alcohol-chemistry (BS),
- Alcohol (IsI)
Intricate Subject (CxS) is a subject shaped through a combination of two or more subjects—vital or compound. e.g.,

- Common relation flanked by economics and sociology
- Economics for statisticians
- Economics convinced through political factors

Stage Relation

A stage relation is the assembling jointly of two or more of

- Subjects (Vital or Compound)
- Isolate thoughts
- One and the similar facet, or isolate thoughts in one and the similar array).

Assembling is done to express one or the other of possible dealings flanked by the components of the assembly. The result is an intricate subject, intricate isolate thought, or an intricate array isolate thought, since the case may be.

Each component in the assembly, in its turn, is described a stage. They are described stage 1 and stage 2 since determined through their sequence in the assemblage.

Kinds of Stage Relation

There are three kinds of stage relation. The relation may be flanked by

- Two or more subjects, recognized since Inter-Subject Stage Relation; or
- Two or more isolates within one and-die similar schedule of facet isolates, recognized since Intra-Facet Stage Relation; or
- Two or more isolates within one and the similar array of isolates, recognized since Intra-A Stage Relation.

Inter-Subject Stage Relation

In inter-subject stage relation, we notice an interaction flanked by two subjects. Believe, for instance, the following titles:

- Sociology for economists
- Statistical analysis in library management
- Weather forecasting for the farming of the rice crop

In the first instance, two main classes are involved; sociology and economics. The specific subject of this title is sociology, expounded to suit the special requires of economists. In the second instance, the statistical analysis is a tool subject used in managing libraries. Here, the two subjects involved are library science and statistics. The two compound subjects in the third instance are weather forecasting from meteorology and rice farming from agriculture.

Intra-Facet Stage Relation

In intra-facet stage relation, we see two isolate thoughts of the similar facet interact to form, an intricate subject. For instance:

- Relative revise of Buddhism and Jainism
- Variation flanked by democracy and oligarchy
- Power of aristocracy on rural folks

In the first instance, the relative revise is flanked by two religious faiths belonging to the facet religion. In the second, the revise is flanked by two isolates of the similar facet kind of state in political science.

In the third instance, what is studied is the power of aristocracy on rural people. Both these isolates belong to the similar facet social clusters in sociology. The following diagram 3.1 displays the infra-facet stage relation. The asterisk spots indicate relation.

Diagram 3.1. The Infra-facet Stage Relation
The component which is the primary focus of exposition in a two-phased subject is referred to since the primary stage and the second component that interacts to expound the first stage is recognized since the secondary stage.

**Intra-Array Stage Relation**

In intra-array stage relation isolate thoughts belonging to the similar array of a facet are in a relation with each other. Intricate subjects of this kind are illustrated below.

- Comparison of rural and urban life
- Variation flanked by laws relating to dacoity and theft
- The connection flanked by politically handicapped and socially handicapped persons in psychology

In We examples, be relation is flanked by isolates of the similar array of a facet. In the first instance, isolate thoughts rural and urban belong to the similar array of the facet social clusters in sociology. In the second instance, isolate thoughts dacoit and theft belong to the similar array of the facet legal entity. In the third instance, isolates politically handicapped and socially handicapped belong to the similar array of the facet entity. These three concepts are presented in figure 3.2 here.

Fig. 3.2. Three Concepts of relation is flanked by isolates of the similar array of a facet
**Types of Stage Relation**

In colon Classification six types of Stage dealings have been recognized since given below with their indicator digits.

- Common
- Bias
- Comparison
- Variation
- Tool
- Power

Table 3.2. The indicator digits
Common Stage

Common Stage Relation denotes a more or less complete relation flanked by the primary and secondary stages, viz., inter-subject, intra-facet or intra-array.

The sequence of the stages is determined on the foundation of the sequence of classes given in the classification schedules of any of the schemes of classification. The sequence of the two stages is given according to Colon Classification.

- Relation flanked by Religion and Philosophy (Inter-subject) Religion—Philosophy (Sequence in CC) Q&aR
- Relation flanked by anatomy and physiology.,(Intra-facet) According to CC, Anatomy would precede Physiology; hence the sequence of the two stages is since follows: Medicine, Anatomy, Physiology L;2&j3
- Relation flanked by Audio and Visual studying in Education. Here again, according to CC, Audio would precede Visual and hence, the sequence of the two stages is Education, Studying, Audio, Visual T;416&t7

Bias Stage

The Bias Relation flanked by two subjects designates that the exposition of one subject (Stage 1) is biased towards another subject specialist (Stage 2). This means that the exposition of a subject is specially attuned through the selection, arrangement, choice of illustrations, etc., of the topics since per requires of a specialist. Here, Stage 1 is recognized since Biased Stage and Stage 2

- Statistics for librarians: BT&b2
- Statistics for Engineers: BT&bD
- Statistics for Biologists: BT&bG

The sequence of the three subjects of the Biasing Stage is in accord with the CC. There seems to be no literary warrant to provide examples of intra-facet and intra-array dealings.
Dewey Decimal Classification, for the first time in the 18th edition made provision for the exploit of stage relation. It is done through the Average Subdivision -024. The numbers for the above subjects in DDC will be

- Statistics for librarians: 310.24092
- Statistics for engineers: 310.2462
- Statistics for biologists: 310.24574

In UDC the connecting symbol for stage relation is colon though UDC does not create any variation flanked by stages of stage relation. For all kinds of relation there is only one connecting symbol. The numbers for the subject will be:

- Statistics for librarians: 31:02
- Statistics for Engineers: 31:62
- Statistics for Biologists: 31:573

The sequence of the three subjects of the Biasing stage is in accord with the CC. There seems to be no literary warrant to provide examples of intra–facet and intra-array dealings.

**Comparison Stage**

This Stage Relation denotes cases where two subjects are compared. Believe the following examples:

- Comparison flanked by plants and animals (Inter-subject): Botany—Zoology (Sequence in CC) I&cK
- Comparison flanked by morphology and physiology (Intra-facet): I;2&m3
- Relative psychology of man and woman (Intra-array): Psychology, Man, Woman (Sequence in CC) S,55&v6

**Variation Stage**

This Stage Relation denotes cases of documents where the variation flanked by two subjects is expounded. For instance:

- Variation flanked by political science and history (Inter-subject): History—Political Science (Since in CC) V&dW
- Psychological variation flanked by sick and abnormal persons (Intra-facet): Psychology, Sick, Abnormal (Since in CC) S, 4&m6
- Variation flanked by meditation and worship (Intra-array): Religion, Worship, Meditation (Since in CC) Q;413&w4
This Stage Relation trades with cases of documents where one subject is used since a tool to expound the other. For instance:

- Literature Through Art: A New Style to French Literature (Inter-subject): O,122&eN
- Classification since a tool to revise circulation service (Intra-facet): 2;8&p5
- Rural sociology since a tool to revise urban sociology (Intra-array): Y,342&x1

This stage Relation has been recognized since one of the stage dealings to classify documents which display such dealings. This device, though calls for further investigation to assess its full implications. It is also referred to since Exposition Stage.

- Power of nourishment on education (Inter-subject): T&gL;573
- Power of intellectuals on ruling classes (Intra-facet): Y,417&r53
- Power of direct tax on indirect tax (Intra-array): X 72,01 &y2

The sequence of the two stages in the two stages in the three examples is:

- Education
- Nourishment
- Ruling Classes
- Intellectuals
- Indirect Tax
- Direct tax

The subject that is convinced is in the First Stage through the subject that influences. Thus distant, six types of stage dealings have been recognized. It is quite possible that some more may be encountered. The noteworthy point is that a way has already been provided, since in Colon Classification, which may be helpful for handling intricate subjects of the future.

Such elaborate devices exist only in CC. UDC and DDC have not made provision to distinguish dissimilar kinds of dealings. Through UDC has provided a single connecting symbol for all kinds of relation, though, some in DDC we can recognize intra-facet relation like:

- Foreign dealings flanked by India and UK = 327.54Q41

In this case India (54) and UK (41) are from the similar facet and hence can be stated since intrafacet relation since suggested, create a relative revise of the Stage Relation in all the three schemes.
Stage analysis and synthesis have been urbanized to accommodate interdisciplinary subjects who have been steadily rising in the past many decades. **Dewey Decimal Classification** has provided some rules and instructional guidelines to classify intricate subjects. The Universal Decimal Classification has made limited provisions for handling intricate subjects. But in the middle of the, three Classification Schemes with which we are concerned in this Course, it is the Colon Classification that has given a full treatment to this region of classification.

**Colon Classification**

In Colon Classification, stage dealings have been explicitly recognized and categorized into kinds and types. It has provided specific rules for classifying intricate subjects. Presently since facet analysis has given a logical and helpful framework for classifying multifaceted subjects, stage analysis has provided a same frame job to trade with interdisciplinary subjects. These devices have been based on theoretical foundations to obtain a helpful and practical arrangement of documents on library shelves and of entries in catalogues and bibliographies tuned to user necessities.

**Dewey Decimal Classification**

Dewey Decimal Classification being an enumerative organization of classification, has extremely limited provision for the explicit exploit of stage analysis and synthesis. Its recognition of intricate subjects, though, can be noted in the provision given for classifying such subjects. These provisions are:

- Enumeration of intricate subjects in its schedules: Instance: Enumeration of Science and Religion at 261.55
- Exploit of Average subdivision for Bias Relation

**Universal Decimal Classification**

In Universal Decimal Classification, the relation sign colon (:) is used to indicate all kinds and types of stage dealings. The similar sign is also used for facet dealings. The following examples show these reports.

- 2:5: Religion and science (inter-subject—common stage relation)
- 51:62: Mathematics for Engineers (inter-subject—bias stage relation)
- 22/28:294.3: Comparison flanked by Christianity and Buddhism (intra-facet—comparison stage relation)
- 595.141:591.142: Variation flanked by easy marine worms and earth worms (inter-array—variation stage relation)
- 7:8: Power of literature on art (inter-subject—power stage relation)
- 8:7: Literate through art, a new style (inter-subject—tool stage relation)

General Isolates

Many families of isolates can be recognized within the universe of isolates since sub-universes. These contain families of geographic isolates, featured time isolates, physiographical isolates, action isolates in common, property isolates in common, etc, and Institution isolates can form components of many compound subjects going with each of all or approximately all of the vital subjects. Each isolate in each such family is described a General Isolate (CI). Schedules for each of the families of general isolates are given since a set through themselves in practically every scheme of classification, except for LC and RIC, without any scrupulous vital subject since the context.

Meaning of General Isolates and their Require

Ranganathan defines general isolates since an isolate thought denoted through the similar isolate word and represented through the similar isolate number, quite irrespective of the compound subject in which it occurs, or the vital subject with which the compound subject goes. In DDC, it has been explained since a special type of patterned repetition Any subject can be presented in many shapes. It could be in the form of outline, history, theory or dictionary. It could also be in the form of a periodical or a handbook. It could since well be a presentation of how to revise or teach that subject. These general shapes and manners of presentation are described average subdivisions.

It has been establish that sure types of concepts stay recurring and may be establish in several subjects, e.g., proceedings, periodical, dictionary or encyclopedia. These are all referred to since shapes of presentation. Publications like Journal of Economics, Encyclopedia of Philosophy and Proceedings of All India Library Conference have their own subjects. All these subjects, though, are presented in scrupulous shapes. The shapes involved here such since journal, encyclopedia and conference proceedings are commonly referred to since outer shapes. There are inner shapes also, i.e., shapes of style to the subject. For instance, theory, revise and teaching, history and biography are several styles to the subject and they are recognized since inner shapes.

We also discover that subjects are treated in the historical and geographical contexts, which are usually described through the conditions time and legroom respectively. Therefore,
inner and outer shapes of presentation and historical and geographical treatment are characteristics general to all or mainly subjects. They, so, recur throughout the scheme of classification. In library classification, such recurring concepts are standardized. This standardization results in economy of mass, since it restricts the length of the schedules in a scheme through listing these general characteristics only once. Incidentally, standardization also lends mnemonic value to the recurring concepts, since they are uniformly expressed through the similar set of symbols. Hence, in a scheme of classification, distinct tables are provided for general isolates and directions are given for their application.

**History of General Isolates**

There are many things which go to the credit of Melvil Dewey. The concept of general isolates is one of them. In the beginning he described them form divisions. They were first introduced in the second edition of DDC brought out in 1885. As then they have undergone many transforms. The name form divisions sustained up to the twelfth edition of DDC published in 1922. This name was changed to general subdivisions in the thirteenth edition appearing in 1932. These general subdivisions were listed under three dissimilar categories, viz., miscellaneous general subdivisions, viewpoints and form divisions. This whole set reappeared since presently form divisions in the fifteenth and sixteenth editions and was renamed since average subdivisions in the seventeenth edition. The seventeenth edition also recognized legroom and time isolates since general isolates and listed them since such. Until the publication of the seventeenth edition, the history schedule had been used for legroom isolates.

In UDC, general isolates are described auxiliary subdivisions. Broadly, there are two kinds of auxiliaries in exploit in UDC: general and special. Auxiliaries of form in UDC are like the average subdivisions of DDC. Legroom and time isolates are treated since general auxiliaries and listed separately. The exploit of auxiliaries in UDC is a significant aspect in number structure.

In the first edition of CC, there were three dissimilar schedules for general subdivisions of which legroom and time were two. The number of general subdivisions was little initially. It was only in the fourth edition of CC that these were recognized since interiorizing and posteriori sing general subdivisions. In the fifth edition, they were named since general isolates. After many transforms through successive editions an exhaustive list of general isolates has appeared in the seventh edition of CC.

**Types of General Isolates**

According to the definition of the word General Isolate Thought , the dissimilar types of general isolates contain language isolate thoughts, time isolate thoughts, legroom isolate thoughts
and interiorizing general isolate thoughts. There can also be general personality isolate thoughts, general matter isolate thoughts, and general power isolate thoughts.

It may be noted that in the middle of the manifestations of the Fundamental Categories Power, and Matter, few will be special isolate thoughts and few others will be general isolate thoughts. The matter general isolate thoughts consist of properties and values and not of materials. Though, these general property isolates and power general isolate thoughts too require enumeration. Further, it is establish that power general isolate word and matter general isolate conditions are often establish coalesced into a single word in the documents; one has to distinct them. Also, one and the similar general isolate thought is not always denoted through the similar word at all times; their reduction to a single word is time-consuming.

**General Isolates in Colon Classification**

The general isolates in CC are quite dissimilar from those studied in DDC. Though the purpose and require for general isolates are the similar, the number of general isolates and their application differ in CC. It has clearly differentiated general isolates. General isolates are defined in CC since those which denote the similar isolate word and are represented through the similar isolate number. The family of general isolates in CC is also extremely big. There are many kinds of general isolates which can be seen at a glance from the diagram 3.2 given below.

![Diagram 3.2. Kinds of general isolates](image)

Up to the sixth edition of CC there had been a clear distinction flanked by interiorizing and posteriorising general isolates. Anteriorising general isolates were attached to a host (core) number without any connecting symbol, whereas posteriorising general isolates were attached with a connecting symbol. In the seventh edition that distinction has been removed. Though, they have retained the similar function assigned to them in the earlier editions.

**Anteriorising General Isolates in CC**

Anteriorising general isolates mean that they have precedence in arrangement in excess of the class numbers to which they have been attached. In short, the anteriorising general isolates
have the anterior value. To explain this with an instance, in the arrangement of class numbers V, 54 and, 54 a, V, 54 comes before NF, 54 in the sequence of classes. Documents such since bibliographies, encyclopedias, periodicals and histories of a subject are style documents, and since such, they necessity precede other core documents on the subject in the arrangement on the shelves.

**Anteriorising General Isolates**

Applicable before legroom facet:
- a—bibliography
- c—concordance
- d—table
- f—atlas
- k—cyclopedia
- m—periodical
- p—conference proceedings
- v—history
- w—biography

Applicable after legroom facet:
- r—periodical management statement
- s—statistics (serial)

**Anteriorising General Isolates**

Applicable after time facet:
- T—commission statement
- t4—survey
- v—source material
- v46—genealogy
- v6 chronology

**Posteriorising General Isolates in CC**

Posteriorising general isolates are of three kinds, personality, matter and power general isolates. They are to be attached to the host (core) class with their respective connecting symbols, viz., comma, semi colon and colon. A personality general isolate stands mainly for organizations, few of which—are since follows:
- f—investigating—institution
Matter, Power, Legroom and Time Isolates in CC

The number of power general isolates in the sixth edition of CC was little. The matter general isolates seem for the first time in the seventh edition.

Legroom and time are regarded since general isolates and are listed separately. They can be attached to any host class number whenever warranted.

Application of General Isolates in CC

We have seen that in CC there are dissimilar kinds of general isolates. The application of each of these kinds is illustrated below with appropriate examples.

Anteriorising General Isolates

The following examples show the exploit of anteriorising general isolates:

- C aN7: Bibliography of physics books up to the 1979s
- C k73,N3: Encyclopedia of physics, first published in the USA in the 1930s C m56,N5—Physics journal first published in the UK in the 1950s
- C p44,N7: Proceedings of physics, conference held first in the 1970s in India
- C 1v: History of physics
- C wM88: Biography of a physicist, born in the year 1888 (C.V. Raman)

Note that the connecting symbol double inverted comma ( ) in the examples has no ordinal value. All the numbers have precedence in excess of the vital class C (physics). The anteriorising general isolates are applied before the legroom facet. Now let us see some examples of anteriorising general isolates which are applied after the legroom and time facets.

- T, 4.44 r: Statement on adult education in India.
- T, 4.44 s: Statistics on adult education in India (Published frequently, a serial).
- T, 4.44N75 t4: Statistics of adult education in India published in 1975 (a stray publication)
The first two are cases of a general isolate being applied after the legroom facet and the last two are cases where it is applied after her time facet. You will also notice that many general isolates in CC have their own facet formula which is shown beside with the general isolate at suitable spaces in the schedules.

Posteriorising General Isolates

Under these, we have to revise personality, matter, power, legroom and time general isolates since suggested,, so, take them up one through one in that order.

Personality General Isolates

These symbolize organizations or organizations. A personality general isolate is ordinarily added after the legroom facet. The institutional unit in the number can be worked out through what is recognized since the alphabetical or chronological device. The alphabetical device consists of the initial letter of the institutions name used to symbolize it in the number. The chronological device consists of the year of establishment of the institution. The alphabetical device is used when the year is not recognized. The chronological number is preceded through 9, if the institution is a national body. Some examples worked out below will help you to understand the exploit of the personality general isolate.

- Indian Mathematical Society founded in 1931: B.44,g,9N31
- Delhi University: T,18.44,t4,N21.
- Poona Observatory: B9.44,f2,P

Given below is the expansion of the numbers thus since to enable you to know the rules:

- B Mathematics:
- 44: India (all legroom isolates are added with a dot() since the connecting symbol)
- G: Learned body (all lower case Roman letters symbolizes general isolates. An unit added with a comma since the connecting symbol designates personality facet)
- 9N3 1: A national body is represented through 9 and the date of base; N31 is 1931
- T Education :
- T,18: University education. 18 from personality facet under the main class T
- 44.: India
- t4: An institution of higher education. t4 is a personality general isolate.
- N21: Founded in 1921. Delhi University is a localized body and thus 9 are not prefixed.
- B9 Astronomy :
- 44: India
- f2: Observational institution (f2 is a personality general isolate)
Matter Property General Isolates

An exhaustive list of matter property general isolates seems for the first time in the seventh edition of CC. A matter property general isolate is applied with a semi-colon since the connecting symbol.

Power General Isolates

A power general isolate (Exhibit 3.2), is attached with the connecting symbol colon. Since in the previous examples, first a class number suitable to the subject on hand is worked out and then, if necessary, a general isolate to be attached is determined.

Exhibit 3.2: The Power General Isolates

<table>
<thead>
<tr>
<th>ab</th>
<th>- establish, inaugurate</th>
</tr>
</thead>
<tbody>
<tr>
<td>af3</td>
<td>- differentiate</td>
</tr>
<tr>
<td>ak</td>
<td>- compensate</td>
</tr>
<tr>
<td>alD2</td>
<td>- infiltrate</td>
</tr>
<tr>
<td>aR</td>
<td>- investigation, research</td>
</tr>
<tr>
<td>aR2</td>
<td>- observing</td>
</tr>
<tr>
<td>af</td>
<td>- evaluation</td>
</tr>
<tr>
<td>dl</td>
<td>- designing</td>
</tr>
<tr>
<td>eb</td>
<td>- mixing</td>
</tr>
<tr>
<td>eg</td>
<td>- cleaning</td>
</tr>
<tr>
<td>ev</td>
<td>- washing</td>
</tr>
<tr>
<td>a3</td>
<td>- boiling</td>
</tr>
<tr>
<td>fZ6</td>
<td>- preserving</td>
</tr>
<tr>
<td>p2</td>
<td>- describing</td>
</tr>
<tr>
<td>pR4</td>
<td>- printing</td>
</tr>
<tr>
<td>ul</td>
<td>- surveying</td>
</tr>
</tbody>
</table>

General Isolates in Dewey Decimal Classification

In DDC, general isolates have undergone many transforms in both nomenclature and presentation. They were spelled out through dissimilar naives in dissimilar editions of DDC. The dissimilar names used thus distant are form divisions, general subdivisions, viewpoint numbers and average subdivisions. From the seventeenth edition onwards they have been described average subdivisions. A complete list of average subdivisions seems since Table I in volume I of the nineteenth edition of DDC. The following are the dissimilar kinds of general isolates in DDC.

- 01: Philosophy and theory
- 016: Indexes
- 02: Miscellany
- 022: Illustrations and models
- 028: Techniques, processes, tools, equipment, material
- 0285: Data processing
- 0288: Maintenance and repair
- 03: Dictionaries, encyclopedias, concordances
- 05: Serial publications
It is, therefore, clear that the numbers are not used self-governing of the core numbers from the subject schedules. Every number is preceded through a dash which merely illustrates that the number never stands alone. The dash is to be omitted when it is added to a core number taken from a subject schedule.

**Connecting Symbols for General Isolates in UDC**

The connecting symbols or indicator digits in UDC play a major role in the structure of class numbers. Since in CC, the indicator digits in UDC reveal the kind of facet used. That is the cause, through in depth classification; UDC has become extremely popular throughout the world.

The general auxiliaries of form are put in parentheses with a connecting symbol naught (0..). They are used more for outer shapes of presentation like dictionary, journal, etc. They are also used for some inner shapes. Legroom isolate in UDC is like a region number in DDC. In UDC, it is put in parentheses (1/9). Since in CC, it contains a section from the political division and there is also provision for ones, orientation, physical characteristics, etc.

A time isolate in UDC compares well with CC. There is provision to illustrate months, days, hours and even minutes. The time isolate is encased in double, inverted commas ( …. ). The following are some illustrative examples of the exploit of general isolates in UDC.

**General Auxiliaries of Form**

You will discover the exploit of both inner (e.g., history) and outer (e.g., journal) shapes.

- Bibliography on international law: 341(01)
- Dictionary of international law: 341(03)
- Journal of international law: 341(05)
- Teaching of international law: 341(07)
- History of international law: 341(09)

The general auxiliaries of form are put in parentheses with a zero since the connecting symbol.

**General Auxiliaries of Lay**
Like DDC and CC, UDC also gives a fairly exhaustive schedule of geographical isolates. This schedule covers political since well since physiographical divisions. All these are described general auxiliaries of lay. Their application is easy and easily understandable. Some examples are given below for your benefit. You will notice that the lay number is always put in parentheses without any prefix.

- 327(540): Foreign policy of India, where 327 is foreign policy and (540) is India. Bilateral dealings flanked by two countries can also be shown with ease. Therefore,
- 327(540:41): Bilateral dealings flanked by India and the U.K. The number for the second country (41 U.K.) in the above case is joined with a colon.
- 33(540-22): Economic circumstances of rural India where 33 is Economics, (540) is India and (-22) is rural zone (zones or defined regions can be joined through a hyphen to another lay).

**DEVICES IN LIBRARY CLASSIFICATION**

Devices in library classification may be termed since components used for forming or sharpening

Based on the feature used for this purpose, they are described since chronological device, geographical device, etc. These devices are used through classification organizations wherever helpful and possible and are applicable both in the thought plane since well since in the notational plane.

Usually speaking, the advantages of the devices are that they:

- Avoid enumeration and thereby shorten an array in a schedule, and therefore, the schedule itself;
- Provide autonomy to the classifier; and
- Close automatic conventionality to the canons of constant sequence, helpful sequence,
- Mnemonics, hospitality in array, and hospitality in chain.

On the question of preference of a device, if two or more devices are accessible in a scrupulous lay, the earliest one accessible should be used, unless any other more significant consideration points to the contrary. Though, in few cases it may be required to exploit two or more devices at a time. For instance, in few cases, such since, special component for a language, or approach for fine arts, the components used should be arranged in the middle of themselves in a helpful sequence and the totality of the components should be enclosed in circular brackets.
Kinds of Devices

The following devices have been in exploit in classification organizations for forming or sharpening a facet or a subject;

- Chronological Device (CD)
- Geographical Device (GD)
- Subject Device (SD)
- Alphabetical Device (AD)
- Enumeration Device (ED)
- Devices for Hospitality in Arrays and Chains
- Other devices, such since, Facet Device, Stage Device, Super—Imposition Device, Mnemonic Device.

Devices in Exploit in Classification Organizations

Devices in CC

CC exploits the help of all the devices wherever helpful and possible. The following examples show the exploit of several devices in Colon Classification:

- Chronological Device: It is used for the individualization of:
  - Authors in literature
  - Artificial words
  - Religious sects
  - Diverse organizations in vital classes, such since, physics, medicine psychology, education and economics
  - Styles in fine arts, etc.

CC has elaborate rules on the exploit of this device.

- Geographical Device: It is used for individualization of:
  - Society in history and law
  - Dialect and jargon of a language
  - Approach in fine arts
  - Many of the anteriorising general isolates, etc.
  - Subject Device: It is used in the individualization of:
    - Few substances in organic chemistry
    - Few structures in architecture
    - Few subjects in sculpture
Special views in metaphysics
Subjects in teaching techniques, and
Industries in economics
Alphabetical Device: It is used for the individualization of:
- Jobs of literary and classical authors
- Brands of a machine
- Strains of cultivars, viruses and bacteria

Enumeration Device: In the Rigidly-Faceted, Approximately-Freely-Faceted and Freely-Faceted versions of CC, enumeration device have been used, but less often than in the other schemes of classification.

**Devices in DDC**

Usually speaking, DDC does not exploit the chronological device. While DDC uses the subject device quite often, it uses the geographical device where it is inescapable and the alphabetical device extremely sparingly. The geographical device is used to sharpen a class number in an enumerative classification like DDC. It uses the geographical device in forming the foci in the society facet of a subject going with history and also in a same manner in law. In other subjects requiring regional treatment, the geographical number is added since a legroom facet. Though, this is not a case of geographical device. In DDC, though, there are fifty subjects directed to be divided like 001-999. These are also cases of the subject device. Since regards the alphabetical device, it was induced in the 17th Edition (1965); it allows it to be used more freely. On the other hand, enumeration device is used mainly widely in mainly of the arrays. Even where the geographical device or subject device is used, each of them presupposes the enumeration device having been used earlier.

**Devices in UDC**

Like DDC, UDC does not exploit the chronological device, but uses the geographical device where it is inescapable and the alphabetical device extremely sparingly though it uses more than DDC. In regard to the enumeration device, UDC like mainly of the schemes for classification uses it mainly widely in mainly of the arrays.

**REVIEW QUESTIONS**

- What is subject representation?
- What is postulation approach to library classification?
- State the advantages of the postulational approach to library classification.
- Explain the Fundamental Category “Energy” with an example.
- Explain the uses and advantages of applying the technique of facet analysis for the subjects.
- Define Basic Compound and Complex Subjects with example for each.
- Who introduced the concept of common isolates? When and how?
- What are devices and their advantages?
CHAPTER 3
Approaches to Library Classification

STRUCTURE

- Learning Objectives
- POSTULATIONAL AND Systems Approaches
- Fundamental Categories, Facet Analysis and Facet Sequence
- Phase Relation and Common Isolates
- Devices in Library Classification
- Review Questions

LEARNING OBJECTIVES

After reading this chapter, you will be able to:

- Get a clear grasp of the meaning, need and advantage of the postulational approach;
- Obtain an insight into the application of the postulational approach to library classification;
- Get a clear understanding of the postulate of fundamental categories;
- Understand the concepts and techniques of facet analysis and facet sequence and their application to the classification of documents in a library;
- Identify different types and kinds of phase relation in subjects; and
- Get a clear idea of devices and their need in library classification.

POSTULATIONAL AND SYSTEMS APPROACHES

Subject Representation

Subject representation is the principal foundation on which fact organizations retrieve fact. The subject or idea content of the document can be represented since subject heading index word, class numbers, data buildings and other types of surrogates. This is to give access to fact in the fact organization.

This representation of subjects is done through the procedure of analysis of the subject of document into its constituent units and assembling them in a preferred sequence or order. This procedure is equivalent to transforming the n-dimensional configuration of the subject into a linear configuration. In other languages, it is the procedure through which the dynamic, e multidimensional and multifaceted knowledge since embodied in a document is s/ represented in a linear sequence. Obviously, this would involve the arrangement of that units of each subject belonging to a subject field and all subjects belonging subject meadows in the middle of
themselves in a sequence helpful to the majority of users, keeping unvarying every immediate neighborhood relation, in the middle of all the subject while transforming or mapping the n-dimensional configuration of subjects into a row. He representation is primarily concerned with analyzing, identifying and on behalf of relation flanked by the components of the subject of a document.

While Ranganathans style to the structuring of subjects is based on what the postulational style/way, there was another style based on the organization.

**Postulational Style**

In arranging books on the shelves of a library, convenience needs that they should be arranged aloft a linear sequence. Since books trade with subjects, it follows that the physical limitation enforcing a linear arrangement of books enforces also a linear arrangement of subject but this creates troubles as subjects belong to a dynamic, ever-rising, multi-dimensional universe. In effect, it would mean that classification of subjects for arrangement in library amounts to mapping or transforming the organization of points marked out in multidimensional legroom into an organization of points beside a row. That is, the multidimensional legroom should be mapped beside one-dimensional legroom, a row for instance.

Therefore, in library classification, the problem is to choose what should be kept unvarying in the classification of subjects. The question then is since to which of the subjects can have its immediate neighborhood relation kept unvarying in the mapping, as an indefinitely big immediate neighborhood dealings is possible. Therefore, mapping is a very matter.

Dissimilar schemes have provided dissimilar solutions to this problem. The problem of mapping has been solved through Ranganathan through means of sure guidelines. This, he described since postulational style style to library classification, in which a set of postulates (guidelines) can be for offering an operational methodology in a given field. While this kind of postulational style was adopted in mathematical studies and other subjects like philosophy, Ranganathan used the postulations style extremely effectively in library and bibliographical classification. According to him A postulate is a report in relation to which we cannot exploit either of the epithets right or `wrong`. We can only speak of a set of postulates since `helpful or `unhelpful. Therefore, postulates are sure assumptions, which are helpful in carrying out the procedure of classification of documents.

The postulational style in library classification brings objectivity to the revise and practice of this discipline. It puts the revise and practice of library classification on a scientific foundation. Since a result of this style, the discipline of classification has become both simple and motivating. In information, Ranganathan calls practical classification based on postulates
since classification without tears. On the other hand, classifications who designs and develops schemes of classification should foundation his job on such a style to avoid pitfalls. This style also helps a classifier to avoid the hit-or-miss style to classification. Since a matter of information, the postulates of this style are helpful and useful for a comparison of the efficiency and effectiveness of dissimilar schemes of classification.

Advantages

Specifically speaking, the application of postulates in content analysis is extremely useful for arriving at a helpful order of the resulting thoughts. Few of the advantages in adopting the postulational style are:

- Application of postulates results in a constant sequence of thoughts which conform to a single recognizable pattern,
- Postulates give a matrix for the analysis of contents of documents and to a sure degree help mechanize the process,
- The framework resulting out of this matrix (arrangement of thoughts in lines and columns) gives flexibility to accommodate new concepts without disturbing the existing building of subject, i.e., it facilitates interpolation and extrapolation of thoughts/concepts appropriately, and
- Practical classification becomes methodical, bringing in a greater amount of consistency in classificatory process, although dissimilar persons may be involved in the job.

Application of Postulational Style

Another precious characteristic of the postulational style is that it helps to clear fallacies likely to happen. In this way, one is not bound through any preconceived metaphysical or other thoughts and not even through factual experiences. Sure postulates are assumed and all the implications are worked out. Through varying the postulates, one can get dissimilar models. In other languages, this style sets up many models with many organizations of postulates since the foundation, quite unmindful of the models subsistence or otherwise within the realm of experience or facts. Then, one can choose the scrupulous model whose postulates are helpful in that universe. So, Ran and concludes through saying that classification too will gain in this efficiency if the postulational way is adopted.

While charting the universe of knowledge, dissimilar schemes have followed dissimilar ways and styles. Ranganathan, on the foundation of sure assumptions, i.e., postulates, has preceded step through step to chart the universe of subjects methodically and scientifically. The following chart 3.1 illustrates the procedure of division of the universe of subjects.
The procedure of mapping of the universe of subjects up to Step 2 is same in all schemes of library classification. From Step 3, the procedure of division differs from scheme to scheme. It is at Step 3 of the procedure of division that Ranganathans postulational style comes in full play. For instance, in determining the several facets occurring in a Compound Subject, he enumerates five postulates—first facet, concreteness, facet sequence within a round, facet sequence within the last round, stages, and stage cluster, etc. He then goes on to enumerate the several canons, principles which could be made exploit of in Step 4 for arrangement of isolates in a helpful sequence. This led to the exposition of the analytico-synthetic style to classification. The postulational style has, therefore, added a new dimension to the Theory of Classification through providing clarity of idea and action for pursuing the theory and practice of library classification.

A lucid and exhaustive presentation of the postulates enunciated through Ranganathan can be establish in his magnum opus Prolegomena to Library Classification (Ed.3; 1967) which is regarded the world in excess of since one of the seminal contributions to the Common Theory of Library Classification.

**Demonstration in Practical Classification**

The Common theory of classification guided through the postulates and principles enables the classifier to do practical classification easily without any difficulty. Essentially, practical classification involves the identification of the specific subject embodied in the document and translating it into the class number. In other languages, the procedure of translation takes it from natural language into a classificatory language – that is, a language of ordinal numbers. Ranganathan felt that it is convenient to carry out the translation in eight successive steps and to verify the result in the final step through reverse translation. These steps are:

- **Step 0; RAW TITLE:** The more or less expressive title of a-document either establishes on the title page or provided through the classifier in the case of a fanciful title.
- **Step 1: EXPRESSIVE TITLE:** An expressive title which is also described full title is. one expressing all the facets/characteristics of a subject sheltered in the document.
• Step 2: **KERNEL TITLE:** The title resulting from the expressive title through removing all the tools languages and changing each kernel word to its nominative singular form.

• Step 3: **EXAMINED TITLE:** The title in kernel conditions with the respective symbols denoting the nature of its manifestation, i.e., each kernel word with the indication of the fundamental category to which it belongs.

• Step 4: **TRANSFORMED TITLE:** The title resulting from the examined title through rearranging the kernel conditions on the foundation of the postulates and principles governing their sequence.

• Step 5: **TITLE AVERAGE CONDITIONS:** The title derived from the transformed title through replacing each average kernel word with its average word or equivalent average word since given in the Scheme for Classification.

• Step 6: **TITLE IN FOCAL NUMBERS:** The title derived from the title in average conditions through replacing each average (kernel) word with the vital class number or isolate number, since the case may be, since given in the schedules of the preferred scheme for classification.

• Step 7: **CLASS NUMBER:** The ordinal number derived from the title in focal number through replacing the symbol after each focal number through connecting the digit suitable to the succeeding regional number since prescribed in the rules of the preferred scheme for classification.

• Step 8: **VERIFICATION:** The name of the subject arrived from the title at through translating the class number and checking for its equivalence with the raw/expressive title

**Organizations Style**

While Ranganathans style to the structuring of subjects is based on the postulational style, Foskett and Heinalata Iyer individually have examined organizations style to subject structuring. Iyer argues that Ranganathans absolute syntax which gives a building is based on the categorization of concepts and that there are three methods of establishing relationships in the middle of them—reason-effect; probabilistic; and the third and mainly recent being organizations style which is concerned with the interaction of the organization with the habitation. This way of understanding is an analytico-synthetic one. It seems at the overall purpose governing the design and functions of an organization in order to explain its behavior. The organizations style is hierarchic in nature and moves from the scrupulous to the common and also vice versa. Although synthesis cannot be separated from analysis and causality, it is dissimilar in its style. The purpose and its fulfillment are its primary concern. Obviously, then priorities in the fulfillment of its purpose becomes essential, Therefore, the representation of a organization according to its
purposes, its environmental constraints, its actors, their objectives, the functions of the organization, and the sections that perform these functions take on a hierarchic form.

A same row of thinking can be seen in Fosketts thoughts derived form Bertalanffys Common Organization Theory. The thought of an organization is any entity whose features are recognized since the nature of its sections and the dealings flanked by them can be seen in the contribution of Bertalanffy, Kenneth Moulding and Ervin Laszlo. For instance, a bicycle is more than a heap of bits of metal, rubber, plastic and thus on; the relationships set up flanked by these sections changes the heap into the feature appearance of a bicycle and enables it to perform the feature function of bicycle through converting the rotary motion of the pedals into the horizontal motion of the bicycle and the passenger beside the road. A committee is more than a collection of single individuals.

Further, an organization may also be a constituent section of another organization of a higher order of organization. Therefore, a word is an organization of letters organized in a sure method. A sentence is an organization of languages organized in a scrupulous sequence, and a paragraph is an organization of sentences. A book is an organization of paragraphs and a library is an organization of books. Therefore, we have in the real world, which gives the subjects for documentation, an organization of organizations in an order of rising complexity of sections and dealings. Applying this concept to schemes of classification will produce on ordered organization which strongly resembles the scheme produced in outline through Dhalberg. Foskett, based on his research, believes that there is plenty of proof to illustrate that we cover the whole knowledge through relating subject analysis, or classification, to a common theory of organizations.

Organizations Style to Fundamental Categories

In a common classification for documentation any organization can be named since a vital subject, in DRTC conditions, because organizations also can be examined through facet analysis. The organization itself, measured since a whole, becomes the Personality. Its constituent sections and the dealings flanked by them become the Matter and Power, which Foskett calls Power A. The dealings of the organization with its habitation are all procedures, which he calls Power B. The other organizations in the habitation, which react with the original organization, are mediators or, in Ranganathans own conditions, Second Round Personality of course, one require not accept Ranganathans conditions. But, this has been done in order to show how appropriately the organizations theory fits the scheme of the greatest contributor to classification as Bliss and Dewey.

Likewise, Iyer believes that any organization can be looked at in conditions of sections and units. She defines Personality in conditions of its unique regular and specified responses to its habitation, and these responses involve the properties of an individual. The properties transform or are made to transform due to external action in conditions of legroom and time;
hence, the thought of property, action, legroom and time. The specific connotations of these embedded categories may he delineated further.

Practical Implications of Organizations Style

The question then is:

• What are the practical implications of the organizations style to documentary classification?

The main purpose of any scheme of classification is to organize documents in a method that creates sense to specialists in each field. This requires not necessarily be a useful order, as one and the similar specialist may style the literature differently each time. Though, the order arrived at necessity create sense, i.e., the specialist necessity be able to recognize the foundation of the order. In other languages, while specialists seem at knowledge from the point of view of their own subject, librarians and fact professionals seem at classification from the perspectives of the whole universe of knowledge. Therefore the scheme for documentary classification, necessity is more than merely a collection of specialized schemes: this would not be an organization in itself, it would be no more than a heap of unrelated sections.

The organizations theory, internal dealings flanked by the sections are essential if these sections are to have the organization of an entity capable of subsistence since an integral whole in a scrupulous habitation. In our context the habitation is the library, its documents and services. The aim of the librarian in classifying is to reflect and demonstrate the order and harmony existing in the real world, the universe of nature, including the world of man.

FUNDAMENTAL CATEGORIES, FACET ANALYSIS AND FACET SEQUENCE

Fundamental Categories

In mapping the universe of subjects, dissimilar organizations of classification have adopted dissimilar ways and styles. Ranganathan adopted a systematic process based on sure assumptions which we have described Postulates. The procedure of division that Ranganathan followed recognizes that every subject has a vital facet, i.e., the first context-specifying facet and represented through the concept/word described vital subject (BS), to which one or more isolate thoughts may he attached. He postulated these fundamental thoughts through the word ‘Fundamental Categories. Through going to a dictionary and finding out the meaning of each of the two component conditions ‘Fundamental and ‘Category and then combining the meanings, one cannot understand what the Fundamental Categories (FC) are. The word-cluster forming the word FC is an unbreakable one and can be defined through enumeration only.
Postulate of Fundamental Categories

This postulate There are five and only five fundamental categories—viz., Time, Legroom, Power, Matter and Personality. Explaining these, Ranganathan emphasizes that these conditions and the thoughts denoted through them belong strictly to the context of the discipline concerned. Their significance, in our context, can be seen only in the context of the discipline concerned. This set of FC is, for brevity, denoted through the PMEST.

After identifying vital subjects, the analysis of isolate thoughts going with vital classes has also to be done in a systematic and logical method to produce the desired result. An examination of subjects will reveal that every subject has its dissimilar characteristics and jointly all these present a coherent explanation of the subject.

Exhibit 3.1, Six conditions in the subject of chemistry.

| 1. alcohol | 1. Substance |
| 2. liquid | 2. State |
| 4. combustion | 4. Reaction |
| 5. analysis | 5. Operation |
| 6. burette | 6. Device for |

It can be seen that each of the isolate conditions in the left column belongs to a corresponding category in the right column. Here, object means all substances and state means all states. It so follows that each of the conditions is a category of thoughts and can be regarded since a facet of the subject chemistry. Indeed we can discern this kind of organization of thoughts in any subject. Table 1 shows this. This table lists few vital subjects and the kind of facets that go with each of them respectively.

While designing Colon Classification, Ranganathan discerned that although dissimilar subjects have facets special to them, there is an underlying unity of thoughts when these facets are examined in depth. In each one of the subjects, there is a core set of thoughts that are central to every aspect of the revise of that subject. This underlying of thoughts led Ranganathan to postulate the Fundamental Categories.

Table 3.1: Matrix of Vital Subjects and Their Corresponding Facets
Five Fundamental Categories

These are:

- Personality [P]
- Matter [M]
- Power [E]
- Legroom [S]
- Time [T]

Let us loop at Table I-again in the light of the five Fundamental Categories. Each of the facets, going with the vital subjects, can be regarded since a manifestation of one or the other of the five Fundamental Categories. Figure 1 graphically symbolizes this thought. PME are the categories that operate in legroom-time configurations.

Fig. 1. Generalized facet building for subjects according to Ranganathans postulate of vital subject and fundamental categories
For instance let us believe a wooden table in relation to the vital subject furniture production. Here table with its separate form, volume, utility, etc., is the core thought and is central-to every other thought that goes with it. Hence, it is to be regarded since a member of the facet furniture, which in turn can be regarded since P. The wood that has gone into the creation of the table can be regarded since the manifestation of M. The processes and behaviors that are necessary to get the finished product could be regarded since the manifestation of E. That the table is in the premises of IGNOU in Delhi symbolizes the concept legroom and so facet S and. it is, there in 1997 which symbolizes the facet T. Although this, instance is an in excess of-simplification of the way of analysis, it explains the vital thoughts of Fundamental Categories fairly clearly. Let us now attempt to get a formal explanation of Fundamental Categories (FCS).

Time

The FC Time provides the least difficulty in identification. It is used in accordance with what we commonly understand through the word. The usual Time isolates thoughts such since millennium, century, decade, and year and thus on is its manifestations. Time isolates of another type—such since, day and night, seasons such since summer and winter, and time with meteorological excellence such since wet, arid, snowy, stormy, etc., is also taken since a manifestation of the FC Time. Few examples of titles presenting the Time unit are given below:

- Superconductivity in 1997
- Winter sowing of wheat
- Night journey through trains
- Technical advances in the 20th century
- Revise of astronomy through the millennia

In classification schemes like CC, UDC, etc., time schedules are listed separately since Time Isolates or Chronological divisions or Featured Time Isolates these general isolates happen in several subjects.
Legroom

The FC Legroom comes next to Time. Normally, there is no difficulty in its identification and is represented in mainly schemes of classification. It is in accordance with what is commonly understood through the word. It comprises geographical isolate thoughts like continents, countries, states, districts, taluks, municipalities, cities, villages; water formation and physiographical isolate thoughts such since oceans and seas, deserts, prairie, rain-forest, plateau, mountain, rivers, canals; climatologically zones, tropics; regions engaged through population groups, such since municipality, city, etc. All these are taken to be a manifestation of the FC Legroom. The following are examples of titles wherein Legroom Isolates are present.

- Textile industry in Canada
- Mountain ranges of India
- Air-conditioning in the tropics
- Public library services in village
- Political conflicts relating to the Indian Ocean
- The Ganga cleaning project

It is clear that the manifestation of FCs Time and Legroom can be easily understood and presents no difficulty, usually, in their identification. In several cases, they can be recognized from the titles of documents themselves.

Power

The manifestations of Power are usually actions. They connote dynamic actions, such since, doing, changing, evaluating, determining, `forecasting, analysis, etc. The action may be in the middle of and through all types of entities—innanimate, animate, conceptual, intellectual, and intuitive. The identification of the FC Power is a small more hard than that of Time or Legroom. Since matter of information, the distinction flanked by the manifestation of Power isolate and Matter Property isolate poses troubles mainly due to action-associated thoughts. It has been establish that two clusters of attributes can be deemed to be manifestations of Matter (Property). They are:

- Isolate thought denoting a static attribute that is an action-associated attribute doing few feature function-common or specific-or a behavior of an entity or an organization.

For instance, Function, Physiology and Manage. On this foundation an isolate thought such since Manage occurs since a facet in the subject Management because; it denotes a function
of management. But, on the other hand, the isolate thought Manage occurring since a facet in the subject of Manage of the diseases of the human body is deemed to be a manifestation of Power. Here Manage does not denote a function of anyone deemed to be a dynamic attribute of the core entity. Therefore, it is not a manifestation of Matter.

**Matter**

The identification of the FC Matter, is more hard than even Power, Its manifestations are taken to be of two types—Matter-Material and Matter-Property. Viewed from the angle of Classification, Matter-Material ranges from chemical units or raw materials from one end to finished products at the other end. There is a series of intermediate levels, connecting these two ends. For instance, cotton is a raw material in the context of garment production which is a finished product. Cotton fabric is at the intermediate level. Cotton, though, is the ultimate crop product in the context of agriculture.

According to Ranganathan’s school of idea, properties of things, persons, etc., are also deemed to be manifestations of Matter. Isolates such since variance, intensity, wave length, height, weight, volume, etc., are regarded since manifestations of Matter. Here, are few examples of titles displaying Matter Isolates.

- Density of solid
- Ink excellence in printing
- Rubber excellence in the manufacturing of mattresses
- Electric current resistance of superconductors

**Personality**

The Fundamental Category personality presents the greatest difficulty in identification. It is too elusive. So, Ranganathan had suggested adopting the Way of Residues for identifying Personality Isolate in the facet analysis of a Compound Subject. If a sure manifestation is easily determined not to be one of Time, Legroom, Power, or Matter, it is deemed to be a manifestation of the FC Personality. This is thus; there is five and only five FCs. The application of this way of residues, though, is not infallible. But experience will lead to the establishment of reflex action in recognizing this FC manifesting in any isolate thought.

Nevertheless, later developments have suggested that it is helpful to recognize the manifestations of FC Personality first and then the manifestation of the other FCs. Experience in the design of depth schedules suggests that it is possible to identify a core concept in compound subjects going with a vital subject, such since human mind in psychology, human body in medicine, etc. Such a core concept is deemed to be a manifestation of FC Personality. The attributes of such a core concept can be many. A concept helps to determine the pattern of
sequence of concepts. It helps in determining the relative degree of affinity of subjects going with dissimilar vital subjects. Greater weight age will have to be given in relation to the affinities in the middle of core concepts. The core concepts in their role since manifestations of the FC Personality act since leading sections of the organization. Therefore, to search for this leading section core concept should be the best way of recognizing the manifestation of the FC Personality.

In other languages, **Personality** is a central section of the whole subject, encompassing a range of related thoughts. **Crops** in agriculture, **natural clusters** of plants in botany, animals in zoology, the **Society of people** in history, **substances** in chemistry, and **social clusters** in sociology are few of the best examples to understand and comprehend the FC **Personality**.

Examples of tides displaying Personality Isolates are:

- Quantitative analysis of Organic Compounds
- Economics of Steel Industry
- Cotton bleaching in hydrogen peroxide
- History of Indian people
- Cancer of Lung
- Revise of anger in Women
- Sugarcane yield in Uttar Pradesh

**Facet Analysis**

**Subject Analysis by Facet Analysis**

A facet is an aspect of a subject. Facet analysis means an analysis of a subject into its characteristics obtained on the foundation of a systematic application of a set of features. Facet analysis of a subject results in the formation of clusters of classes. Let us show this with an instance: In analyzing the subject Toy Production, we can discern that Toys, being the ultimate product manufactured, is one of its facets; the Materials used in the creation of toys is another facet and the Procedure of manufacturing toys is yet another facet. Therefore, the Toys facet will include a number of clusters and subgroups; same is the case with the Material facet and Procedure facet. The chart 3.2 given here will further clarify this:

Chart 3.2. Toy Production
We have divided Toys into a number of subgroups on the foundation of the application of a set of features; likewise Materials used in the creation of Toys have been divided to produce a number of subgroups and thus also the Procedure of production of Toys has been divided to result in a number of subgroups. Each of these subgroups could be further divided to form sub-subgroups till a point is reached when no more division would be possible. These subgroups and the sub-subgroups since well since the members of each one of these clusters are all arranged systematically in a helpful order and displayed in a classification schedule which serves since a tool for classification.

It is clear that all subjects can be broken up into their facets applying suitable features for the purpose of division. We should also note that facet analysis is independent of any organization of classification. The purpose of such division of subjects into their facets is to obtain a helpful order in classifying documents on the foundation of their subject contents for organizing them on library shelves, in catalogues and in bibliographies and such other apparatus of storage and retrieval of fact.

Therefore, facet analysis, according to Ranganathan, is Analysis of a subject into facets according to the postulates and principles stated for the purpose. In the languages of Palmer and Wells it...means the analysis of a specific subject into facets produced through the application of features.
The earlier schemes of classification were enumerative in nature and the whole universe of subjects was systematically divided into classes and sub-classes and resulted in readymade class numbers. In contrast, Ranganathan adopted the faceted style wherein, instead of enumerating all subjects of past, present and anticipatable future, it would be bigger to enumerate the vital concepts or units or descriptors. At the time of classification of documents depending on the subject concerned -easy, compound, intricate—the concepts/descriptors can be examined and then synthesized in an suitable manner resulting in class numbers on behalf of the subject(s) discussed in the documents. While the facet analysis style is adopted through the classifications in desiring classification schemes, the classifier adopts it for classifying document.

**Colon Classification and Facet Analysis**

In the middle of the organizations of library classification, it is in Colon Classification that we see the explicit application of facet analysis in full measure. Ranganathan urbanized his postulate of Fundamental Categories from the intensive analysis of subjects into their facets. In information, in the first three editions of Colon Classification, the Fundamental Categories of PMEST had not featured. After cautiously learning the types of facets in dissimilar subjects, Ranganathan was able to set up that they could be accommodated in Five Fundamental Categories, despite their evident surface differences. In subsequent editions of CC, the Postulate of Fundamental Categories has been used to design schedules for every, vital subject. CC is regarded since a Freely Faceted Classification Organization because it is the nature of subjects that determines their facets which are fitted into the framework of postulates and not based on any predetermined facet building. The enumeration of isolates for each class, the general isolates, the legroom and time isolates, the language isolates, etc.,—all these have appeared by the Principle of Facet Analysis.

Applying the postulate of Fundamental Categories of Ranganathan to the subject `Toy Production we may regard

- Toys since a manifestation of Personality
- Materials since a manifestation of Matter
- Production since a manifestation of Power
- Legroom and Time can be added when warranted

If the title Treatment of Lung Disease in India in 1997 is examined, it results in the following facets:

- **Vital Subject** : Medicine
- **Personality** : Lung
- **Matter** : Disease
Power  :  Treatment
Legroom  :  India
Time  :  1997

_Dewey Decimal Classification and Facet Analysis_

In Dewey Decimal Classification, there is clear indication of the implicit exploit of Facet Analysis for the design of the classification organization. In the Editors Introduction to the 19th edition of DDC, it is stated, In all classes unless a dissimilar sequence is prescribed, arrangement is first through mainly specific discipline and mainly specific subject under it, then through region of specification, then through time specification if the schedules permit then through form of presentation.

_Universal Decimal Classification and Facet Analysis_

The Universal Decimal Classification (UDC) has adopted the vital building of DDC but has urbanized on its own philosophy, policies and principles. The facet building of UDC is much more explicit than it, is in DDC. Few of its faceted characteristics are given below:

- General auxiliaries of Lay, Race and Nationality, Time, Points of View, etc.;
- Facet indicators Colon (:) Square Buckets() Double Colon (::) to combine two or more facets;
- Special auxiliaries to introduce facets peculiar to a given vital class with specific facet indicative;
- Availability of a facet division for application to any class which warrants such division. This is somewhat same to the provisions in DDC.

_Facet Sequence_

We have thus distant been discussing an analysis of subjects into their facets. But the purpose of such analysis is to synthesize the facets-in a chosen order to be helpful for document storage and retrieval. Thus the end objective of analysis is to set up an order of synthesis of the facets. Without this intensive analysis, it would be hard to set up a rational order of synthesis. Indeed facet analysis and facet synthesis are the two faces of the similar coin, the one has no purpose without the other.

The question now arises is what should be the sequence of facets? Is there any single order through which the sequence of facets could be recognized which is mainly helpful for the purpose of document storage and retrieval?
In the instance Toy Production, we recognized three facets, viz., Toys (A), Materials (B) and Procedure (C). The following are the six methods of arranging these three facets:

- Toys, Materials Procedure : ABC
- Toys, Procedure, Materials : ACB
- Materials, Toys, Procedure : BAC
- Materials, Procedure, Toys : BCA
- Procedure, Toys, Materials : CAB
- Procedure, Materials Toys : CBA

If there are only two facets, there are two methods of arranging them viz., AB or BA. If there are three facets, there are six methods of arranging them. If there are four facets, there are 24 methods of arranging them. If there are five facets, there, are 120 methods of arranging them. Obviously we have to choose only one in the middle of the several choices accessible, since we cannot have all of them. How to choose one order in the middle of the several is the question.

**Facet Sequence in Colon Classification**

After determining the several facets cc-curing in a Compound Subject, one should arrange them in a helpful sequence. For this purpose, Ranganathan enunciated five postulates. These are:

- Postulate of First Facet
- Postulate of Concreteness
- Postulate of Facet Sequence within a Round
- Postulate of Facet Sequence with the Last Round
- Postulate of Stage and Stage-Cluster

**Facet Sequence in Dewey Decimal Classification**

DDC does not specify any facet sequence in its schedules of compound subjects, although it uses implicitly the principle of facet analysis. But, long rules have been provided throughout its schedule for classifying documents, which demand a treatment of by facet analysis and synthesis.

Agriculture and Related Technologies have been divided first through crop manufacture, then through plant injuries, diseases, pests and then through individual crops since given below:

- 630: Agriculture and related technologies
- 631: Crops and their manufacture
- 632: Plant injuries, diseases, pests
- 633: Field crops
Now, a document on **Harvesting of Peaches** could either be classed in 631.55 giving preference to Harvesting or under 634.25, giving preference to Peaches. But the specific subject of the document needs a combination of the two, viz., the scrupulous crop and harvesting. Rules given under 634.25 (Add since instructed under 633-635) precisely indicate that the two facets could be combined, drawing the subdivisions of 631 on behalf of harvesting to arrive at 634.255 which stands for Harvesting of Peaches. In this method, throughout the schedule, rules have been provided to combine facets directly without any connecting symbol or with a connecting symbol of Zero (0). But the citation order is set through the organization and is not necessarily based on any stated principle.

In addition to the set of rules prescribed at several spaces in the Schedules, DDC suggests a Citation Order Formula when no rule has been provided. The facets and the sequence or citation order suggested are given below:

- Things
- Types of things
- Sections of things

Materials from which the Things, Types and Sections are made, Properties of the Things, Types, Sections, Materials Procedures within the Things, Types, Sections, Materials Operations upon the Things, Types, Sections or Materials Mediators performing such Operations. The rule says:

- Apply the citation order formula which will usually prove to be reasonable and helpful.

**Facet Sequence in Universal Decimal Classification**

Although there is no specific citation order or facet sequence given in UDC, either in its introduction or anywhere in the Schedules of classes, a Citation Order has been recommended through Jack Mills in his Guide to Universal Decimal Classification which is since given below. Things, Types, Sections; Materials:

- Properties;
- Procedures;
- Operations;
- Agent.
The General and Special Auxiliaries with their specific facet indicators give full scope to apply facet synthesis wherever necessary.

Particularly the relation signs Colon (:), the Square Brackets [ ] and the Double Colon (::) facilitate combination of facets: For instance, for classifying a document Virus diseases and indoor plants, the schedule gives distinct spaces for virus diseases and indoor plants, since 635.91 and 632.38. But they can be combined through the relation sign colon (:) to get a class number since 635.91:632.38. This can be reversed since 632.38:635.91, creation virus diseases the first facet and indoor plants the second, if a library prefers this sequence. But if a Double Colon (::) is used for the combination, the reversing device would not be allowed.

Square Brackets [ ] since a facet combinatory is used to indicate a scrupulous chosen order of facets. For instance: Indoor anemones (anemones are a type of indoor plants) get the class number 635.91:582.675.1(582.675.1 standing for anemones), But if a library wants to gather everything on scrupulous plants jointly, under the common heading, Horticulture, it might transform the above number to 635.91 [582.675.1] to create the main facet the individual plant with indoor since a secondary facet.

This principle is recognized since Flexibility in facet citation. This is acclaimed since strength but it could also be viewed since an undesirable characteristic if libraries by UDC chase dissimilar facet sequences.

The Special Auxiliaries also provide scope for facet combinations. There are three kinds of special auxiliaries which are by facet indicators (Hyphen (-) Point Zero (.0) and the Apostrophe O. The Hypen and Point Zero are used to introduce a facet peculiar to a given vital class.

The apostrophe is at present used with a rather dissimilar meaning in chemistry and same subjects where it is used to indicate synthesis of material units since well since notational.

**Few Common Observations**

Colon Classification is backed through a theoretical foundation for fixing the facet building of its schedules. While this theoretical foundation may be subjected to criticism, it is essential to have a theoretical foundation without which the order of arrangement of classes would suffer. Framing ad hoc rules for by facet analysis and synthesis, both DDC and UDC are not able to get a mainly desirable filiatory sequence of classes. The policy of DDC, while recognizing its weak building, is not to introduce any vital structural transforms which might endanger its exploit through many thousands of libraries throughout the world, but meet the problem through providing rules for facet analysis wherever necessary. UDC, having a greater facility for facet analysis and synthesis, suffers from its version of DDCs building which restricts its scope of the exploit of the facet principles of analysis and synthesis. In recent times there
urbanized a generation gap in the middle of the three classification organizations. With DDC or UDC, it is not possible to create any drastic transform to meet the expanding demands of bibliographic classification. Future classification organizations would benefit from Ranganathans contribution to theoretical base to library and bibliographic classification.

**PHASE RELATION AND COMMON ISOLATES**

**Vital Compound and Intricate Subjects**

It is useful to begin with the definitions of Vital Subject (BS), Compound Subject (CdS), and Intricate Subject (CxS) in order to get a clear notion of stage analysis. A **Vital Subject** is a subject which:

- Is enumerated in the schedule of BS;
- Cannot be expressed since the Compound Subject of any of the existing BS, i.e., a subject without any isolate thought since a component;
- Is evolved through one full cycle of the spiral of scientific way since propounded through Dr. S. R. Ranganathan. They also exhibit dissimilar manners of formation of subjects;
- Calls for schedules of special personality, matter and power isolates;
- Has little specialization-academic and/or professional segmentation. The indicators for this are:
  - Subsistence of professional societies
  - Degree course
  - Periodical publications
  - Whole books on the subject

There are many diversities of BS. The correlation of manners of formation of BS to the types of BS is summarized since follows figure 3.1.

**Fig. 3.1. Kinds of Vital Subjects (BS)**

Primary Vital Subjects are the core frame for all other types of BS. **Compound Subject** (CdS) is a subject with a BS and one or more isolate thought (IsI) since components. e.g.,

- Chemistry of alcohol-chemistry (BS),
- Alcohol (IsI)
Intricate Subject (CxS) is a subject shaped through a combination of two or more subjects—vital or compound. e.g.,

- Common relation flanked by economics and sociology
- Economics for statisticians
- Economics convinced through political factors

Stage Relation

A stage relation is the assembling jointly of two or more of

- Subjects (Vital or Compound)
- Isolate thoughts
- One and the similar facet, or isolate thoughts in one and the similar array).

Assembling is done to express one or the other of possible dealings flanked by the components of the assembly. The result is an intricate subject, intricate isolate thought, or an intricate array isolate thought, since the case may be.

Each component in the assembly, in its turn, is described a stage. They are described stage 1 and stage 2 since determined through their sequence in the assemblage.

Kinds of Stage Relation

There are three kinds of stage relation. The relation may be flanked by

- Two or more subjects, recognized since Inter-Subject Stage Relation; or
- Two or more isolates within one and-die similar schedule of facet isolates, recognized since Intra-Facet Stage Relation; or
- Two or more isolates within one and the similar array of isolates, recognized since Intra-A Stage Relation.

Inter-Subject Stage Relation

In inter-subject stage relation, we notice an interaction flanked by two subjects. Believe, for instance, the following titles:

- Sociology for economists
- Statistical analysis in library management
- Weather forecasting for the farming of the rice crop

In the first instance, two main classes are involved; sociology and economics. The specific subject of this title is sociology, expounded to suit the special requires of economists. In the second instance, the statistical analysis is a tool subject used in managing libraries. Here, the two subjects involved are library science and statistics. The two compound subjects in the third instance are weather forecasting from meteorology and rice farming from agriculture.

**Intra-Facet Stage Relation**

In intra-facet stage relation, we see two isolate thoughts of the similar facet interact to form, an intricate subject. For instance:

- Relative revise of Buddhism and Jainism
- Variation flanked by democracy and oligarchy
- Power of aristocracy on rural folks

In the first instance, the relative revise is flanked by two religious faiths belonging to the facet religion. In the second, the revise is flanked by two isolates of the similar facet kind of state in political science.

In the third instance, what is studied is the power of aristocracy on rural people. Both these isolates belong to the similar facet social clusters in sociology. The following diagram 3.1 displays the infra-facet stage relation. The asterisk spots indicate relation.

Diagram 3.1. The Infra-facet Stage Relation
The component which is the primary focus of exposition in a two-phased subject is referred to since the primary stage and the second component that interacts to expound the first stage is recognized since the secondary stage.

**Intra-Array Stage Relation**

In intra-array stage relation isolate thoughts belonging to the similar array of a facet are in a relation with each other. Intricate subjects of this kind are illustrated below.

- Comparison of rural and urban life
- Variation flanked by laws relating to dacoity and theft
- The connection flanked by politically handicapped and socially handicapped persons in psychology

In We examples, be relation is flanked by isolates of the similar array of a facet. In the first instance, isolate thoughts rural and urban belong to the similar array of the facet social clusters in sociology. In the second instance, isolate thoughts dacoit and theft belong to the similar array of the facet legal entity. In the third instance, isolates politically handicapped and socially handicapped belong to the similar array of the facet entity. These three concepts are presented in figure 3.2 here.

Fig. 3.2. Three Concepts of relation is flanked by isolates of the similar array of a facet
**Types of Stage Relation**

In colon Classification six types of Stage dealings have been recognized since given below with their indicator digits.

- Common
- Bias
- Comparison
- Variation
- Tool
- Power

Table 3.2. The indicator digits
Common Stage

Common Stage Relation denotes a more or less complete relation flanked by the primary and secondary stages, viz., inter-subject, intra-facet or intra-array.

The sequence of the stages is determined on the foundation of the sequence of classes given in the classification schedules of any of the schemes of classification. The sequence of the two stages is given according to Colon Classification.

- Relation flanked by Religion and Philosophy (Inter-subject) Religion—Philosophy (Sequence in CC) Q&aR
- Relation flanked by anatomy and physiology., (Intra-facet) According to CC, Anatomy would precede Physiology; hence the sequence of the two stages is since follows: Medicine, Anatomy, Physiology L;2&j3
- Relation flanked by Audio and Visual studying in Education. Here again, according to CC, Audio would precede Visual and hence, the sequence of the two stages is Education, Studying, Audio, Visual T;416&t7

Bias Stage

The Bias Relation flanked by two subjects designates that the exposition of one subject (Stage 1) is biased towards another subject specialist (Stage 2). This means that the exposition of a subject is specially attuned through the selection, arrangement, choice of illustrations, etc., of the topics since per requires of a specialist. Here, Stage 1 is recognized since Biased Stage and Stage 2

- Statistics for librarians: BT&b2
- Statistics for Engineers: BT&bD
- Statistics for Biologists: BT&bG

The sequence of the three subjects of the Biasing Stage is in accord with the CC. There seems to be no literary warrant to provide examples of intra-facet and intra-array dealings.
Dewey Decimal Classification, for the first time in the 18th edition made provision for the exploit of stage relation. It is done through the Average Subdivision -024. The numbers for the above subjects in DDC will be

- Statistics for librarians: 310.24092
- Statistics for engineers: 310.2462
- Statistics for biologists: 310.24574

In UDC the connecting symbol for stage relation is colon though UDC does not create any variation flanked by stages of stage relation. For all kinds of relation there is only one connecting symbol. The numbers for the subject will be:

- Statistics for librarians: 31:02
- Statistics for Engineers: 31:62
- Statistics for Biologists: 31:573

The sequence of the three subjects of the Biasing stage is in accord with the CC. There seems to be no literary warrant to provide examples of intra–facet and intra-array dealings.

**Comparison Stage**

This Stage Relation denotes cases where two subjects are compared. Believe the following examples:

- Comparison flanked by plants and animals (Inter-subject): Botany—Zoology (Sequence in CC) I&cK
- Comparison flanked by morphology and physiology (Intra-facet): I;2&m3
- Relative psychology of man and woman (Intra-array): Psychology, Man, Woman (Sequence in CC) S,55&v6

**Variation Stage**

This Stage Relation denotes cases of documents where the variation flanked by two subjects is expounded. For instance:

- Variation flanked by political science and history (Inter-subject): History—Political Science (Since in CC) V&dW
- Psychological variation flanked by sick and abnormal persons (Intra-facet): Psychology, Sick, Abnormal (Since in CC) S, 4&m6
- Variation flanked by meditation and worship (Intra-array): Religion, Worship, Meditation (Since in CC) Q;413&w4
**Tool Stage**

This Stage Relation trades with cases of documents where one subject is used since a tool to expound the other. For instance:

- Literature Through Art: A New Style to French Literature (Inter-subject): O,122&eN
- Classification since a tool to revise circulation service (Intra-facet): 2;8&p5
- Rural sociology since a tool to revise urban sociology (Intra-array): Y,342&x1

This stage Relation has been recognized since one of the stage dealings to classify documents which display such dealings. This device, though calls for further investigation to assess its full implications. It is also referred to since Exposition Stage.

- Power of nourishment on education (Inter-subject): T&gL;573
- Power of intellectuals on ruling classes (Intra-facet): Y,417&r53
- Power of direct tax on indirect tax (Intra-array): X 72,01 &y2

The sequence of the two stages in the two stages in the three examples is:

- Education  Nourishment
- Ruling Classes  Intellectuals
- Indirect Tax  Direct tax

The subject that is convinced is in the First Stage through the subject that influences. Thus distant, six types of stage dealings have been recognized. It is quite possible that some more may be encountered. The noteworthy point is that a way has already been provided, since in Colon Classification, which may be helpful for handling intricate subjects of the future.

Such elaborate devices exist only in CC. UDC and DDC have not made provision to distinguish dissimilar kinds of dealings. Through UDC has provided a single connecting symbol for all kinds of relation, though, some in DDC we can recognize intra-facet relation like:

- Foreign dealings flanked by India and UK = 327.54Q41

In this case India (54) and UK (41) are from the similar facet and hence can be stated since intra-facet relation since suggested, create a relative revise of the Stage Relation in all the three schemes.
Stage analysis and synthesis have been urbanized to accommodate interdisciplinary subjects who have been steadily rising in the past many decades. Dewey Decimal Classification has provided some rules and instructional guidelines to classify intricate subjects. The Universal Decimal Classification has made limited provisions for handling intricate subjects. But in the middle of the, three Classification Schemes with which we are concerned in this Course, it is the Colon Classification that has given a full treatment to this region of classification.

Colon Classification

In Colon Classification, stage dealings have been explicitly recognized and categorized into kinds and types. It has provided specific rules for classifying intricate subjects. Presently since facet analysis has given a logical and helpful framework for classifying multifaceted subjects, stage analysis has provided a same frame job to trade with interdisciplinary subjects. These devices have been based on theoretical foundations to obtain a helpful and practical arrangement of documents on library shelves and of entries in catalogues and bibliographies tuned to user necessities.

Dewey Decimal Classification

Dewey Decimal Classification being an enumerative organization of classification, has extremely limited provision for the explicit exploit of stage analysis and synthesis. Its recognition of intricate subjects, though, can be noted in the provision given for classifying such subjects. These provisions are:

- Enumeration of intricate subjects in its schedules: Instance: Enumeration of Science and Religion at 261.55
- Exploit of Average subdivision for Bias Relation

Universal Decimal Classification

In Universal Decimal Classification, the relation sign colon (:) is used to indicate all kinds and types of stage dealings. The similar sign is also used for facet dealings. The following examples show these reports.

- 2:5: Religion and science (inter-subject—common stage relation)
- 51:62: Mathematics for Engineers (inter-subject—bias stage relation)
- 22/28:294.3: Comparison flanked by Christianity and Buddhism (intra-facet—comparison stage relation)
- 595.141:591.142: Variation flanked by easy marine worms and earth worms (inter-array—variation stage relation)
- 7:8: Power of literature on art (inter-subject—power stage relation)
- 8:7: Literate through art, a new style (inter-subject—tool stage relation)

**General Isolates**

Many families of isolates can be recognized within the universe of isolates since sub-universes. These contain families of geographic isolates, featured time isolates, physiographical isolates, action isolates in common, property isolates in common, etc, and Institution isolates can form components of many compound subjects going with each of all or approximately all of the vital subjects. Each isolate in each such family is described a General Isolate (CI). Schedules for each of the families of general isolates are given since a set through themselves in practically every scheme of classification, except for LC and RIC, without any scrupulous vital subject since the context.

**Meaning of General Isolates and their Require**

Ranganathan defines general isolates since an isolate thought denoted through the similar isolate word and represented through the similar isolate number, quite irrespective of the compound subject in which it occurs, or the vital subject with which the compound subject goes. In DDC, it has been explained since a special type of patterned repetition Any subject can be presented in many shapes. It could be in the form of outline, history, theory or dictionary. It could also be in the form of a periodical or a handbook. It could since well be a presentation of how to revise or teach that subject. These general shapes and manners of presentation are described average subdivisions.

It has been establish that sure types of concepts stay recurring and may be establish in several subjects, e.g., proceedings, periodical, dictionary or encyclopedia. These are all referred to since shapes of presentation. Publications like Journal of Economics, Encyclopedia of Philosophy and Proceedings of All India Library Conference have their own subjects. All these subjects, though, are presented in scrupulous shapes. The shapes involved here such since journal, encyclopedia and conference proceedings are commonly referred to since outer shapes. There are inner shapes also, i.e., shapes of style to the subject. For instance, theory, revise and teaching, history and biography are several styles to the subject and they are recognized since inner shapes.

We also discover that subjects are treated in the historical and geographical contexts, which are usually described through the conditions time and legroom respectively. Therefore,
inner and outer shapes of presentation and historical and geographical treatment are characteristics general to all or mainly subjects. They, so, recur throughout the scheme of classification. In library classification, such recurring concepts are standardized. This standardization results in economy of mass, since it restricts the length of the schedules in a scheme through listing these general characteristics only once. Incidentally, standardization also lends mnemonic value to the recurring concepts, since they are uniformly expressed through the similar set of symbols. Hence, in a scheme of classification, distinct tables are provided for general isolates and directions are given for their application.

**History of General Isolates**

There are many things which go to the credit of Melvil Dewey. The concept of general isolates is one of them. In the beginning he described them form divisions. They were first introduced in the second edition of DDC brought out in 1885. As then they have undergone many transforms. The name form divisions sustained up to the twelfth edition of DDC published in 1922. This name was changed to general subdivisions in the thirteenth edition appearing in 1932. These general subdivisions were listed under three dissimilar categories, viz., miscellaneous general subdivisions, viewpoints and form divisions. This whole set reappeared since presently form divisions in the fifteenth and sixteenth editions and was renamed since average subdivisions in the seventeenth edition. The seventeenth edition also recognized legroom and time isolates since general isolates and listed them since such. Until the publication of the seventeenth edition, the history schedule had been used for legroom isolates.

In UDC, general isolates are described auxiliary subdivisions. Broadly, there are two kinds of auxiliaries in exploit in UDC: general and special. Auxiliaries of form in UDC are like the average subdivisions of DDC. Legroom and time isolates are treated since general auxiliaries and listed separately. The exploit of auxiliaries in UDC is a significant aspect in number structure.

In the first edition of CC, there were three dissimilar schedules for general subdivisions of which legroom and time were two. The number of general subdivisions was little initially. It was only in the fourth edition of CC that these were recognized since interiorizing and posteriori sing general subdivisions. In the fifth edition, they were named since general isolates. After many transforms through successive editions an exhaustive list of general isolates has appeared in the seventh edition of CC.

**Types of General Isolates**

According to the definition of the word General Isolate Thought, the dissimilar types of general isolates contain language isolate thoughts, time isolate thoughts, legroom isolate thoughts
and interiorizing general isolate thoughts. There can also be general personality isolate thoughts, general matter isolate thoughts, and general power isolate thoughts.

It may be noted that in the middle of the manifestations of the Fundamental Categories Power, and Matter, few will be special isolate thoughts and few others will be general isolate thoughts. The matter general isolate thoughts consist of properties and values and not of materials. Though, these general property isolates and power general isolate thoughts too require enumeration. Further, it is establish that power general isolate word and matter general isolate conditions are often establish coalesced into a single word in the documents; one has to distinct them. Also, one and the similar general isolate thought is not always denoted through the similar word at all times; their reduction to a single word is time-consuming.

**General Isolates in Colon Classification**

The general isolates in CC are quite dissimilar from those studied in DDC. Though the purpose and require for general isolates are the similar, the number of general isolates and their application differ in CC. It has clearly differentiated general isolates. General isolates are defined in CC since those which denote the similar isolate word and are represented through the similar isolate number. The family of general isolates in CC is also extremely big. There are many kinds of general isolates which can be seen at a glance from the diagram 3.2 given below.

**Diagram 3.2. Kinds of general isolates**

Up to the sixth edition of CC there had been a clear distinction flanked by interiorizing and posteriorising general isolates. Anteriorising general isolates were attached to a host (core) number without any connecting symbol, whereas posteriorising general isolates were attached with a connecting symbol. In the seventh edition that distinction has been removed. Though, they have retained the similar function assigned to them in the earlier editions.

**Anteriorising General Isolates in CC**

Anteriorising general isolates mean that they have precedence in arrangement in excess of the class numbers to which they have been attached. In short, the anteriorising general isolates
have the anterior value. To explain this with an instance, in the arrangement of class numbers V, 54 and, 54 a, V, 54 comes before NF, 54 in the sequence of classes. Documents such as bibliographies, encyclopedias, periodicals and histories of a subject are style documents, and since such, they necessarily precede other core documents on the subject in the arrangement on the shelves.

**Anteriorising General Isolates**

Applicable before legroom facet:
- a—bibliography
- c—concordance
- d—table
- f—atlas
- k—encyclopedia
- m—periodical
- p—conference proceedings
- v—history
- w—biography

Applicable after legroom facet:
- r—periodical management statement
- s—statistics (serial)

**Anteriorising General Isolates**

Applicable after time facet:
- T—commission statement
- t4—survey
- v—source material
- v46—genealogy
- v6 chronology

**Posteriorising General Isolates in CC**

Posteriorising general isolates are of three kinds, personality, matter and power general isolates. They are to be attached to the host (core) class with their respective connecting symbols, viz., comma, semi colon and colon. A personality general isolate stands mainly for organizations, few of which are since follows:
- f—investigating—institution
Matter, Power, Legroom and Time Isolates in CC

The number of power general isolates in the sixth edition of CC was little. The matter general isolates seem for the first time in the seventh edition.

Legroom and time are regarded since general isolates and are listed separately. They can be attached to any host class number whenever warranted.

Application of General Isolates in CC

We have seen that in CC there are dissimilar kinds of general isolates. The application of each of these kinds is illustrated below with appropriate examples.

Anteriorising General Isolates

The following examples show the exploit of anteriorising general isolates:

- C aN7: Bibliography of physics books up to the 1979s
- C k73;N3: Encyclopedia of physics, first published in the USA in the 1930s C m56,N5—Physics journal first published in the UK in the 1950s
- C p44,N7: Proceedings of physics, conference held first in the 1970s in India
- C 1v: History of physics
- C wM88: Biography of a physicist, born in the year 1888 (C.V. Raman)

Note that the connecting symbol double inverted comma ( ) in the examples has no ordinal value. All the numbers have precedence in excess of the vital class C (physics). The anteriorising general isolates are applied before the legroom facet. Now let us see some examples of anteriorising general isolates which are applied after the legroom and time facets.

- T,4.44 r: Statement on adult education in India.
- T,4.44 s: Statistics on adult education in India (Published frequently, a serial).
- T, 4.44N75 t4: Statistics of adult education in India published in 1975 (a stray publication)
The first two are cases of a general isolate being applied after the legroom facet and the last two are cases where it is applied after her time facet. You will also notice that many general isolates in CC have their own facet formula which is shown beside with the general isolate at suitable spaces in the schedules.

**Posteriorising General Isolates**

Under these, we have to revise personality, matter, power, legroom and time general isolates since suggested,, so, take them up one through one in that order.

**Personality General Isolates**

These symbolize organizations or organizations. A personality general isolate is ordinarily added after the legroom facet. The institutional unit in the number can be worked out through what is recognized since the alphabetical or chronological device. The alphabetical device consists of the initial letter of the institutions name used to symbolize it in the number. The chronological device consists of the year of establishment of the institution. The alphabetical device is used when the year is not recognized. The chronological number is preceded through 9, if the institution is a national body. Some examples worked out below will help you to understand the exploit of the personality general isolate.

- Indian Mathematical Society founded in 1931: B.44,g,9N31
- Delhi University: T,18.44,t4,N21.
- Poona Observatory: B9.44,f2,P

Given below is the expansion of the numbers thus since to enable you to know the rules:

- B Mathematics:
- 44: India (all legroom isolates are added with a dot() since the connecting symbol)
- G: Learned body (all lower case Roman letters symbolizes general isolates. An unit added with a comma since the connecting symbol designates personality facet)
- 9N3 1: A national body is represented through 9 and the date of base; N31 is 1931
- T Education :
- T,18: University education. 18 from personality facet under the main class T
- 44.: India
- t4: An institution of higher education. t4 is a personality general isolate.
- N21: Founded in 1921. Delhi University is a localized body and thus 9 are not prefixed.
- B9 Astronomy :
- 44: India
- f2: Observational institution (f2 is a personality general isolate)
Matter Property General Isolates

An exhaustive list of matter property general isolates seems for the first time in the seventh edition of CC. A matter property general isolate is applied with a semi-colon since the connecting symbol.

Power General Isolates

A power general isolate (Exhibit 3.2), is attached with the connecting symbol colon. Since in the previous examples, first a class number suitable to the subject on hand is worked out and then, if necessary, a general isolate to be attached is determined.

Exhibit 3.2: The Power General Isolates

<table>
<thead>
<tr>
<th>ab</th>
<th>- establish, inaugurate</th>
<th>eb</th>
<th>- mixing</th>
</tr>
</thead>
<tbody>
<tr>
<td>af3</td>
<td>- differentiate</td>
<td>eg</td>
<td>- cleaning</td>
</tr>
<tr>
<td>ak</td>
<td>- compensate</td>
<td>ev</td>
<td>- washing</td>
</tr>
<tr>
<td>aD2</td>
<td>- infiltrate</td>
<td>e3</td>
<td>- boiling</td>
</tr>
<tr>
<td>aR</td>
<td>- investigation, research</td>
<td>fZ6</td>
<td>- preserving</td>
</tr>
<tr>
<td>aR2</td>
<td>- observing</td>
<td>p2</td>
<td>- describing</td>
</tr>
<tr>
<td>aF</td>
<td>- evaluation</td>
<td>pR4</td>
<td>- printing</td>
</tr>
<tr>
<td>dl</td>
<td>- designing</td>
<td>u1</td>
<td>- surveying</td>
</tr>
</tbody>
</table>

General Isolates in Dewey Decimal Classification

In DDC, general isolates have undergone many transforms in both nomenclature and presentation. They were spelled out through dissimilar naives in dissimilar editions of DDC. The dissimilar names used thus distant are form divisions, general subdivisions, viewpoint numbers and average subdivisions. From the seventeenth edition onwards they have been described average subdivisions. A complete list of average subdivisions seems since Table I in volume I of the nineteenth edition of DDC. The following are the dissimilar kinds of general isolates in DDC.

- 01: Philosophy and theory
- 016: Indexes
- 02: Miscellany
- 022: Illustrations and models
- 028: Techniques, processes, tools, equipment, material
- 0285: Data processing
- 0288: Maintenance and repair
- 03: Dictionaries, encyclopedias, concordances
- 05: Serial publications
It is, therefore, clear that the numbers are not used self-governing of the core numbers from the subject schedules. Every number is preceded through a dash which merely illustrates that the number never stands alone. The dash is to be omitted when it is added to a core number taken from a subject schedule.

**Connecting Symbols for General Isolates in UDC**

The connecting symbols or indicator digits in UDC play a major role in the structure of class numbers. Since in CC, the indicator digits in UDC reveal the kind of facet used. That is the cause, through in depth classification; UDC has become extremely popular throughout the world.

The general auxiliaries of form are put in parentheses with a connecting symbol naught (0..). They are used more for outer shapes of presentation like dictionary, journal, etc. They are also used for some inner shapes.

A time isolate in UDC compares well with CC. There is provision to illustrate months, days, hours and even minutes. The time isolate is encased in double, inverted commas ( …. ).

The following are some illustrative examples of the exploit of general isolates in UDC.

**General Auxiliaries of Form**

You will discover the exploit of both inner (e.g., history) and outer (e.g., journal) shapes.

- Bibliography on international law: 341(01)
- Dictionary of international law: 341(03)
- Journal of international law: 341(05)
- Teaching of international law: 341(07)
- History of international law: 341(09)

The general auxiliaries of form are put in parentheses with a zero since the connecting symbol.

**General Auxiliaries of Lay**
Like DDC and CC, UDC also gives a fairly exhaustive schedule of geographical isolates. This schedule covers political since well since physiographical divisions. All these are described general auxiliaries of lay. Their application is easy and easily understandable. Some examples are given below for your benefit. You will notice that the lay number is always put in parentheses without any prefix.

- 327(540): Foreign policy of India, where 327 is foreign policy and (540) is India. Bilateral dealings flanked by two countries can also be shown with ease. Therefore,
- 327(540:41): Bilateral dealings flanked by India and the U.K. The number for the second country (41 U.K.) in the above case is joined with a colon.
- 33(540-22): Economic circumstances of rural India where 33 is Economics, (540) is India and (-22) is rural zone (zones or defined regions can be joined through a hyphen to another lay).

### DEVICES IN LIBRARY CLASSIFICATION

**Devices** in library classification may be termed since components used for forming or sharpening

Based on the feature used for this purpose, they are described since chronological device, geographical device, etc. These devices are used through classification organizations wherever helpful and possible and are applicable both in the thought plane since well since in the notational plane.

Usually speaking, the advantages of the devices are that they:

- Avoid enumeration and thereby shorten an array in a schedule, and therefore, the schedule itself;
- Provide autonomy to the classifier; and
- Close automatic conventionality to the canons of constant sequence, helpful sequence,
- Mnemonics, hospitality in array, and hospitality in chain.

On the question of preference of a device, if two or more devices are accessible in a scrupulous lay, the earliest one accessible should be used, unless any other more significant consideration points to the contrary. Though, in few cases it may be required to exploit two or more devices at a time. For instance, in few cases, such since, special component for a language, or approach for fine arts, the components used should be arranged in the middle of themselves in a helpful sequence and the totality of the components should be enclosed in circular brackets.
Kinds of Devices

The following devices have been in exploit in classification organizations for forming or sharpening a facet or a subject;

- Chronological Device (CD)
- Geographical Device (GD)
- Subject Device (SD)
- Alphabetical Device (AD)
- Enumeration Device (ED)
- Devices for Hospitality in Arrays and Chains
- Other devices, such since, Facet Device, Stage Device, Super—Imposition Device, Mnemonic Device.

Devices in Exploit in Classification Organizations

Devices in CC

CC exploits the help of all the devices wherever helpful and possible. The following examples show the exploit of several devices in Colon Classification:

- Chronological Device: It is used for the individualization of :
  - Authors in literature
  - Artificial words
  - Religious sects
  - Diverse organizations in vital classes, such since, physics, medicine psychology, education and economics
  - Styles in fine arts, etc.

  CC has elaborate rules on the exploit of this device.

- Geographical Device: It is used for individualization of :
  - Society in history and law
  - Dialect and jargon of a language
  - Approach in fine arts
  - Many of the anteriorising general isolates, etc.
  - Subject Device: It is used in the individualization of :
    - Few substances in organic chemistry
    - Few structures in architecture
    - Few subjects in sculpture
Special views in metaphysics
Subjects in teaching techniques, and
Industries in economics
Alphabetical Device: It is used for the individualization of:
Jobs of literary and classical authors
Brands of a machine
Strains of cultivars, viruses and bacteria

Enumeration Device: In the Rigidly-Faceted, Approximately-Freely-Faceted and Freely-Faceted versions of CC, enumeration device have been used, but less often than in the other schemes of classification.

**Devices in DDC**

Usually speaking, DDC does not exploit the chronological device. While DDC uses the subject device quite often, it uses the geographical device where it is inescapable and the alphabetical device extremely sparingly. The geographical device is used to sharpen a class number in an enumerative classification like DDC. It uses the geographical device in forming the foci in the society facet of a subject going with history and also in a same manner in law. In other subjects requiring regional treatment, the geographical number is added since a legroom facet. Though, this is not a case of geographical device. In DDC, though, there are fifty subjects directed to be divided like 001-999. These are also cases of the subject device. Since regards the alphabetical device, it was induced in the 17th Edition (1965); it allows it to be used more freely. On the other hand, enumeration device is used mainly widely in mainly of the arrays. Even where the geographical device or subject device is used, each of them presupposes the enumeration device having been used earlier.

**Devices in UDC**

Like DDC, UDC does not exploit the chronological device, but uses the geographical device where it is inescapable and the alphabetical device extremely sparingly though it uses more than DDC. In regard to the enumeration device, UDC like mainly of the schemes for classification uses it mainly widely in mainly of the arrays.

**REVIEW QUESTIONS**

- What is subject representation?
- What is postulation approach to library classification?
- State the advantages of the postulational approach to library classification.
- Explain the Fundamental Category “Energy” with an example.
- Explain the uses and advantages of applying the technique of facet analysis for the subjects
- Define Basic Compound and Complex Subjects with example for each.
- Who introduced the concept of common isolates? When and how?
- What are devices and their advantages?
CHAPTER 4
Study of Selected Schemes of Library Classification

STRUCTURE

- Learning Objectives
- Dewey decimal classification (DDC)
- Comparative study of the 19th (1979), 20th (1989) and 21st (1996) editions the Dewey Decimal Classification
- Universal decimal classification (UDC)
- Colon classification (CC)
- Different versions of colon classification
- Current trends in library classification
- Review Questions

LEARNING OBJECTIVES

After reading this chapter, you will be able to:

- Obtain an insight into the underlying principles and characteristic features of DDC;
- Assess the strengths and weaknesses of DDC;
- Understand the need for and process of servicing a library classification system;
- Know the salient features of the latest electronic version of the DDC known as Dewey for; Windows;
- Assess the suitability of UDC as a scheme of classification for arranging books and developing bibliographic tools like catalogues and bibliographies;
- Know the origin and working of Colon Classification;
- Grasp the underlying principles: of the scheme;
- Get a clear grasp of the theory that has guided the development of Colon Classification from a Rigidly Faceted Scheme to a Freely Faceted Scheme of Classification;
- Obtain an insight into and familiarity with the history of library classification; and
- Understand major developments in DDC, UDC and CC.

DEWEY DECIMAL CLASSIFICATION (DDC)

Genesis of DDC

Melvil Dewey was born in Adams Center, New York, on December 10th, 1851. He was the son of a little storekeeper and, at the age of five, it is said that he rearranged his mother’s larder—which is the lay where provisions are stored—in a more systematic manner. He came to librarianship through a procedure of self education, a some years of teaching followed through
higher studies at Oneida Seminary, Alfred University, and finally at Amherst College. He obtained a post since student library assistant in 1872 at the similar college. In the following year, he put forward a plan for rearranging the library in a more systematic method. He was promoted in 1874 to the post of Assistant College Librarian. In 1876, he anonymously published his classification scheme, which had distant reaching effects. Separately from the classification scheme, which bears his name, he also had several other contributions to his credit. He became the first editor of the Library Journal in 1876, a founder member of the American Library Association in 1876 and later its first Secretary. He also founded the first librarianship school in the United States (Columbia University) in 1887, promoted the average catalogue card (12.5 x 7.5 cm) and took an active interest in all characteristics of librarianship.

First Edition

The publication of a 42-page pamphlet entitled A classification and subject index for cataloguing and arranging the books and pamphlets of a library in 1876, heralded the beginning of both DDC and library classification. One thousand copies of this first edition were printed. It contained almost 1000 classes. It was, though, criticized since being too minute in its subdivisions for a majority of libraries. Within an extremely short time it, nevertheless, became very popular and was soon adopted through several libraries in the United States and other countries. The original 42-page anonymous pamphlet culminated, in the course of time, in a monumental job of in excess of 3,000 pages. In excess of 85 per cent of all kinds of libraries in the USA and Canada exploit DDC. It has been adopted in all five continents of the world.

Salient Characteristics

Dewey was not the first to introduce subject arrangement of books in libraries. He was, though, the first to introduce the following innovative characteristics in subject arrangement:

- The concept of relative site
- Decimal notation
- Detailed specification
- Relative index

Relative Site

It is hard to think of relative site since an innovation today, since the principle is taken for granted now. Dewey introduced it when fixed site was the practice. In those days, books were recognized through their-site on the shelves. A sure number of shelves and a block of accession numbers were allocated to each subject in a library. Each book bearing only the accession number would be placed on a scrupulous shelf earmarked for it according to its subject. The
books were, therefore, recognized through their exact location, room, bay, tier, and shelf and lay on the shelf. These shelf spots were given to books. Once allocated, the shelf spot denoted the permanent home of a book in that library.

This arrangement was not satisfactory. With new acquisitions, it necessitated transforms in the shelves and their marking. This consistent shifting and marking set Dewey in search of a bigger alternative. Finally, Dewey establishes the answer to this problem in his principle of relative site. Dewey ordered subjects in a sequence, assigned a notation to them and marked books, and not shelves, with this notation. It was now possible to interfile new accessions without disturbing the existing sequence. Each book in a library secured a location in relation to other books in the similar subject. I& are aware that notation mechanizes the arrangement of books on the shelves, that is, it assigns a relative site to each book. This relative site could be easily achieved because of another innovation introduced through Dewey, viz., decimal notation.

**Decimal Notation**

The decimal notation used in DDC refers to the principle of dividing each class into ten sub-divisions and each of these sub-divisions into another ten sub-divisions and thus on. This characteristic in DDC equipped it with a tremendous capability for expansion to accommodate minute sub-divisions without the necessity of relocation. The first edition of DDC stopped with the division at the third lay, though it sustained, since suggested through Dewey, to a fourth or fifth lay, if necessary, in the catalogue.

**Detailed Specification**

The relative site, combined with decimal notation, made it easier to specify more detailed sub-divisions. Before Dewey introduced the thought of relative site, the number of subject clusters into which the books in a library could be arranged was severely limited. Once the thought of moving books at any point to accommodate additions was carried, it became possible to specify more detailed sub-divisions. Dewey listed almost one thousand subjects in his first edition. The DDC 19th edition lists 21,504 classes (other than auxiliary tables) with provisions for greater synthesis and is still measured not minute sufficient. Through and big, the evolution of DDC has been one of steady expansion with provision for raising the amount of detail.

**Relative Index**

One of the objections to classified catalogue and systematic arrangement had been the problem of knowing presently where to seem for a book. Dewey provided the solution to this problem in the form of the relative index. His relative index showed exactly where to discover a given topic. Another advantage of the relative index was that it showed those characteristics of a
subject, which the systematic order scattered throughout the scheme. Yet another advantage of Deweys relative index was that it also listed the synonyms in several cases.

These innovations are now taken for granted in library classification. It is extremely significant to keep in mind, though, that it was not thus when Dewey started his job. Deweys scheme was truly contemporary in several compliments. He anticipated several of today developments including the principle of synthesis and facet building, even though he did not recognize them explicitly.

**Subsequent Editions**

In 1885, the second edition of DDC emerged with the title Decimal Classification and Relative Index under which title twelve more editions were published. The second edition was much superior in mass and more detailed than the first.

Twelve more editions emerged throughout the next 57 years at dissimilar intervals. The intervals flanked by editions ranged from two to 12 years. Evolution of DDC up to the 14th edition was a progressive record of a clear policy pursued successfully through Dewey throughout his life. These editions, the third through fourteenth, closely followed the pattern set through the second edition. Progress was mainly in the direction of ever rising detail without much transform in the vital building of the scheme. The later editions dutifully kept up the promise given that the numbers were settled.

**Fifteenth Average Edition**

Special mention necessity is made of the fifteenth edition since it departed from the hitherto followed policy of integrity of numbers. In 1951, the fifteenth edition emerged under the editorship of Milton Ferguson; This was the first edition to be designated, on its title page, since Dewey Decimal Classification and Relative Index. This edition halted the procedure of long expansion without any true revision. Till the expansion had not always been balanced and reflected an YN1=11 style to revision. It was not always based on literary warrant,

After publication of this edition it soon became clear that the transforms, particularly the relocations, proved too much for the practicing librarians. Mainly of them did not accept the new -15ditionand sustained with the fourteenth. Criticism of the fifteenth edition was fierce and vehement—several critics even pronounced the scheme dead.
Sixteenth and Later Editions

The sixteenth edition emerged in 1958 edited through Benjamin Custer. This set, the pattern of the seven-year revision cycle. This edition went back to the detailed enumeration of the fourteenth edition and relocated few topics back to their original spaces. But the bigger relocations of the fifteenth edition were retained. It sustained few of the innovative characteristics of the fifteenth edition such since average spelling, current terminology and a pleasing typographical presentation. The index was published since a distinct volume and was relatively more detailed than that of the fourteenth edition. The sixteenth edition also contained the first of the Phoenix schedules.

The seventeenth through nineteenth editions, also under the editorship of Custer, were urbanized beside same Tines. Each edition, while observing the policy of integrity of numbers, show, 3 concern to stay pace with knowledge within reasonable bounds.

Twentieth Edition

The twentieth edition of DDC was published in 1989 and edited through J. P. Comaromi. It is in four volumes: V-1 Introduction and Tables, V-2 Schedules (000-500), V-3 Schedules (600-900) and V-4 Relative Index and Manual. Each volume is separately paginated. The four volumes jointly consist of 3080 pages and since composed of the following major sections.

Volume-1: This volume consists of the following three sections:

- A. Introduction: Introduces the user to DDC and gives instructions on how to exploit it.
- B. Tables: The seven auxiliary tables with notation that can be added to the class, number in the schedules.
- C. Lists which compare Editions 19 and 20. Relocations, reductions, etc.

Volumes 2 and 3: These two volumes are the main body of the scheme. V-2 (000-500), V-3 (600-900):

- D. Schedules—Knowledge organized from 001-999.

Volume 4: This volume consists of the following two sections:

- E. Relative Index: An alphabetical list of subjects establish in the schedules and tables.
- F. Manual: It assists the classifier for classifying hard regions.

In the evolution of DDC-20, the year 1988 witnessed two significant measures, which had profound effect on the future of DDC. On July 29, 1988 a computer tape containing considerably all the text of DDC-20 was delivered to a firm in Massachusetts to begin manufacture of this edition. The Forest Press and DDC became section of Online Computer Library Centre (OCLC),
the Ohio-based non-profit organization. The twenty-first edition of DDC was published in 1996. The format is the similar since that of the 20th edition.

**Abridged DDC**

In order to meet requires of little and gradually rising libraries, an abridged edition of the scheme was issued in 1894. The abridgement was in relation to the two-fifths the mass of the full edition. At present, the abridged version is in its eleventh edition. This eleventh edition was published shortly after the nineteenth full edition. This similarity series of abridged editions, designed for little libraries not requiring a high degree of specificity, contains notations rarely exceeding five digits. The abridged edition is used through mainly of the school libraries and several little public libraries in the United States of America. It is also widely used in other countries.

**Underlying Principles**

The introduction to the first edition of DDC contained no precise report on principles concerning the sequences of classes. Dewey acknowledged his indebtedness to Natale Battezzati; Jacob Schwartz and W.T. Harris. From his reference to Harris, the philosophical foundation of DDC can be traced.

**Philosophical Foundation**

The field of library classification owes much to the contributions of logicians and philosophers: The roots of library classification are to be establishing in philosophy. This is true of DDC also. The division of the main classes was based on an earlier classification, urbanized through Harris in 1870.

**Classification through Discipline**

It is commonly said that library classification clusters jointly materials on the similar subject. It is an in excess of simplification. Barring some, mainly classification schemes are based on the principle of classification through discipline. The distinctive characteristic of DDC, from the beginning has been that the division of main classes and subclasses is based on academic disciplines or meadows of revise rather than the subjects. Since a result, the similar subject may be classed in more than one lay in the scheme. For instance, the subject copper may be classed in chemistry, metallurgy, mineralogy, chemical technology and thus on depending on the author’s style. This style is recognized since classification through discipline, which is dissimilar from one-lay classifications. Dewey Decimal Classification is an aspect classification,
which distributes the subject according to the context. For instance, the chemical aspect of copper would be in chemistry, the metallurgical aspect in metallurgy and thus on. This style of DDC was almost certainly correct, since subjects are approached from the discipline point of view through mainly users in the majority of cases. This is -in contrast with the style of Brown to the problem of collocation in his Subject Classification.

In DDC, the Universe of Knowledge was divided into nine vital classes, viz., Philosophy, Religion, Sociology, Philology, Natural Science, Useful Arts, Fine Arts, Literature and History. These classes were academic disciplines in Dewey’s time. Today, several of these main classes like Natural Science, Useful Arts, Sociology, etc., contain many academic disciplines.

Hierarchical Building

Dewey Decimal Classification is simply a hierarchical scheme, based on her common principles of division. It begins with the Universe of Knowledge since a whole and divides it into classes and subclasses at successive levels of division with a sure feature since the foundation at each level. On the whole, the progression is from the common to the specific, forming a hierarchical building.

Due to the notation adopted, at each level of division, only ten sub-divisions are possible. Each class is subordinate to the stage above it, super ordinate to the stage below it and coordinate with classes at the similar stage, therefore forming a hierarchical building.

Practicality

Dewey claimed that everywhere, philosophic theory and accuracy have acquiesced to practical usefulness. Therefore, DDC has the heritage of pragmatism and commitment to usefulness. Dewey and later the editors of DDC have been committed to meeting and solving the troubles of exploit. It is this excellence which has contributed to the durability of DDC.

Revision Procedure

One other factor which has contributed to the durability of DDC has been its continued program of revision and updating. Revisions usually take the following shapes:

- **Expansion** is undertaken in order to accommodate new subjects since well since to give more minute and specific sub-divisions under the existing subjects. This is a reasonable style since mainly new subjects emerge since an outgrowth of an existing field of knowledge. With rising specialization, library materials also tend to be more specific and, therefore, need more minute sub-divisions of the existing subjects.
• **Reduction** consist discontinuing extremely rarely used existing sub-divisions. Such topics are, then, classed with the more common topic.

• **Relocation** of a number of existing subjects takes lay in every new edition.

**Phoenix Schedules**

This is a piecemeal style to bring DDC up-to-date. Sure schedules, which are out of date and need drastic transforms, are replaced with entirely new classifications. The earlier schedules of few one or two major disciplines are destroyed and new schedules are totally recast and their arrangement is remolded in each of the recent editions of DDC as the sixteenth edition. These new schedules growing out of the ashes of the destroyed old schedules are described Phoenix schedules. The policy of integrity of numbers is dispensed with and the whole schedule for a sure discipline or topic is reconstituted without regard to the previous divisions. In recent editions, the following schedules have been given the Phoenix treatment.

- 546: Inorganic chemistry and 547 Organic chemistry in the 16th edition
- 130: Pseudapsychology, Parapsychology (occultism) and 150 Psychology in the 17th edition.
- 301-307: Sociology, 324 Political procedure and 41 and 42 Region notations for Great Britain.

**Organizational Set-up**

The responsibility for the maintenance of DDC rests with Forest Press, a wholly owned subsidiary of the Lake Placid Education base which Melvil Dewey set up to carry on his job. Editorial job is accepted out under contract at the Library of Congress, though the Forest Press continues to market and publish DDC. In flanked by these two organizations is a cluster described DDC Editorial Policy Committee composed of practicing librarians and library educators who advise the Forest Press and the editor on matters relating to revision.

**Process of Revision**

Taking into consideration the response of the users to the immediately preceding since well since earlier editions, the editors, in consultation with the DDC Editorial Policy Committee, determine which schedules need what degree of revision and review. Major revisions are prepared with the advice of subject experts. The main principle has been to, satisfy requires of diverse users who contain practitioners in little and big public and research libraries since well since teachers and students.
To stay users of DDC informed of developments concerning the scheme, DDC Additions, Notes and Decisions is published at intervals. This bulletin is a useful pointer to transforms to be incorporated in due course in the DDC schedules.

**Exploit of DDC**

Though DDC was criticized often, it was adopted through libraries rapidly and widely both at home and abroad. Surveys of the exploit of DDC prove this information. Its exploit was thus substantial even through 1901 that in that year the American Library Associations Catalog Part voted unanimously that DDC numbers should seem on the ensuing Library of Congress printed catalog cards. Hence, due to mounting pressures from the profession, an office was recognized in the Library of Congress in 1930 for assigning DDC numbers to the titles catalogued through the Library. Following the LC instance, H.W. Wilson Company’s catalog cards and standards catalogs, the ALA:S Book List, R.R. Bowkers Publishers Weekly and American Book Publishing Record, and, later British National Bibliographys catalogue cards and bibliographies, started providing DDC numbers to specific titles.

**DDC 19th Edition**

In pursuance of the seven-year revision cycle, the edition of DDC emerged in 1979. It efforts to consolidate the usually carried and well-received revisions and additions incorporated in the earlier two editions. In the languages of the DDC Editorial Policy Committee It he been faithful to continuity where continuity is more useful than transform and it has been changed where a new vision serves us bigger than the old.

There are more entries, provision for more topics and so more opportunities to build numbers. The scheme now has greater potential for detailed classification, much more than what the 21,504 entries in the schedules suggest.

DDC 19th edition emerged in three volumes: Volume 1—Introduction: Tables; Volume 2—Schedules; and Volume 3—Relative Index. This was the fourth and final edition to seem under the editorship of Benjamin Custer who took in excess of-the task following the fiasco of the fifteenth edition. Even though Volume I (Tables) and Volume 3 (Relative Index) are extremely significant auxiliaries, Volume 2 (Schedules) shapes the core of the—scheme. We would do well to treat it at length.
**Schedules**

Schedules are, the main section of the scheme, consisting of 21,504 entries into which the Universe of Knowledge is divided and sub-divided at successive levels of division till the desired stage of specificity is obtained.

**Vital Plan**

In accordance with the schemes vital principle of division through discipline, the nineteenth edition also continues with the similar ten divisions of the Universe of Knowledge with the main classes and one generalia class. Several of these main classes like Pure Sciences, Technology, and Social Sciences contain many academic disciplines. The modern grouping of disciplines is into regions of studies like the Humanities, Social Sciences, and Pure. Sciences and Applied Sciences. In DDC, disciplines like Philosophy, Language, Literature, etc., which approach under the Humanities are treated since coordinate subjects with Social Sciences, Pure Sciences and Applied Sciences. The information that six of the nine main classes in DDC belong to the field of Humanities reflects the state of studying in the nineteenth century. Dewey gave each of classification status equal to that of Social Sciences, Pure Sciences and Applied Sciences.

In the first division of ten main classes, 0-9 which embraces the whole of human knowledge, the class 0 is used for Generalities. The DDC Generalities comprises common newspapers and encyclopedias and other jobs dealing with several subjects from several points of view, and also sure specialized disciplines that trade with knowledge usually, such since library and fact science, museology and journalism. Following are the ten main classes with their assigned meaning:

- 000: Generalities
- 100: Philosophy and related disciplines
- 200: Religion
- 300: Social Sciences
- 400: Words
- 500: Pure Sciences
- 600: Technology (Applied Sciences)
- 700: The Arts
- 800: Literature (Belles-lettres)
- 900: Common. Geography and History and their auxiliaries

Therefore, the ten main classes are represented through the numbers 000 to 900. In these numbers, the digit occupying the, first location that is, 0, 1, 2, 3, 4...9 convey the assigned meanings. These are the substantive digits of the main class numbers 000/900. The two terminal
zeroes are added to fill out a number to three digits. This is in accordance with the three digit minimum principle of DDC introduced in the second edition. These terminal zeroes are given their normal arithmetical value. Therefore, the notation used to designate each class consists of a hundred three-digit numbers, e.g., 500-599 for the Pure Sciences.

**Divisions**

Each main class consists of ten division’s numbers 0-9. These division numbers inhabit the second location in the notation. For instance,

![Diagram](image)

Division 0 within each main class is used for common jobs on the whole main class and divisions 1-9 for subdivisions of the main class. For instance, 50 are devoted to common jobs on Pure Sciences. Each division can be further subdivided into ten parts, and nine parts in the case of common jobs division. Therefore,

- 501: Philosophy
- 502: Miscellany
- 503: Dictionaries and encyclopedias
- 504: Vacant
- 505: Serial publications
- 506: Organizations
- 507: Revise and teaching
- 508: Travel and surveys
- 509: Historical and geographical treatment
Therefore, digits 1-9 in the third location of the above set of numbers indicate the parts of the division 0 (in the second location) of the main class 5. In other languages, the third location stands for the part.

**Parts**

Similarly, each division, say 51 Mathematics, 52 Astronomy, 53 Physics and thus on, is capable of having ten parts. Therefore, the full span of part numbers for each division in the instance is 510-519, 520-529, 530-539 and thus on. The 0 in the third location in the number is applied to common jobs on the whole divisions, and 1-9 are used for subdivisions. For instance, 530 are assigned to Physics in common and 531-539 to the sub-divisions of Physics. The scheme permits further sub-division to any degree desired in the similar manner of successive division into ten classes in row with the decimal notation. A decimal point is placed flanked by the third and fourth digits. Therefore, 536 heats is divided into

- 536.1: Theories
- 536.2: Transmission
- 536.3: Radiation
- 536.4: Effects of heat on matter
- 536.5: Temperature
- 536.3: Radiation is further divided since
  - 536.31: Reflection
  - 536.32: Refraction
  - 536.33: Radiation
  - 536.34: Absorption

Here, in this scrupulous instance, the division stops at the fifth order of division. But, it require not always necessarily be thus. A class number is divided till the desired specificity is obtained. There is no limit to the number of digits following the decimal point. To show this, let us take another instance.

- 390: Traditions, etiquette, folklore
- 394: Common traditions
- 394.2: Special occasions
- 394.26: Holidays
- 394.268: Specific holidays
- 394.268 2: Religious
- 394.268 28: Christian
- 394.268 282: Christmas
You will notice that legroom is left flanked by the sixth and seventh digits. The legroom flanked by the sixth and seventh digits of the last three numbers in the instance is not a vital section j of the notation. These places are left after every three digits beyond the decimal point in all numbers for ease in reading and copying.

Even though, since a rule, the notation 0 is reserved for common jobs in the class in which it seems, there are several instances of the exploit of this notation for special purposes, for instance, 301-307 Sociology. There are many such instances at further stages of divisions.

**Notation**

The notation of DDC has been at once an asset and a bottleneck. Dewey adopted a pure notation (approximately pure with only occasional exploit of letters) based on the Indo-Arabic numerals. This choice of numerals made the scheme universally acceptable, but restricted its capability to derive only nine spaces at each level of division, since the zero is ordinarily used for common jobs.

Hierarchy in notation: Another major feature of the notation is its hierarchical building. Dewey decided that the notation should express the hierarchical order of classes. Hierarchy in notation means that at each stage there is an array of mutually exclusive classes, which are coordinate to each other. The specificity of the class augments with each successive stage of division, that is, the classes get progressively more specific. The classes at any given stage are subordinate to the class at the stage and super-ordinate to the classes below it. The following instance shows the hierarchical building present in both the notation and the building:

- 500: Pure Sciences
- 510: Mathematics
- 516: Geometry
- 516.3: Analytic Geometries
- 516.37: Metric Differential Geometries
- 516.372: Euclidean

Since the classification progresses from the common to the specific, each stage of division is indicated through the addition of one new digit. There are some exceptions to the hierarchical building. They are:

- Sometimes spans of numbers are used to express subjects. They are shown in the schedule since centered entries, thus described because they seem with numbers, headings and notes centered on the page instead of with numbers in the usual number column. For instance, the span, 541-547 symbolizes Chemistry.
The sub-divisions of a discipline or topic are not always subordinated to the notation for the discipline or topic. This is resorted to because of the availability of spare notation and a desire to shorter notation. For instance, 574 denote biology and its sub-divisions. Botanical sciences and Zoological sciences are classed at 580 and 590 respectively ether than at 574.

**Tables**

The DDC has been receiving progressively less enumerative and more analytico-synthetic in recent editions. Several numbers exit which are no enumerated in the schedules. These numbers can be obtained through synthesizing dissimilar numbers. This is possible because of the auxiliary tables. These tables are provided in Volume I — Introduction: Tables.—

Volume 1, in information, consists of three sections:

- Introduction
- Tables
- Summaries

In the introduction section, the editor’s introduction describes the vital feature of DDC, the notable characteristics added to the new edition, the vital plan of DDC and the rules concerning the practical exploit of DDC. Up to the eighteenth editions, Melvil introduction to the twelfth was incorporated at this lay. The nineteenth edition does not, though, contain it since a distinct characteristic, but since section of the editors’ introduction. This is a significant section of the scheme and necessity be studied cautiously through those wishing to exploit DDC 19th edition.

The nineteenth edition contains the same seven tables of the eighteenth edition, with few transform and expansions. The seventeenth edition had only two tables: Region table and average subdivisions. Five more tables were added in the eighteenth edition. The following seven tables seem in the new edition:

- Table 1: Average Subdivisions
- Table 2: Regions
- Table 3: Subdivisions of Individual Literatures
- Table 4: Subdivisions of Individual Words
- Table 5: Racial, Ethnic, National Clusters
- Table 6: Words
- Table 7: Persons

The Regions table occupies mainly number of pages in this volume. Currently, the four mainly commonly used tables are Average subdivisions, Geographical subdivisions, Individual
literatures and Individual words. The notations from these tables are never used independently, but always in combination with the main numbers.

Tables 1, 2, 5 and 7 can be used since required with any suitable number from the schedules. They are, applicable to the whole range of class numbers 000 to 999. Notations from Table 1, Average subdivisions, can be added directly to any number from the schedules or with the introduction of additional zeroes, if the zero is not reserved for common jobs and a notation beginning with a zero (or 00, or 000 since the case may be) has been used for special purposes.

The notations from Tables 2, 5 and 7 maybe used since required either directly when thus instructed, or with the interposition of suitable average subdivisions such since 09 for regions, 089 for racial, ethnic and national clusters and 088 for persons.

The notations for Table 6, words, also have applicability throughout the schedules, but their exploit is restricted to only those numbers from the schedules and other tables wherein the classifier is specifically instructed.

The notations of Tables 3 and 4 are applicable only to their respective main classes, literature, dry words. The notations of Table 3 can be used since required with the foundation numbers of individual literatures recognized through an asterisk (*) under 810-890. Likewise, notations of Table 4 may be used since required with the foundation numbers for individual words recognized through an asterisk (*) under 420-490. These tables have greatly enhanced the potential for details in DDC.

**Summaries**

The three summaries provided at the end of Volume I provide an outline of the schedules in Volume 2. These summaries show how the Universe of Knowledge is divided in DDC, the total number of main classes and their sub-divisions and the gaps left for future exploit, etc. These summaries act since a guide for understanding the specific divisions in Volume 2 and are of help for the beginner.

**Relative Index**

The Relative Index forming an extremely significant section of the whole job has been measured since the heart of the scheme from the beginning. It supplements the classification in the scheme through bringing jointly those related characteristics of a subject, which are scattered throughout the scheme due to classification through discipline followed through DDC. While the schedules cluster subjects through discipline and scatter the several characteristics of one and the similar subject according to the context, the Relative Index collocate these characteristics under the subject word at one lay.
The index to the nineteenth edition retains the similar pattern since in the eighteenth edition. The editor claims that it has been refined to create it a more efficient tool. Several of the cross-references have been deleted and replaced through numbers. More synonyms have been added. To a sure extent DDC has taken a step backwards through creation the index approximately a substitute for the schedules.

The index is extremely detailed in giving, under each subject, the numbers in which it may be classed according to the discipline or aspect or point of view treated in a given document. It has composed all characteristics of the subject copper.

**Other Characteristics**

DDC 19th edition also contains other characteristics. These are synthetic devices; add to device, special topics for common applicability, mnemonics, optional provisions and efforts towards universality. These characteristics are significant because they have made DDC more synthetic, mnemonic, versatile and universal. Without acquaintance with these characteristics, our revise of DDC would certainly be partial.

**Synthetic Devices**

The capacity of DDC to give for minute or detailed classification has been greatly enhanced through its synthetic devices. Steadily and increasingly DDC has been incorporating in it the principle of synthesis beside with enumeration. The synthesis is achieved through the exploit of the Seven Tables. In addition, there is another device described add to instructions which facilitates detailed specification with economy of presentation.

**Add to Device**

This add to device is a potential tool for synthesis and the measure of its exploit has greatly increased in recent edition of DDC. Add to device is a note which gives an opportunity to expand a given number or series of numbers whose sub-divisions are not enumerated under that number or series in the schedule. Add to device is of the following types:

- **Add from tables:** Notations from Tables 2-7 may be added to sure numbers in the schedules to create them more specific. These instructions under sure numbers indicate exactly what may be added, from which table to what foundation. For instance, under 325.4-9 International migration through specific continents... etc., there seems the instruction “Add Regions notation 4-9 from Table 2 to foundation number 325. This means that for a book on migration to/India, for instance, the number -54 for India from Table 2 is to be attached to 325 resulting in the compound number 325.54.
• **Add-from schedules:** Likewise, sure numbers in the schedules may be made more specific through adding suitable numbers from other spaces in the schedules. For instance, 632.6 Animal pests. The instruction here reads `Add to foundation number 632.6 the numbers following 59 in 592/599, e.g., snails 632.643. Sometimes a complete class number is added to another class number, e.g., 339.48 Consumption of specific commodities and clusters of commodities. The instruction reads `Add 001-999 to foundation number 339.48, e.g., consumption of agricultural products 339.486 3. Sometimes one `add to instruction leads to another, e.g., 581.21 Pathological physiologies. The instruction reads `Add to foundation number 581.21 the numbers following 581.1 in 581.11-581.19: At 581.16 Reproduction there is another instruction, which reads `Add to foundation number 581.16 the numbers following 574.16 in 574.162 to 574.166. Therefore, if a classifier wants to build a number for Pathological physiology of sexual reproduction, he has to first pick the number 581.21 and add 6 Reproduction from 581.16 and, following the instruction at 581.16, add 6 taken from 574.166 Sexual reproduction resulting in the synthetic number 581.216 6.

• **Add from both tables and schedules:** Sometimes numbers are derived through adding first from a table and then from a schedule, or in the reverse order.

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**Special Topics of Common Applicability**

The principle of special topics of common applicability refers to the sub-division of a subject according to a feature having common applicability to its (subjects) sub-divisions, which are based on dissimilar features.

It is essentially a device for enabling a simply enumerative scheme to cope with more compound subjects than might otherwise be possible. This device removes the rigidity of a fixed hierarchy to a sure extent. For instance, the subject Animal husbandry can be divided into specific behaviors like selection and acquisition, breeding care and maintenance, etc. The similar subject of animal husbandry can also be divided through specific animals like horses, cattle, etc. The specific behaviors like breeding, etc., are also applicable to any of the specific animals. Therefore, we have 636 Animal husbandry, 636.08 Generalities, 636.1 to 9 several types of animals. The generalities like breeding, etc., are applicable to any of the divisions from 636.1 to 636.9. Therefore, breeding horses would be given the number 636.1082. This is achieved through add to instruction. These synthetic devices also enhance the mnemonic excellence of the DDC notation.
Mnemonic Characteristics

The DDC achieves mnemonics in notation with the exploit of synthetic devices like tables and add to instructions. Therefore, we have an instance of systematic mnemonics. The DDC notation also achieves mnemonic power through parallel of numbering for sure related classes. For instance, in 800 Literature, the notation 1 Poetry, 2 Drama, 3 Fiction, 4 Essays, etc., is uniformly used for literature in all words. Therefore, we have 811 American poetry, 821 English poetry and thus on.

Optional Provisions

Library classification, being a pre-coordinate organization, has a fixed citation order for the several facets in a number. Even though the order is fixed, taking into consideration the conditions and the interests of the majority of users there may arise occasions where this prescribed order of citation is not establish satisfactory to sure users and libraries. Hence, to overcome this problem, DDC gives for optional provisions. Sure topics are given two (or more) placements. While one of these is preferred through the editors, the other options are provided to meet the necessities of few libraries. An instruction seems under both the preferred class and the options. Few classic examples are biographies and subject bibliographies where options are given to classify under either the specific subject or with the common class biographies or bibliographies. Therefore, bibliography of physics can be classed either at 016 or with 530 physics. Along biographies and bibliographies, there are other instances in DDC which are a clear indication of the acceptance of facet building. For instance, 340 Law where, the division is measured to consist of three units (or facets) separately from the foundation number 34:

- The branch of law,
- Topics within the branch, and
- Geographical region.

DDC gives for arrangement in any of three methods, viz.

- Branch of law, region, topic, or
- Region, branch of law, topic, or
- Branch of law, topic, and region.

If we take a specific title like Law of divorce in India, it goes to 34 Law, which would be the foundation number. Under law, it pertains to private law (branch of law) and-the topic is divorce, with India since the relevant geographical region. Following (Tables 4.1) are the three optional numbers for the title in question:
Evaluation

Any effort at an evaluation of classification schemes necessarily cover the purposes these schemes serve and the habitation and the conditions in which they were urbanized.

Melvil Dewey urbanized his scheme mainly because a classification scheme was needed when none lived. UDC was urbanized to arrange the entries of a universal bibliography on cards, while Ranganathan urbanized his Colon Classification to demonstrate his theory of classification. Dewey's specific purpose in developing his scheme was to provide to the libraries of his days an efficient spot and park tool and he did provide it.

Dewey's scheme was conceived in the 1870s and was approximately wholly oriented to the literature likely to be acquired through American academic libraries (Amherst, for instance) and public libraries. From such a localized origin, DDC has grown to be an international scheme.

One of the major objectives of DDC has been practicality. Dewey urbanized actual classifications and evolved the theory round the practical schemes. Despite its drawbacks, this
way has a great trade to commend it. Dewey was aware of the theoretical shortcomings, but preferred practical usefulness to philosophic theory.

This backdrop of the scheme has to be kept in mind while evaluating DDC, since it gives a proper perspective and insight. The strengths and weaknesses of any scheme are too few extent inversely related and this is also true of DDC.

**Order and Collocation of Classes**

DDC is criticized since still reflecting the ordering of knowledge that prevailed throughout the era of its birth. The sequence of main classes and the collocation of other subdivisions are measured to be arbitrary and illogical.

Few of the notable and glaring examples of arbitrary order are:

- Isolation of Words (400) from Literature (800), and Social Sciences (300) from Geography and History (900) at the broadest stage;
- Isolation of Political Science (320) from Public Management (350);
- Isolation of Commerce (380) from Economics (330) and Business Management (650);
- Sociology (301-307) from Traditions (390) and Social Troubles and Services (360).

**Improper Placement**

Notable in this category are the housing of Psychology (150) since:

- A subdivision of Philosophy (100);
- Sports and amusement in Fine arts (700);
- Inclusion of Biography (920) in Common Geography and History (900)—as rectified through creation it optional;
- Inclusion of Statistics (310) in Social Sciences (300).

**Anglo-American Bias**

The scheme reflects an overwhelming Anglo-American bias in civilization, language, literature, religion and elsewhere. This bias looks reasonable considering the origin. Efforts have been made to internationalize the scheme through providing the necessary options. These optional provisions in language, literature and religion are, though, not always convenient and useful. For instance, if cue chooses to provide regional emphasis to Hindu religion and exploit notations 200-280 for it, the scheme has to be worked out in the vicinity, since the present subdivisions under these numbers are not appropriate for Hindu religion.
Citation Order

The citation order within a subject does not always result in useful collocation. For instance, in Literature (800), the citation order of language, form, era, author scatters the jobs of the similar author according to the literary form when mainly scholars would prefer to have them grouped jointly. Likewise, in Social Science (300), the failure to recognize the importance of the region facet which usually symbolizes the particularly society being called scatters materials. This has, though, been recognized in Law (340). Because of the principle of enumeration, units belonging to dissimilar facets cannot be combined in a single number and, since a result; only one of the many units involved has to be chosen for structure a number.

One good point in relation to the citation order in DDC is that the scheme has shown an inclination to introduce flexibility in the order of facets. Hopefully, there will be more such provisions in the future editions.

Notation

The DDC notation has been at once an asset and a liability. On one hand, the simplicity, ingenuity and adaptability of the notation of pure Arabic numerals gained universal acceptance and popularity for DDC. On the other hand, it has also put severe restrictions on its skill to stay pace with the changing building of knowledge. The decimal notation of DDC has the capability to expand ad infinitum. The notation is at mainly spaces expressive, capable of displaying the conceptual hierarchy. But, it restricts the scheme to nine spaces at each level of division. This Decimal Procrustean Bed has received a great trade of criticism.

Being aware of the continuing dissatisfaction with the lengthy notation, the Forest Press requested the Decimal Classification Division of Library of Congress to take little action in this matter. This resulted in the policy of segmenting the DDC notation. As 1967, the DDC numbers in LC catalogues and on MARC tapes seem in the form of one to three segments. The segmentation, shown through prime spots which are not section of notation itself, recognized for the user the varying stages at which the notation is meaningful. The following examples display segmentation:

- 025.43
- 338.476555730942
- 658.80965573
Unevenness and Inconsistency

The dissimilar rates of growth for dissimilar disciplines have resulted in an uneven building in DDC with few classes like Social Sciences (300); Science (500) and Technology (600) have become overcrowded.

The superimposition of the principle of synthesis on an otherwise enumerative classification has resulted in inconsistent treatment and consequently unpredictability of the building. The scheme abounds in examples, of inconsistency. Therefore,

- 312.2: Statistics on deaths (mortality)
- 312.22: Maternal deaths in childbirth
- 312.23: Infant deaths

Consequently, Maternal death statistics pertaining to India would get the number 312.220 954, while Infant deaths in India would get 312.235 4.

Reclassification Due to Revision

Revision and relocation in DDC are rather conservative in comparison with UDC and CC. Still there are users who complain in relation to the alterations, which are made. The editorial body is faced with hard choices. Alterations invite the indignation of users.

Without revision, DDC will deviate more and more from the current building of knowledge.

Durability of DDC

The main causes for DDCs popularity and widespread exploit are its inherent qualities and also historical and administrative factors. Separately from the inherent qualities, the timing and organizational support and its exploit in international bibliographic records including MARC tapes are other factors contributing to DDCs popularity and durability.


The Dewey Decimal classification first published in 1876 is the mainly popular of all the library classification organizations. It is used in 200000 libraries in 135 countries all in excess of the world. It has secured and retained this location partially because of its well defined revision policy, and sound revision machinery. As the first revision in 1885, it has uniformly and regularly been revised. Revision has been described since a double edged sword which cuts both methods. It is essential for survival, though too much of it may be killing and dangerous to its
popularity and atrocious for its users. Thus a revision policy has to be cautiously formulated, and has to create a delicate balance flanked by transform and continuity. A new edition incorporates new topics that have appeared as the previous edition at suitable spaces. But since an equally significant task is that it relocates few topics to bigger deemed spaces, and deletes few of the obsolete subjects. Several subjects are expanded. In addition advantage is taken to apply new classificatory techniques in improving the organization. Edition through edition the organization is becoming more and more faceted and user friendly.

**Revision Process**

To carry out the revision there is full time editorial team headed through the (Chief) Editor of the DDC. The editorial office is situated in the Decimal Classification Division of the Library of Congress, Washington, D.C., USA as 1953. This division applies DDC numbers to more than one lakh new but select books every year procured in the Library of Congress. There is Decimal Classification Editorial Policy Committee (DCEPC) headed through a chairperson to advise the editors on the type and extent of revision. This is a broad based international committee appointed together through the American Library Association (ALA) and the Forest Press, the publisher of the DDC. The Committee has representatives from Canada, the UK, and Australia and from every sector of the US Library profession, It is an apex committee minutely advises and oversees the editing of the organization. Its new editions are published at an interval ranging from 7 to 10 years through its exclusive publisher the Forest Press till recently situated at Albany, New York which has now moved its office to OCLC headquarters at Dublin, Ohio. It is headed through an Executive Director.

**Discourse and Incorporation of Transforms**

The revision process and its implementation have remained changing. Revision of the DDC is a continuous procedure. After deliberations and discussions when the transforms or additions are approved through the DCBPC, these are announced in an irregular newsletter titled DCs. It means DC AND (i.e., DC Additions, Notes and Decisions) which is mailed free to all purchasers of a DDC edition.

Homepage is updated on the first of every month. So, now the DDC users have always an updated DDC. In addition, as 1993 the DDC is also accessible in CD-ROM format which is published every year with new revisions. Though, implementation of transforms in library is not simple and mainly of the librarians is scared of it and few do not like doing it; and few avoid
implementing them on one pretext or the other. Only some libraries implement the new transforms. Bibliographies, though, exploit the latest version.

**Salient Characteristics of DDC-19 (1979)**

The 19th edition of the DDC published in 1979 was the last edition edited through the able and well-known editor Benjamin A Custer (1912-1997); who first edited DDC-16 (1958). The DDC-19 (1979) obviously accepted on the trends of the last three decades, though it did not bring up since several transforms since were seen in the DDC-18 (1971). The major revision (phoenix schedule) was the new schedule of 301-307 Sociology. Later in 1982 a more detailed version of 301-307 Sociology was issued separately since a self-governing booklet. Mainly of the other transforms were also in the main class 300 Social sciences. The 329 Practical politics was merged with 324 to form a quite, new number 324 Political procedure.

**Transforms in Tables**

There were few transforms in the average subdivisions especially in discontinuation-of the ss-08. Table of Precedence gives average guidance in case of choice flanked by two average subdivisions.

There was a common, 17% augment in the Region Table. Since a major transform the region number for the UK since a whole was shifted to 41 from 42. In information this transform has been in force as 1974.

Table 3 for Individual Literatures has been entirely recast and split into two sub tables, namely Table 3 and Table 3A. The latter is used on instructions from Table 3. The lengthy extension of -08/or -09 in Table 3 have been transferred to Table 3A. It made synthesis of numbers in class 800 somewhat easier.

**DDC Manual**

A landmark for the DDC practice and standardization came in 1982 with the publication through the Forest Press; the. Manual on the exploit of the Dewey Decimal Classification., Edition 19 prepared through John P Comargini, and his team. It was a result of a extensive survey of the exploit of DDC in North America (1975) mannered through John Comarorni himself., The Mannual explains the. DDC perceptions and practices of staff of the Decimal Classification Division of the, Library of Congress in applying and interpreting the DDC numbers: It has made possible the applications of DDC in conventionality with the official exploit. It gives guidance for classifying in hard regions, and distinguishes one number from
other related number In a nutshell the Manual is a blue book on the DDC numbers application policies. With several maps, flow charts, and detailed point through point elaborations, it is a handy guide for the DDC classifiers for achieving uniformity, of application of the DDC Because of its usefulness k has been incorporated, in the organization as the DDC-20 1489y.

**Computerization**

It is significant to mention that DDC-19 was published for the first time through computerized photocomposition. Later from the present tape several path breaking experimental studies were mannered through Karen Markey Drab6nsioft to revise the exploit of classification (DDC in scrupulous) in online searches and retrieval. Then in 1984 from these tapes a computerized Editorial Support. Organization (ESS) was urbanized through Inferences, Inc for the Forest Press.

**Relative Index**

The Relative Index sustained to be complicated. The only exception was that the bold typeface for entries that were subdivided -in the schedule was eliminated.

**The DDC-20 (1989)**

The 20th edition in 1989 brought in several transforms which proved to be trend setters. It was edited through a new editor Dr. John P. Comaromi, (1937-1991) a brilliant academician, who had an extensive time association with the DDC in several capacities. As July 1988 ownership of the Forest Press has been transferred to the OCLC, Dublin, Ohio which started a new period in the marketing, research and popularity of the DDC. The organization was published in 4 volumes running to 3383 pages compared to 3361 pages in 3 volumes of the DDC-19

**Editorial Support Organization**

Edition 20 was first to be produced through an online Editorial Support Organization (ESS) installed through a private company Inferences, Inc in 1984 in the Decimal Classification Division of the Library of Congress. It is a database of the whole contents of the DDC organization and is used to produce future editions and a diversity of products. It has approximately eliminated the manual/clerical labor in editing and has reduced the manufacture era to six months from the earlier era of 2 yews.
New Transforms in the Schedules

Dr. Comaromi appointed since new editor in 1980 brought in several new transforms especially to create the DDC-20 easy, smart and up-to-date. Though Comaromi whispered in drastic transforms to stay pace with rising knowledge, he struck a diplomatic balance continuity and transform. Through method of major evolution a totally new schedule for 780 music was incorporated it had been under revision for the last decade through outside experts. The schedule is not only contemporary in content but also more faceted with a transparent facet building. This edition also incorporated 004-006 Data processing and computer science, which was earlier issued since a distinct flanked by DDC-19 and DDC-20. Minor transforms took lay in took lay in subjects like Christian religion, television, adult education, electronics, civil rights, gymnastics and civil history.

Transforms in Tables

The new Region Table reflected transforms in administrative and political setup of dissimilar countries and their elements. The Table 3 was further refined, customized and split into three sub tables: T3A, T3B and T3C. Table 3C is used on instructions from Table 3B of in 808-809 in the Schedules. It has made its application direct and simplified.

Electronic Version

Major attainment of DDC-20 had been its electronic version issued in-1993 on CD-ROM, titled `Electronic Dewey. It contained the DDC-20 schedules, tables, index, and manual since well -since the amendments and updating made in the PDC-20 as its publication in. 1989. The Disc can be used with a stand alone microcomputer. The Electronic Dewey could be searched through languages or phrases, numbers, index conditions, and Boolean operators. Captions could be browsed and hierarchies could, lie displayed, and an entry also showed regularly used LC subject headings associated with Dewey number, beside with an example bibliographic record. It enabled users to classify materials quickly and efficiently, it was the first CD-ROM version of any library classification organization accessible commercially.

Simplification Movement

Comaromi will be remembered for his efforts towards simplification and ease of exploit of the DDC. Format and presentation of the DDC text was improved in elegance and operation. Namely:

- Three main summaries were reallocated to the second volume.
Throughout the schedules and tables several more multilevel summaries were introduced especially in schedules such since 370 Education, 620 engineering, and 630 Agriculture, and also for Region Tables of Europe and North America. A multilevel summary is an outline of a class at few lower stage, e.g., say outline of 631.11

A multilevel summary allows to view the whole class at one glance, i.e., it gives a birds eye view of that class, it is time saving in locating a number without much scanning and flipping of the pages of schedules. It also saves the schedules from physical wear and tear.

- Under each entry detailed, definitional and instructional notes have been provided.
- Centered headings were indicated typographically through the symbol > in the number column.
- Optional numbers were given in the parenthesis, e.g. (828.9935).
- Manual on the exploit of the DDC was incorporated in the 4th volume. As, schedules quite regularly referred to the Manual for further clarification and elaboration.
- Since another important innovation, Editors Introduction was simplified and made easy and brief. It was mentioned:
  - The introduction is written primarily for the novice or beginning classifiers, although the experienced classifiers may benefit from reviewing its contents.

**Relative Index**

Another milestone transform occurred in the simplifying and trimming the index. It had now been considerably reduced to 730 pages from 1216 of DDC-19. This had been accomplished without impairing its efficiency. All the see references had been replaced through direct entries and synthesized numbers with, some exceptions were omitted. Conditions of the schedules and tables only were indexed. Users convince and efficiency was the two significant attainments of the DDC-20. It was a clear usable and a trend setting edition.

**The DDC-21 (1996)**

The 21st edition was released in July 1996 for the first time simultaneously both in traditional print and CD-ROM shapes. Latter is recognized since Dewey for Windows (DfW). Availability of DDC-20 on CD-ROM facilitated and accelerated the publication of the new edition (DfW).

Through now the connection of IT and DDC has crossed the teething trouble to enter a mature and fruitful period. Since with earlier edition the editorial job for the DDC-21 was also
done on the ESS, now a UNIX based organization. Since another innovation Members of the DCEPC now hold electronic meetings via the Dewey list serve on the Internet. The Dewey Home Page also comprises the OCLC Forest Press Catalogue, Dewey News and the `hot classification topics and Internet addresses of online catalogues by Dewey. The text in 4 volumes has been edited through a new editor Ms Joan S Mitchell, appointed Chief Editor in 1993. Ms Mitchell, the ninth editor for Dewey, has been associated with the Dewey organization as 1985. She is an expert in fact technology.

**Building of the CDC-21**

The DDC-21 has the following bibliographic details:


The account of the four volumes is since follows:

- Volume 2 : Schedules 000-599
- Volume 3: Schedules. 600-999
- Volume 4 : Relative Index, Manual

The 4 volumes extend in excess of to 4126 pages have been divided into nine parts marked A/l.

**Users Convenience**

Entries are clear with copious notes -Editors introduction is brief and clear with improved captions. Several brief manual like notes are also appended to entries in the schedules. Few new kinds of notes and theoretical concepts have also been introduced.

**Transforms in the Schedules**

The transforms in the DDC-21 are numerous and distant reaching in form of additions, expansions, relocations, deletions, and transform of headings and newly added notes. The major new schedules are for:

- 296 Judaism and 297 Islam
Few select, revisions have been made in 004-006 Data processing, 342-349 Branches of laws, 355 Military science, 362-363 Social troubles, 420-490 specific words, 636 Animal husbandry, 790 Theatre, 810-890 Literatures of specific words, 940-990 Common history of the contemporary world. Since a significant transform in 370 Education, 376 Education of women and 377 Schools of religions have been made subdivisions of 371 Education, whereas aloofness education has been expanded.

A commendable effort has been to reduce Christian bias in religion through shifting Christian religion from 200 to 220/289. Likewise, US bias has been reduced in wording and building in 350-354 Public management. It is a large step forward in reduction of Western and Christian bias and a move towards internationalization.

Transforms in Tables

Select transforms in the Tables are not less either. Regularization of average subdivisions has been accepted on a bit further. For instance, in 370 educations irregular exploit of average subdivision has been replaced through the regular exploit of TI-707. There has been the regularization of the exploit of average subdivisions at 370, 7 and elsewhere in the schedules and related adjustments in T1-071. This brings uniformity and creates the notation mnemonic and faceted. But still more remnants to be done, e.g., note the inconsistency below:

- 340.1 Theories of laws
- 342.02-.09 Other average subdivisions of laws

Region table has several important transforms especially in the region table for 47 Russia, 499 Bulgaria. Region numbers for new nations and other geopolitical transforms have been incorporated. There are minor transforms in other tables.

Transparent Facet Building

The totally revised schedules not only incorporate new subjects with details but—also give opportunity to rectify the order of classes and the facet building to reflect modern thinking in the profession. In the DDC-21 the new schedules, have transparent facet building. It means the DDC is receiving more and more faceted. For good or bad the DDC-21 abounds in options in facet
formula for regional emphasis. For instance, in 560-590 Life sciences the major taxonomic subdivisions have remained the similar, but the order of facets has changed from Entity-Procedure to Procedure-Entity. Biochemistry, from 574.19 has been raised to the status of a part at 572 with ample details and several facets. This is keeping in view the current status of the subject.

In 350-354 public management the facet order has been changed from Jurisdiction-Topic to Topic-jurisdiction. There is also an option here to bring jointly all topics of Public management through Region. There are several facet indicators used through several internal tables. Number structure has been simplified. For instance:

(Public) Management of Justice in India

- 353.4 + 09 (T1) + 54 (T2) 353.40954 or
- 351 + 54 (T2) + 0 (Facet indicator) + 34 (from 353.4) = 351.54034

It basically means that the topic of public administration can be collocated through country/lay or through topic. In public management the new numbers are not only shorter but also do absent with dual provision of the DDC-20.

**Relative index**

Relative index now of 895 pages has been increased through 150 pages due to the addition of several more conditions and headings. The index comprises conditions in the headings, and mainly conditions in notes appended with entries in the schedules, and conditions in all the seven tables arranged in word through word order. Notes in the Manual have been indexed which lead classifiers to relevant discussion. It also designates the lay for the interdisciplinary jobs on the subjects. Instead a word has indexed under Aves.

In DDC-21 in accordance with other subject indexing apparatus such since Sears-List of Subject, Headings, and the Library of Congress Subject Headings uninv6rted, i.e., direct and natural form of phrasal headings have been used. Personal and geographic names have been indexed-onAACR-2R specifications. For instance, entry is civil engineering, not engineering, civil; commercial art, not Art, commercial.

Few synthesized numbers have been restored in the index based on literary warrant. It incorporates more conditions to create it more hospitable to non-U.S. users.

Few concepts and conditions implied and few conditions obtainable through number structure but having enough literary warrant have also been incorporated in the index. Separately from physiographic names and characteristics, countries and their provinces have also been incorporated in the index. The US geographic details are up to the county stage. Few historical
measures, personalities, kings, queens, eras, names of movements have also been incorporated in the index.

**Dewey for Windows (DfW)**

The electronic version of DDC-21, named Dewey for Windows (DfW) was released simultaneously with the traditional print version in 1996. It is a Microsoft Window based LAN compatible version of the Electronic Dewey with DDC-21 database. It gives a Window interface, which is dissimilar from the DOS version of DIJC-20 (Electronic Dewey [19931). Search engine is both the cases remnants the similar. The DfW database began since a database in the Editorial Support Organization (ESS) at the Library of Congress., ESS format NUGIL dissimilar from the MARC format, yet there, are several similarities, too. The, tapes generated from ESS database are used to produce both the jolt and C14RC14 format since well since the abridged D IDC. DfW is updated every year through issuing a new CD which incorporates transforms announced in. DC& which is now published only on the Internet.

LC subject headings have been added to each class number by statistical matching. These headings give additional conditions for searching. It is an additional help for libraries by LCSH for subject headings, and a source of additional word for searching. It is an additional help conditions for other DfW users. There are few built in numbers. Keywords access is helpful finding these built –in numbers. Future edition may include several more such built in numbers. In DfW, movement of upward and downward hierarchies is possible through highlighting and clicking. For interface it uses single function windows. If a number or word is dragged and dropped into a search window, the search for number or the word will begin. For full record display of a number including caption notes, relative index entries and associated LCSH, headings of a number a Dewey number is dropped. If the word is dragged and dropped into an index window set for the relative index, the relevant section of the Relative Index will be displayed looking like that of the printed relative index.

The windows are arranged in a tiled fashion to facilitate dragging and dropping. There is average since well since customizable views for the users to set. The average views are Search view, Browse, view, and Scan view.

It has an augmented index with natural language conditions from other thesauri to give an enhanced access. Keyword access to the whole print DDC-21, additional conditions for search, hierarchic display, average and formulable view, dragging and dropping of numbers and conditions are thus me ON the significant advantages of DfW in excess of the traditional print version. It also remnants Up-to-date without any manual addition from the DC& since a. new version is issued annually. Though, the -vital principles and number structure techniques are the -similar. Future electronic versions may two vide few built in Expert Organization for automatic
synthesis of numbers wherever required. Several surprising characteristics are in store in the close to future.

**Future Trends**

Though able to classify in intricate situation, it is receiving easy to operate: Facet building is becoming transparent with a capacity to hold jointly several facets in a single class number.

As the purchase of the Forest Press through the OCLC Online Computer Library Center, Dublin, Ohio, several, innovative efforts have been made to make several Dewey products, such since bookmarks Dewey rap music, AV teaching kit, Guide to the full, abridged and electronic versions of the -DDC; and Dewey posters and exclusive publication of three main summaries. OCLC has sponsored pioneering and successful research to revise the-exploit of classification in online database Mainly significant of all, research is going on to discover wider applications of the, DDC in all sorts of fact management. Three summaries of the DDC are already being used to organize fact in the Internet. Few of the questions, currently addressed to the DDC are:

- How can the classification be made more effective for classifiers?
- How an Average English language classification be built that also meets requires of international users?
- How can the classification be made more useful for the end users?
- What can be done to create the Dewey Decimal Classification relevant in the future?
- The DDC is geared to become a powerful and reliable subject access organization of the 21st century.

**UNIVERSAL DECIMAL CLASSIFICATION (UDC)**

**Historical Backdrop**

Universal Decimal Classification owes its origin to Dewey Decimal Classification (DDC). Since noted in the introduction to UDC International Medium Edition, DDC had, even in the 19th century, played a significant section in establishing the norm of a systematic code denoting the subject since a primary means of arranging and retrieving literature in libraries. Due to this virtue of DDC, it was natural for the scheme to draw the attention of a renowned Belgian bibliographer, Paul Otlet. This was in 1895 when Otlet, in collaboration with Henri La Fontaine, was working on a Universal Bibliography under the auspices of Institute International de Bibliography in Brussels. The projected compilation with which the two Belgian bibliographers
were busy was described Universal Bibliographic Repertory, a comprehensive classified index to all published fact.

Otlet was in search of a means for arranging the entries of the intended Universal Bibliography and he establishes the DDC to be mainly useful for the purpose. He so obtained permission from Melvil Dewey to translate his classification into French. Otlet and La Fontaine were impressed through the following merits of DDC:

- It was a classification of human knowledge;
- It was an international language of numbers; and
- The decimal numbers that comprised the language of DDC could be easily extended to accommodate not only new subjects, but also the details thus essential for an international bibliography.

Though, Otlet was not satisfied with presently borrowing the DDC text and translating it into French. His necessity is credited with developing decimal classification further into a versatile means of arranging and retrieving literature. Many innovations were introduced into the original scheme. Therefore:

- UDC became a highly synthetic scheme.
- Many dealings flanked by subjects were recognized and symbols were assigned to symbolize them.
- Features general to several subjects were listed separately since tables of auxiliary numbers, which could be added where required.

Due to the introduction of auxiliaries and other synthetic characteristics, UDC achieved a higher stage of detail in numbers and economy of presentation. The stage of detail worked out through Otlet and La Fontaine in the French version of DDC due to their innovations served well the purpose of their Repertory.

The first edition of UDC, described Handbook to the Universal Bibliographic Repertory in French, was published through the Institute International de Bibliography (IIB) from 1904 to 1907. The second edition was brought out throughout 1927 to 1933. The job of revision and expansion went on before World War I. This was particularly thus in the case of Science and Technology parts.

The expansion of these parts was the job of Donker Duyvis from the Netherlands, who was then one of the editors of UDC. The expansion of the original classification was thus long that the number of subdivisions rose from-33-000 in the-first edition to-70,000 in the second edition and 1,40,000 in the third, which were published flanked by 1934 and 1951.

The credit for introducing and popularizing UDC in the United Kingdom, and from there to the Commonwealth countries, goes to S.C. Bradford, a pioneer in the field of documentation:
Thai TTOC came to be, regarded since possibly the mainly satisfactory scheme for classifying science and technology literature is also mainly due to Bradford. The responsibility for publishing a full edition of UDC in English was initially taken through the British Society for International Bibliography and ASLIB jointly and many sections were published through 1939. Though, it was later taken in excess of through the British Standards Institution (BSI). The UDC and its sections have ever as been published since British Standards. The UDC International Medium Edition (BS 1000M: 1985) was published in 1985 in two sections—Section I: Systematic Tables (1985); and Section II: Alphabetical Subject Index (1988). The latest is IME, English Text, Edition 2 (BS OOOM). Section 1: Systematic Tables; and Section If: Alphabetical Subject Index. BSL 1993.

English, French and German are the official words for the maintenance of UDC. The original Institute International de Bibliography became, in 1931, the Institute International de Documentation. Another transform in name came in 1937. It became the Federation International de Documentation (FID) with its headquarters at The Hague in the Netherlands. Recently, FID has added the word fact to its name., It is now Federation International d, Fact et de Documentation/International Federation for Fact and Documentation. Authorized amendments to UDC seem annually in the form of Extensions and Corrections to the LTDC. Initially, this was a six-monthly publication.

Nature and Building

You are now aware that UDC is based on DDC and that it is an improvement upon the original DD scheme. The manifold improvements apparent in UDC may be summed up since follows:

- Both DDC and UDC are common classifications. Though, special subject editions of UDC are accessible and each of these can be placed under the category of special classification.
- The degree of detail achieved through UDC, through general and special auxiliaries, and through other devices, creates it appropriate for bibliographic exploit. It is because of this cause that the editors of UDC call it bibliographic classification since against DDC, which is regarded since a library classification.
- Though both DDC and UDC are simply enumerative classifications, UDC is nevertheless a faceted scheme because of its practice of identifying features general to several categories and arranging them in tables. Each of these is a facet.

In one respect, though, both DDC and UDC are still same in. that they are Aspect classifications, meaning the several characteristics of a subject happen at dissimilar spaces in the
scene according to the—context. It is only the index collects at one lay the otherwise scattered characteristics of a subject. Take the following instance from the index to the abridged edition published in 1961:

- Marine:
  - biology: 557(26)
  - craft: 629.12
  - denudation: 551.35.054
  - engineering: 629Q621
  - insurance: 36813
  - products: 639

Marine is a concept word and according to the context in which it is used, it gets distributed at six dissimilar spaces in the scheme. The instance also illustrates how the index collects at one lay all characteristics of subject. There are two types of tables in UDC, which include the total classification: the main tables and the auxiliary tables. The main tables are also described schedules and symbolize the enumerative aspect of UDC. The auxiliary tables provide the analytico-synthetic character to the scheme.

**Main Tables**

UDC, like DISC, regards the whole field of human knowledge since unity, i.e., one, which is divided into ten broadest classe denoted through decimal fractions. These ten broad classes are:

- 0: Generalities Science and Knowledge Organization Fact, etc.
- 1: Philosophy Psychology
- 2: Religion Theology
- 3: Social Sciences Economics Law Government..., etc.
- 4: Vacant
- 5: Mathematics and natural sciences
- 6: Applied sciences Medicine Technology
- 7: The arts Recreation Entertainment Sport
- 8: Language Linguistics Literature
- 9: Geography Biography History

For the sake of convenience, the initial decimal point is omitted. Thus, 0 is presently 0 and 1 is presently 1 and thus on. Class 4 was cancelled in 1963 to create room for future evolution and the original subject linguistics (class 4), was merged with class 8 in literature.
**Generalities**

UDC has urbanized a long class of generalities from 001 to 09. The generalities trade with science and knowledge in common, organization, fact, documentation, librarianship, organizations, publications, etc. which are not self-governing disciplines through themselves but are relevant at once to the whole corpus of knowledge. The generalities are:

- **00 1**: Science and Knowledge in Common, etc.
- **00 2**: Documentation. Books. Script. Authorship
- **00 4**: Vacant
- **00 6**: Standardization and Standards..., etc.
- **00 7**: Action and Organizing. Fact. Discourse and manage theory..., etc.
- **00 8**: Civilization. Civilization. Progress
- **00 9**: Humanities. Arts. Subjects in Common.

There is another set under the class Generalities, from 01 to 09, since follows:

- **01**: Bibliography and Bibliographies Catalogues
- **02**: Librarianship
- **03**: Encyclopedias, Common Reference Jobs
- **04**: Collections Pamphlets Lectures Papers
- **05**: Serial Publications Periodicals
- **06**: Organizations, Associations, Congresses Exhibitions, Museums
- **07**: Newspapers Journalism, The Press
- **08**: Polygraphies, Communal Woks
- **09**: Manuscripts, Unusual and Extra ordinary Jobs..., etc.

What is to be remembered is that while generalities are used since self-governing numbers, general auxiliaries of form are always used in conjunction with class numbers and they are enclosed in parentheses. Therefore:

- **030.1**: Encyclopedia Britannica (easy number)
- **02(031)**: Encyclopedia of librar14nship (general auxiliary)
Having seen the class Generalities, since suggested, now turn our attention hack to theoretical classes.

**Theoretical Classes**

We have seen that UDC divides the whole of human knowledge into ten broad classes, I—9. These are recognized since theoretical classes. Each of these theoretical classes is further divided to form ten narrower classes since follows. Let us take 5 **Mathematics and Natural Sciences** and see how it is divided.

- 50: Generalities in relation to the Pure Sciences
- 51: Mathematics
- 53: Physics
- 54: Chemistry. Mineralogical Sciences
- 55: Earth Science. Geology Mineralogy, etc.
- 56: Palaeontology
- 57: Biological Sciences in Common
- 58: Botany
- 59: Zoology

As 50-5 is logical subdivisions of the broad class 5, they retain the initial 5. The UDC notation here deviates from the DDC principle of three-digit minimum. In the first of the lists, the numbers are of only one digit (0-9), while in the second they are each of two digits (50-59). You will, therefore, notice that with decreasing extension, and so with rising intension, the number gets longer. Any of the two-digit numbers can be further subdivided to get ten classes, each denoted through a three-digit number. The editors of UDC International Medium Edition call this numeric hierarchy reflecting the conceptual hierarchy. In short, the length of the -number is indicative of the degree of detail. It can be seen through dividing 53 Physics from the list.

- 531: Common Mechanical Mechanics of Solid and Rigid Bodies
- 532: Fluid Mechanics in Common Mechanics of Liquids
- 534: Vibrations. Acoustics
- 535: Optics
- 536: Heat. Thermodynamics
- 537: Electricity, Magnetism, Electromagnetism
- 5389: Physics of Condensed Matter
- 539: Physical Nature of Matter
We can see for ourselves how numeric hierarchy reflects the conceptual hierarchy. Each broader class is divided into ten narrower classes through adding a digit and, likewise, each narrower class thus got into still narrower classes the similar method until no further subdivisions are possible. Through short listing our instance the two hierarchies – numeric and conceptual -will be self-apparent. Therefore:

- 5: Natural Sciences
- 53: Physics
- 535: Optics
- 535.6: Colors and their properties. Color theory
- 535.64: Color organizations..., etc.
- 535-643: Trichromatic organizations
- 535.643.2: Average chromaticity organizations

We moved down the numeric hierarchy from 5 (the broadest class) to 535.643.2 (the narrowest class) through adding one digit at a time in all. Likewise, with every division, we moved down the conceptual hierarchy from natural sciences to average dichromatic organization studied in optics under physics, a natural science, from the class of greatest extension to the class of highest intension. You will do well to keep in mind here that the digit added to a class to derive ten, or in few cases fewer sub—divisions symbolizes a feature which is the foundation of division.

In a hierarchy, each class that gets divide is described super ordinate. Its subdivisions are coordinate in the middle of themselves. They are though subordinate to the class from which they are derived.

The main tables of UDC, since stated earlier symbolize its enumeration character we can now revise its synthetic character since reflected in its auxiliary tables.

**Auxiliary Tables**

UDC has urbanized two types of auxiliaries: general and special. These auxiliaries measured UDCs mainly innovative and influential characteristic. It is with the help of these auxiliary notations that compound numbers are constructed. A compound number is always constructed through synthesizing units from more than one lay in the tables. For examples, we saw two numbers in our discussion on the class, Generalities. They are:

- 030.1: Encyclopedia Britannica
- 02(031): Encyclopedia of librarianship
The 030.1 is an easy number taken from one lay from the Generalities table, whereas 02(031) is a compound number, since the two units 02 librarianship and (031) encyclopedia are taken from distinct tables, viz, Generalities and general auxiliaries. This second number symbolizes synthesis.

The general auxiliaries denote, in the languages of the editors, usually recurrent features, meaning that they are characteristics general to all subjects. The special auxiliaries denote in the vicinity recurrent feature, meaning peculiar to sure subjects only since suggested, first see the general auxiliaries and then see the special auxiliaries.

**General Auxiliaries**

For the general auxiliaries there are two types of symbols: signs and sub-divisions.

**Signs:** Signs are relaters indicating the connection flanked by the two numbers brought jointly to form a compound concept. These signs are:

- +. Plus meaning and 622+669 Mining and metallurgy Stroke meaning from...to... (7/8) North and Central America and South America Colon meaning reversible relation—17:7 Ethics in relation to art or 7:17 Art in relation to ethics
- :: Double Colon meaning irreversible relation 77.044:: 355 War photography. As it is irreversible, it cannot be 355::77.044
- [ ] Square brackets meaning sub grouping since understood in algebra [622+669].(485) Mining and metallurgy in Sweden

These signs are then relaters that link UDC numbers. They are not through themselves numbers. They, so, cannot be subdivided. The plus sign connects related but nonconsecutive numbers. The stroke connects consecutive numbers, e.g., (7) and (8) (North and Central America, and South America). So, 6431645 would mean 643+644+645. The colon designates the connection flanked by two coordinate classes, since in 17:7 where the meaning does not transform even if the order of the classes in it is reversed. The square brackets are an algebraic sub-grouping device to denote, an intricate subject shaped through two or more main numbers with a plus sign or colon. This, since a whole, is related to another subject through a colon, or customized through a general or special auxiliary.

- [622+669] (485): Mining and metallurgy in Sweden. (mining and metallurgy taken since a whole and customized through a general auxiliary of lay Sweden)
- 31:[622+669] (485): (mining and metallurgy taken since a whole and related to another subject -statistics)
The double colon fixes the order of the components in a compound subject. Therefore, 77.044:: 355 War photography, where 77.044 is news photography and 355 is war, can only be placed under news photography, and not under war. Thus, the number is not reversible.

**Auxiliary Sub-divisions**

The general auxiliary sub-divisions are given since numeric tables. They are hierarchically enumerated. Though they resemble the main tables, they are distinguished through their own symbols. These symbols are prefixed to the number, or they enclose the number. These general auxiliaries are characteristics recurring in all or mainly subjects. They are listed only once in the scheme in order that they may be taken out and attached where they are required... The general auxiliary subdivisions, therefore, facilitate synthesis and make mnemonics. The symbols that are associated with them can be taken since facet indicators, e.g., parenthesis indicating the legroom facet and quotation spots revealing the time facet.

There are two clusters of the general auxiliary sub-divisions: the self-governing and the dependent auxiliary tables. Both are affixed to any UDC number where suitable. Though, the self-governing auxiliary subdivisions may additionally be used on their own to form the whole class number for a document.

**Special Auxiliaries**

Unlike general auxiliaries, special auxiliaries are not listed at one lay in UDC since they are in the vicinity recurrent features, meaning they do not have long applicability. Special auxiliaries are listed at several spaces in the tables and express the concepts that are applicable within the subject under whom they are thus listed mainly special auxiliaries are enumerative. There is only one synthesizing sign, which is apostrophe ('). As special auxiliaries are applicable only where they are indicated, the similar notation may be used elsewhere with a dissimilar meaning attached to it. The special auxiliaries are suffixed to main numbers and, since such, cannot be used since self-governing numbers.

Instructions on the applicability of special auxiliaries are provided in the tables wherever they are applicable. For instance, in 62 Engineering, we approach crossways the following instruction:

- The special auxiliaries -1/-9 listed here fewer than 62 are applicable throughout 62/69 except for where otherwise indicated.

There are three types of notations used in special auxiliaries. They are:

- The hyphen series: -1/-9 serving to indicate units, components, properties and other details of the subject denoted through the main number to which they apply. For instance,
the series 62-1/-9, applicable throughout 62/69, denotes engineering and mechanical details.

- The point-naught series: .01/.09 denoting aspect studies, behaviors, procedures, operations, plant and equipment. For instance, 3.07/.8 means authorities and personnel in authorities.

- The apostrophe series: `1/9. Unlike the hyphen and point-nought series, these are synthetic and integrative in function and denote compound subjects. They are at spaces fully listed, but elsewhere are derived through the UDCs device of similarity division. For instance,

  329.172312 Nationalist-Republican-Liberal parties (synthesis of 329.17, 329.23 acid 329.12)

Special auxiliaries may be used singly, or in combination with other auxiliaries:

- 329.052: Opposition parties and
- 320.053.52: Opposition splinter pasties

**Similarity Division**

There is another device in UDC, which is same to special auxiliaries, and particularly to add-to instructions in DDC. It consists in the exploit of the similar notation to denote a given concept in more than one lay. It is described similarity division, signaled in the tables through the sub-divide sign since. This sign designates that the number preceding it has to be divided since the number following it. This will result in an analogous array with the similar concepts expressed through the similar sequence of digits.

**Notation**

You already know that notation is a code on behalf of the concepts in a classification scheme and usually expressing their order. The UDC notation consists of the following sets of symbols:

- The ten Indo-Arabic numerals: 0, 1 to 9.
- The Roman alphabets both capital and lower case.
- Punctuation spots like point, semi-colon, colon and inverted commas.
- Mathematical signs: the plus and the equals.
- Along these, it comprises parentheses, square brackets, the stroke and the apostrophe.
This, then, is the complete organization of symbols used in UDC since its notation. The numerals are used to divide the whole of human knowledge into ten broad classes each of which has been further divided to form ten theoretical classes and thus on. Roman letters are used in such spaces where the subject can be bigger recognized through their exploit, for instance, in the class Literature. The punctuation spots and mathematical signs are used since connecting symbols to build compound numbers through adding to the foundation numbers from the auxiliary tables. The numbers carry ordinal value and not arithmetical value, meaning they are decimal fractions and not integers. This facilitates division of a class at any point in the order without disturbing it.

**Hospitality**

Because the UDC notation consists of numbers, which are taken since decimal fractions, it can accommodate emerging new thoughts, where suitable, ad infinites. This is thus in the case of not only main numbers but auxiliaries since well. The notation is, therefore, Mispitable and capable of reaching the required stage of detail. As it is hierarchic, moving from the common to the scrupulous, it expresses the order of classes. Take the following instance:

- 6: Technology
- 62: Engineering
- 621: Mechanical Engineering... Electric Engineering. Machinery
- 611.3: Electrical engineering
- 621.39: Telecommunication. Tele control
- 621.396: Radio communication tools and ways (Radio).
- 621.396.7: Radio stations

At any lay in this hierarchic chain any new concept can be accommodated without disturbing the order of existing concepts. The division on the foundation of decreasing extension clearly expresses the order of classes in the hierarchy.

**Facilitation and Synthesis**

The editors of UDC claim that the scheme is faceted. Every recurrent category is a facet and the best instance of facilitation is presented through its tables of general auxiliaries. It also uses a device described intercalation to transform, since required, the citation order of facets with a view to make a more helpful sequence. The UDC is so, a faceted classification.

It is also a highly synthetic scheme. Ordinarily, every faceted scheme is synthetic in building. Though, in addition to facilitation in the form of general auxiliary subdivisions, UDC also contains a number of other synthetic devices such since:
- The exploit of signs (+9, [ ], ::) to connect two or more numbers.
- The exploit of the apostrophe () in special auxiliaries.
- The facility to combine, in a single number, two special auxiliaries.

In short, if the main tables of UDC display its hierarchical enumerative character, the auxiliary tables symbolize its faceted and synthetic building.

**Intercalation**

You are already aware that the citation order for facets is flexible in UDC. Intercalation is the exploit of the auxiliary since an infix. Generally, an auxiliary is prefixed or suffixed to a main number. In UDC, it can also be infixed to interrupt a main number. This, at times, becomes necessary to give an alternative style. For instance:

- 622: Mining
- 622(410): Mining in Britain
- 622.333: Mining of coal
- 622.333(410): Mining of coal in Britain
- 622.34: Mining of metal ores
- 622.34(410): Mining of metal ores in Britain

The books in relation to the mining in Britain get scattered throughout the class Mining. Ideally, if required, all books on British mining should be brought jointly. It is possible to bring them jointly, if the auxiliary number for legroom in the case is used since an infix and allowed to interrupt the main number since follows:

- 622
- 622(410)
- 622(410)333
- 622(410).34

**Mnemonics**

The general auxiliary sub-divisions and the similarity division are two principal mnemonic devices used in UDC. Mnemonics results from the exploit of the similar notation on behalf of a given concept wherever that concept occurs in the scheme.
Filing Order

The filing order of UDC symbols is based on a progression from the common to the scrupulous. Therefore, a general auxiliary used since a self-governing number is filed before a main number. This is followed through a compound number having the plus sign or the stroke in it, since it is broader in meaning than an easy number. Next, the easy numbers are filed in the order of rising length. The length designates specificity (due to an auxiliary) or particularity (due to hierarchical division).

Evaluation

The UDC notation is hospitable and expressive. It is simply enumerative, moving from the common to the scrupulous, and contains synthetic devices. Since a result, the numbers are at times extremely extensive. The notation has achieved the necessary specificity and particularity, but, in the procedure, has become clumsy. The general auxiliary sub-divisions and similarity division lend a mnemonic character to IM notation, and the device of intercalation brings flexibility in facet order to create it versatile.

Alphabetical Subject Index

Section 2 of IME is the Alphabetical Subject Index published in 1988. The entries in the index reflect the terminology used in the schedules. In mainly cases qualifiers have not been added under each word indicating the context in which the word is used. To tide in excess of this problem few index entries consist of a word followed through many class numbers. For instance Axes is indexed and unqualified to five numbers 581.44, 621.968, 622.231, 631.342, 672.719. To understand the contexts in which these five class numbers are used, one has to refer to the schedules.

The index does not fully indicate the context of the conditions listed. But it does indicate the range of possible sites for a scrupulous concept. The arrangement of entries in the index is word-through-word. The users of the index are advised not to classify a document solely on the foundation of index but to verify the class number in the schedules. Here is an example entry from the index:

- Lighters: 629.123.15, 662.58
- Cigar and cigarette: 662.592
- Electric: 662.593
- Flint: 662392
- Pocket: 662.59—
- Bby solar heat: 662.591
Provision for Future Expansion

The UDC notation is decimal and can accommodate emerging new concepts wherever necessary. In addition to this in-built provision, UDC has resorted to what is described as a gap device. These gaps in the notation are meant for accommodating a big number of subdivisions and are left where future expansion is envisaged. We discover the following vacant numbers in the notation:

- 142—159.8 : in Philosophy and Psychology
- 375 : in Education
- 4 : the class philology transferred to 8 Literature
- 538.1 — 538.8 : in Physics
- 544 – 545 : in Chemistry

Maintenance of UDC

The responsibility for the maintenance and updating of UDC lies with the International Federation for Fact and Documentation (FID). The FID jobs in conjunction with national organizations having consultative arrangements with users of the scheme. It is the Classification Sector of FID that maintains the Master Version of UDC incorporating all approved amendments. The scheme is periodically revised. The amendments proposed through users through their national agencies are circulated since P-Notes to subscribers. After they become acceptable—they could since well be enlarged, abridged or withdrawn—they are published in UDCs annual periodical Extensions, and Corrections to C. It is the responsibility of user libraries to carry out the amendments appearing in this periodical to ensure up to date. Proposals for amendments are welcome from all users of UDC.

Merits and Demerits of UDC

Although UDC has sure drawbacks inherited from DDC, it certainly has more merits to its credit. As its beginning, efforts have been made to adapt the scheme to universal requires in pursuance of its initial objective of establishing and maintaining a universal bibliography. It is worth while to understand the merits of UDC.
As UDC is a common scheme of classification, it covers the whole field of human knowledge. The procedure of dividing a class into ten subclasses is accepted to the required degree of specificity. The required degree of detail is achieved with the help of general and special auxiliaries. The resultant subject account is of utmost precision.

- Its notation consists of numerals and signs, which are understood internationally. The decimal notation allows maximum hospitality for the admission of new conditions.
- The UDC is an analytico-synthetic classification because of the exploit of an auxiliary tools of relationship.
- It is very flexible, i.e., adjustments to regional requires can be made with relative ease. This is because the citation orders in any given class often allows many alternative treatments (intercalation and reversible relation).
- It is ideally suited to special libraries, since its full edition contains subject schedules of minute account. Special subject editions are also separately accessible. The medium edition can take care of approximately all subjects.
- It shapes a cautiously organized and comprehensive vocabulary of conditions (in its index) for indexing and retrieval. It may be used since a thesaurus.
- It is amenable to computerization.
- The users are able to participate in its revision.

It also has sure drawbacks. They are:

- The notation often tends to be extensive and seems clumsy. Since a result, its exploit on the shelves becomes hard.
- User participation in revision has created unevenness in the scheme at spaces. It also delays revision of schedules until they become out of date.
- The revision involves publication of many dissimilar editions and their dissimilar language versions for which RD discovers its funds inadequate.

**COLON CLASSIFICATION (CC)**

**Genesis of Colon Classification**

Ranganathan was a mathematics lecturer. It was a mere accident that he was appointed Librarian of the Madras University Library in the year 1924. He was soon deputed to Britain for an observational tour of British libraries. While in Britain he also attended classes in the School of Librarianship, University of London. Berwick Sayers, recognized since the grammarian of library classification, was one of the teachers at the School. Throughout his tour of Britain;
Ranganathan visited many libraries and was quick to notice the lacunae in the classification schemes in exploit then.

A chance visit to a departmental store in London gave Ranganathan a clue for evolving a scheme of classification. He saw the demonstration of a toy described meccano set. The meccano set consists of many slotted strips, rods, wheels, screws, nuts and bolts with which many dissimilar models could be made. This gave him the thought that in a classification scheme there should be average elements that could be joined through connecting symbols. Ranganathans average elements resembled the strips and his connecting symbols resembled the nuts and bolts of the meccano set. The average elements became the schedules. Therefore, a class number could be constructed with the dissimilar units enumerated in the schedules with a connecting symbol and he chose the colon since the connecting symbol. This was, dip, Ranganathans conception of Colon Classification.

The base of Colon Classification was laid in Britain in the year 1924. In 1925, his journey back to India gave Ranganathan ample time to job on the schedules. The library on the ship he was traveling in and the Madras University Libraries’ book catalogue, which he was carrying with him served since the working equipment for him.

**First Edition**

On reaching Madras he took up the job of classifying the Madras University Library collection. The years flanked by 1925 and 1932 were devoted mainly to the \construction of the schedules of CC. In 1929, he also recognized a library school at the University. Both teaching and library job at the University contributed immensely to the publication n 1933 of the first edition of Colon Classification. It had three separate par: 127 pages of rules explaining the underlying principles, 135 pages of schedules and 106 pages Of index. The notation was mixed, consisting of the-26 Roman capital letters denoting main classes, Indo-Arabic numerals—and also Roman lower case letters. The colon (:) was used since the connecting symbol for joining facets. Each main class was provided with a facet formula.

**Search for Theory**

Ranganathan was aware of many inconsistencies in his scheme and did not fight shy of consulting subjects’ experts to know the gamut of each discipline. At the similar time he tried to evolve a theory of library classification. The years from 1933 to 1939 were spent in working on the theory of classification. It was throughout these years that many Canons of Classification were formulated. The result was the publication of Prolegomena to Library Classification in 1937. Based on this theory, the second edition of Colon Classification was published in 1939. The transforms from the first to the second edition were not substantial. In this edition, two new,
concepts of Octave principles and auto-bias device were introduced. The first edition, since already said, had three sections. A fourth section was added in the second edition. This additional section contained in relation to the 3,000 examples, which were illustrative of the rules given in the first section.

**Subsequent Editions**

In 1945, Ranganathan shifted to Banaras. He spent two years at Banaras Hindu University from 1945 to 1947. He was, though, bogged down in administrative job and all research came to a standstill.

It was Sir Maurice Gwyer, the then vice-chancellor of Delhi University, who invited, Ranganathan to Delhi and gave him all facilities to devote himself to serious research. The eight years from 1947 to 1955 that he stayed at Delhi University were productive. Team research became possible, and a quarterly journal, *Abgila*, became the instrument to publish the research findings.

After a lapse of eleven years the third edition of Colon Classification emerged in 1950 without any major modifications. There were, though, some transforms in terminology. The findings of research at Delhi culminated in a dynamic theory of library classification. A major finding was that in any subject there could be only five ingredients. This gave rise to the Postulate of Five Fundamental Categories, which was stated since Personality, Matter, Power, Legroom and Time (PMEST). The postulate further stated that these five fundamental categories; fall in the sequence of PMEST.

The indicator digit for time was later changed to a single inverted comma ('). The ordinal value of the connecting symbols was also determined. These findings were incorporated in the fourth edition of Colon Classification (1952) and the second edition of Prolegomena to Library Classification, published in 1957.

The fifth edition emerged in the year 1957. The fifth edition had made many transforms both in the rules and also in the schedules. Several Greek letters were introduced in the fourth edition to expand the foundation of the main classes. These were establish to be irritants and were replaced in the sixth edition through empty and emptying digits. Few transforms were also affected in some main classes. In addition, the second stage of legroom and time facets was introduced. Meanwhile, the sixth edition of Colon Classification was published in 1960. At in relation to the time, Ranganathan had shifted to Bangalore. A new centre, Documentation Research and Training Centre (DRTC), was recognized through the Indian Statistical Institute with Ranganathan since its honorary professor. At DRTC, Ranganathan was assisted through a
team of researchers. DRTC brought out many special schedules of classification based on the new research findings.

In 1963, a reprint of the sixth edition was published with some corrections and amendments. At that time an announcement was made that the seventh edition would be, brought out incorporating all the new findings. Unluckily, Ranganathan passed absent in 1972 and the job was delayed. The extensive awaited seventh edition of Colon Classification with substantial transforms from the earlier editions emerged in 1987, without an Index.

Vital Principles in Colon Classification

Each main class is divided into facets. All facets are regarded since manifestations of five fundamental categories. The conditions are:

- Main classes,
- Array,
- Facet, and
- Fundamental categories.

Main classes

The main classes in CC are like disciplines in DDC and theoretical subjects in UDC. They are the traditional subjects, which you are well acquainted with, like mathematics, physics, history, political science and soon. The number of main classes in CC is greater than those in DDC and UDC.

Array

The dictionary meaning of array is a systematic arrangement of numbers or symbols in an orderly manner. In CC also, it means the similar since its dictionary meaning. The arrangement, though, is referred to since the preferred sequence. The numbers, in a classification refer to a division of a subject on the foundation—of a, single feature. For instance, in medicine, the organs of the human body form the array—of organs.

Facet

A facet is a feature through which a class is divided/grouped. Each main class is divided into facets to signify the whole series of arrays based on, a set of related features of division. In the main class Literature, all enumerated words, after which the national -literatures are recognized, constitute in DDC, the language facet of that class. In the similar class, all literary
shapes (poetry, drama, fiction, etc.) constitute another facet. It may also be stated here that within a facet an individual member is described a focus. Hindi literature, for instance, is a focus in the language facet of the class Literature.

**Fundamental categories**

To understand the vital principles of CC you have to first understand few of the rules framed through Ranganathan. He calls them postulates. One postulate states that there are five fundamental categories (FC), viz., personality [P], matter [M], power [E], legroom [S], and time [T], PMEST for short.

A postulate is a presumption or assumption, which is never put to test. It is a foundation for argument and hence one is not supposed to question the veracity of the assumption. That is the meaning of a postulate. According to Ranganathan, in any given subject, there may be a maximum of five fundamental categories. There can be less, but in no case more than five. They also approach in the order of PMEST according to their decreasing concreteness.

If you are able to identify the fundamental categories in a given subject, you can classify any subject. Hence, you necessity have a clear perception of each of the five fundamental categories since suggested, take up the five fundamental categories one through one for discussion in the reverse order.

**Time and Legroom**

These two have the usual meaning recognized to you. A century, a decade, a year, a month, a day, an hour is all indicators of time. If the subject is stated since Economic circumstances of India in the 19th century, you can identify the time unit in it. In few subjects, it may not be stated explicitly, e.g., Economic circumstances throughout the reign of Akbar. In this instance, the fundamental category time is concealed, but still identifiable.

In the similar method, it is fairly easy to locate the legroom unit in a subject. You can discover the legroom facet, i.e. India. Legroom is indicated through conditions like continent, country, municipality, village, etc. All these approach under the facet legroom.

**Power**

The next fundamental category is power. Power refers to few kind of action. In the subject medicine, diagnosis or treatment falls under the facet power. It illustrates action. In agriculture, ploughing is power, in education teaching is power, and in sociology relief job is power, and thus on.
Matter

There is a major transform in the seventh edition of CC in the case of the fundamental category matter. Up to the sixth edition, Matter was present only in some main classes. There is a complete reversal in the seventh edition. In sure cases, what was measured power now shapes section of the matter facet. Along, the fundamental category matter has undergone few other transforms. It is distinguished since Matter Property [MP], Matter Material [MMt] and Matter Way [MM].

It is only matter property, which has approximately replaced the fundamental category power. To explain matter with a concrete instance, in the class medicine, anatomy, physiology and diseases are viewed since manifestations of matter property. Likewise, in the main class agriculture, soil, manure, propagation, etc. are treated since manifestations of matter property. In the main class fine arts, under the class drawing, pencil drawing, ink drawing, and cartoon drawing are measured since a manifestation of matter way. In technology, product, and in biology object are manifestation of matter material.

Hence, in a given subject, it is not hard to recognize the fundamental categories of time, legroom, power and matter.

Personality

The fundamental category personality has evaded definition. Ranganathan establish a Method out to recognize personality through the way of residue, i.e., when it cannot be any other fundamental category it is assigned to personality. Though, experience in the design of depth schedules suggests that it is possible to identify a core concept in compound subjects going with a vital subject, such since, Human Body in Medicine. Such a care concept is deemed to be a manifestation of Personality.

Postulates of Vital Facet

Once you determine the dissimilar fundamental categories, they are to be attached to a vital class in the order of PMEST. In CC, originally there were almost 30 such main classes. This number rose to 47 in the sixth edition. You can discover that several of the main classes listed in the seventh edition are not exactly vital subjects since you know them. If you take, for instance, B Mathematics, the dissimilar subjects listed under it seem more like its extensions. Likewise properties of matter, sound, heat, electricity, magnetism etc., under C Physics are only adjuncts to the main class C. But in classifying, it creates a variation. C6 Electricity, 6 is not a fundamental category, but is section of the vital class, and hence a distinct facet formula had to be given for it.
**Planes of Job**

According to Ranganathan, there are three planes of job through which a scheme of library classification passes. The three planes are Thought plane, herbal plane and Notational plane.

A scheme of library classification has to first enumerate the Universe of Subjects, state their interrelations and fix their order. This is done in the thought plane. The findings of the thought plane are to be represented in conditions. This is the verbal plane of job. Lastly, these conditions are transformed into a notation. This last plane of job is recognized since the notational plane. There are therefore three planes of job: thought, verbal and notational.

**Rounds and Stages**

Having recognized five fundamental categories, it was establish that few of them manifest themselves—more than once in a subject, for instance personality, matter and power. This phenomenon was handled through the introduction of the postulates of rounds and stages. Take, distant instance, a subject like **Treatment of brain tumor through radium therapy**. In this, we have the fundamental, categories brain FET tumor [A], treatment [ER]-, and radium therapy [El 11 (E), therefore, repeats itself. Such repetition of any of to three (R M and E) fundamental categories is described round of fundamental category. These rounds are indicated since [IPI], [2PI], [113], [2E], [1Mi], [2M1] and thus on.

Let us take another instance: King Lear through Shakespeare. First you necessity discover what fundamental categories are present in this subject. The vital class is, of course; literature. The isolates are language, form of literature, author and his job. They, so, belong to the personality facet. These occurrences are referred to since stages of personality and they all fall in the first round. They are so indicated since [1P1], [1P2], [1P3], and [1P4]. They are read since first stage; first round, second stage; first round, third stage; and first round, fourth stage.

**Notation**

Ranganathan, in his theory of library classification, introduced the concept of three planes of job, which you are already well-known with. Of these, the notational plane is beset with many difficulties. It is in this sphere that much research has taken lay and many innovations have been made. You already know the meaning of notation, its function and its types since suggested, now turn our attention to the notation in CC.

**Mixed Notation —— Indicator Digits**

It consists of

- Indo-Arabic numerals, 1-9
Empty Digit

To augment the capability of an array, CC has introduced what is described an empty digit. An empty digit has no semantic value, but it retains the ordinal value. Let us see the meaning of empty digit with the help of an instance. If you are by the Indo-Arabic numerals, you can exploit a maximum of nine numerals, (I to 9). If a subject & to be divided, we can divide it only up to nine spaces and the tenth and subsequent divisions cannot be accommodated. To overcome this difficulty, CC uses numerals I to 8 only and 9 is left since an empty digit. It has no value through itself, but regains its full value when it is used in combination since 91, 92, 93... 98 or 991, 992, 993... 998 and thus on. This way has given tremendous potential to augment arrays in any given facet. The similar principle has been used while by a to z, or A to Z. In lower case letters, z is made an empty digit, and in capital letters, T, V and X is postulated since empty-emptying digits and Z since empty digit. Also, CC uses a number of devices for rising hospitality and facilitating synthesis.

Devices

We have seen that new subjects always crop up and a classification scheme should be able to discover suitable spaces for such new subjects within its framework. Ranganathan provided a number of devices for this purpose. The purpose of such a device is to form a new isolate or to sharpen an existing isolate in an array. This way has substantially reduced the mass of the scheme.

Chronological Device

The purpose of this device is to sharpen a facet number. It can sharpen an isolate or form a new isolate. This is done through employing a chronological number from the schedule of time isolates. All numbers for authors in the class Literature are derived through this device. It is impracticable to enumerate all authors. The chronological device has, though, taken care of such a contingency. To provide an instance, the number for Rabindranath Tagore is 0, 157,1M61. Here, M61 stands for 1861, the year of birth of Rabindranath Tagore. This device has been used in many main classes like library science, mathematics, medicine, fine arts, psychology,
education, economics, etc. This device can be used wherever warranted. The vital class of organizations is derived through the chronological device.

**Geographical Device**

The purpose of all these devices, since stated earlier, is to form or to sharpen an isolate number in a schedule. Employing a geographical number from the schedule of legroom isolates is another mechanism of doing this. It has been used in library science, fine arts, religion, linguistics, history and in many other classes.

**Subject Device**

Subject device is used to form or sharpen a facet through adding to it (facet) another class number from elsewhere in the scheme. This device has been used in many train classes. The section of the number derived through the subject device should be enclosed in parenthesis. For instance, Medical college library is 2, J3 (L)

In library science, 2,J3 symbolizes college libraries to which is added (L) from the main class L **Medicine** to derive medical college library through subject device.

Let us take another instance of subject device. Hindu Law is Z, (Q,2) where Z is law and (Q,2) is Hindu religion from the main class Q **Religion**.

**Alphabetical Device**

Alphabetical device is also used to form or sharpen an isolate number. The device is used taking the first or the first two or three letters of the names of persons, or objects, or products widely carried since such. The device can be used wherever warranted. The following are few examples where the device is used:

- 0, 157, 3M61,G: Gora, a novel through Rabindranath Tagore Here, G stands for Gora
- 0,157,3M61, H+W: Home and the world, a novel through Tagore. Here, the initial letters of the two languages in the title are linked, by the plus sign (+). (H for Home and W for World)
- D93CM: Maruti motor car. D93C is for motor cars and M stands for Maruti
- J,381B: Basmati rice, where J,381 is rice and B is-for Basmati.

**Stage Dealings**

Nowadays we approach crossways many interdisciplinary subjects. This is the result of interaction flanked by two or more subjects. For this purpose, CC has provided a device
described Stage Relation. A stage relation may happen flanked by two or more main classes; it may also happen within one and the similar facet of a main class or within one and the similar array isolates. These three kinds are described inter-subject, intra-facet and intra-array stage dealings respectively.

Along, there are six types of stage dealings indicated in CC. These six types are:

- Common relation stage.
- Bias stage.
- Comparison stage.
- Variation stage.
- Tool stage.
- Influencing stage.

The connecting symbol for a stage relation is composed of an ampersand (&) and a relation indicator.

Following are some examples to illustrate the exploit of dissimilar types of stage dealings in CC:

- A common revise of special and university libraries—Kind: intra-facet, Type: common, No.2,14&jK
- Psychology for teachers—Kind: Inter-subject, Type: Nat, No.S&bT
- Comparison of Jainism and Buddhism—Kind: intra-facet, Type: comparison, No.61,3&m4
- Variation flanked by undergraduate and postgraduate education Kind: intra-array, Kidd: variation, No.T,181&w2
- Statistical analysis in library management—Kind: inter-subject, Type: tool, No.2:8&eBT
- Power of music on literature—Kind: inter-subject, Type: influencing, No.O&gNR.

Organizations and Specials

Up to the sixth edition of CC, organizations and specials were enumerated beside with the concerned main classes. In the seventh edition, they have been listed in the schedule of vital subjects. Though, they have been separately defined.

Organizations

The word organization vital subjects denote a division of a main class expounded after a school of idea. A school of idea is a cluster, or succession of persons devoted to few reason or philosophy. The class number for an organization is derived through the chronological device. Few examples of organization facets are:
- B6-M8: Hyperbolic geometry, where B6 is geometry and M8 means the 1880s. The number stands for an organization of geometry expounded in the 1880s.
- L-B: Ayurveda. B is 999 to 1000 BC—a organization of medicine that came into being prior to 1000 BC
- S-N14: Individualistic psychology. It means a school of psychology that came into being in 1914.
- X-N1: Communism. The number stands for an organization of economics that came into being in the 1910s.

**Specials**

The word special vital subjects denote a division of a main class in which the subject of revise is restricted in few special manners. The class number of specials is derived through enumeration. Few of the examples of special vital subjects are:

**Merits and Demerits of Colon Classification**

Due to a sound theory and the provision of a hospitable notation, CC is capable of giving a unique number for approximately every subject. The systematic order and the degree of detail due to analysis and synthesis are two great virtues of CC. Since a result, it has achieved two objectives:

- Provision of a helpful order in each class, and
- Facility in locating a given topic whether it is easy, compound or intricate.

It is claimed that CC can be effectively used in a computer-aided document finding organization.

The major drawback of CC is that there exists no machinery to stay up the revision job since in the case of DDC and UDC. The guidance provided in the recently published seventh edition is not sufficient and lacks clarity at spaces. It calls for a manual with numerous examples to explain the application of several rules. It is distant from easy, the virtue mainly cherished through the users.

**Practical Job in Colon Classification**

In chapters BB and BC of the seventh edition of CC, some numbers are worked out. You are advised to go through these examples, worked out step through step. Following are three examples given for your guidance in identifying the fundamental categories and assigning them to suitable facets.
Transplanting rice seedlings in India in the monsoon

- Agriculture — J(main class BS/BF)
- Rice — Plant [IP1]—381
- Seedling — Organ [IP2]—91
- Transplanting — Action or power [E]—D
- India—S — pace [S]—44
- Monsoon — Time [T] – v

You also know the connecting symbols for each fundamental category. The number is, so, J,381,91:D.44 `v

Treatment for headaches

- Medicine — L(BS/BF0
- Head — Organ[1P1]
- Disease — Property[MP]-4
- Ache — Pain(section of the disease)-17
- Treatment — Action[E]-6

Hence, the final number is L,18; 417:6

William Shakespeare: Merchant of Venice:

- Literature — O(BS/BF)
- Language — English[IP1]—III (from the language schedule)
- Form — Drama [1P2]—2
- Author — Shakespeare, 1564 [1P3]—J64 (chronological device)
- Job — Merchant of Venice [1P4]—M+V (alphabetical device)

The final number is, so, 0,111,2J64, M+V

DIFFERENT VERSIONS OF COLON CLASSIFICATION
Colon Classification Version 1: A Non Theory-Based Version

In order to meet the new demands of the Universe of Subjects, the design of Colon Classification Version 1 was begun in 1924 and its First Edition was published in 1933. Through in relation to the time, the state of the Universe of Subjects began to present several more proliferations thrown forth practically at the end of each isolate facet and of even the Vital Facet of Compound Subject. These proliferations had attracted enough literary warrant through 1924.

This factor necessitated the total abandoning of the enumeration of Compound Subjects. So, Colon Classification gave only short schedules of Vital Subjects, and of dissimilar General Isolates-namely, Time, Legroom, Language, and Anteriorising ones; and in addition, some short schedules of Special Isolates for exploit in Compound Subjects going with the respective Vital Subjects. An implication of this was that Class Numbers were given only for Vital Subjects and not for Compound Subjects. The construction of the Class Number for each Compound Subject had to be done through the classifier in accordance with prescribed Rules. This was a sharp departure from what was in vogue in the earlier schemes. It was this new characteristic that led H.E. Bliss to define Colon Classification since Synthetic Classification. This is thus distant since the Thought Plane goes.

In the Notational Plane, Colon Classification Version 1 used the digit: (Colon) since an Indicator Digit for every type of isolate facet.

The design of Colon Classification Version 1 was not based on any objectively formulated Theory of Classification, though few sort of theory might have guided the design from the subconscious stages.

Colon Classification Version (Ed 1 to Ed 3) worked fairly satisfactorily for in relation to the one generation—that is, tilled in relation to the 1950. Through that time, it was vaguely felt that an ad hoc scheme not based on a sound Theory of Classification could not stay step with the transforms in the Universe of Subjects. It was realized that a scheme for classification should be based on a sound Dynamic Theory. The theory has to be dynamic if it is to stay up with the rising transforms and proliferations in the Universe of Subjects.

Colon Classification Version 2: Theory-Based Version

One of the vital contributions of this Dynamic Theory which guided CC Version 2 was the isolation of the job of classification in the Thought, Verbal, and Notational Planes respectively. Before this was done, lack of capability in the Notational Plane inhibited free job in the Thought Plane.

Not only was the Notational Plane cultivated. On the other hand, there was reluctance to cultivate it. Indeed, there was even opposition to the attention being paid to it.
The exploit of popular conditions with all their homonyms and synonyms in the Verbal Plane caused confusion in the Thought Plane.

The isolation of the job in the three planes laid bare the paramount of the job in the Thought Plane and requires allowing it to develop unhindered on its own right. It also emphasized that the versatility of the Notational Plane should be progressively increased in order to enable it to implement every finding in the Thought Plane.

Require for developing homonym-free, synonym-free technological terminology for each discipline was realized. It does not matter, though, if one and the similar technological word is used in dissimilar disciplines to denote dissimilar thoughts, though the ideal would be to remove such homonyms also.

The improvement of the versatility of the Notational Plane falls entirely within the province of the library profession. But, the improvement of the Verbal Plane requires cooperation with subject specialists and linguists. Job in this matter would be necessarily slow. Till satisfactory result is achieved, the Canon of Context and the Canon of Enumeration are pressed into service to remove the edge from the fault of homonym.

Colon Classification Version 2 improved on Version 1 through basing itself on the Theory of Classification urbanized from 1950 to 1963. Version 2 was first published since edition 4 in 1952. Few further improvements were successively made in the light of the further findings of the theory. The last edition of Version 2 emerged in 1963 since Colon Classification edition 6, reprinted with Annexure. One essential new characteristic of this version is that it implemented the Postulates of five fundamental categories of Rounds and of Stages, formulated in the Thought Plane. To implement this in the Notational Plane, five dissimilar Indicator Digits were used in the lay of the single Indicator Digit used in Version 1. A dissimilar Indicator Digit now corresponds respectively to each of the five Fundamental Categories: Personality [P], Matter EMI, Power [El, Legroom [S], Time M PMEST in short.

Another essential new characteristic is the acceptance, in the Thought Plane, of the interpolation of new Main Subjects and new Incomplete Comprehensions in the array of Main Subjects. To implement the, in the Notational Plane, Greek letters were used provisionally up to edition 6 (1960), since the job in the Notational Plane could not be sustained sufficiently on explanation of more urgent job.

Colon Classification Version 2 sustained to provide fairly satisfactory service only for, in relation to the fourteen years.

**Edition 4**

Each Fundamental Category, excluding legroom and time, has been assigned with separate connecting symbols since shown in table 4.2 below.
Table 4.2: Fundamental Categories and Connecting Symbols

<table>
<thead>
<tr>
<th>Fundamental Category</th>
<th>Connecting Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personality</td>
<td>ρ: (Rho)</td>
</tr>
<tr>
<td>Matter</td>
<td>κ: (Kappa)</td>
</tr>
<tr>
<td>Energy</td>
<td>χ: (Chi)</td>
</tr>
<tr>
<td>Space</td>
<td>θ: (Theta)</td>
</tr>
<tr>
<td>Time</td>
<td>(dot)</td>
</tr>
</tbody>
</table>

In addition to the connecting symbols, a number of Greek alphabets, such since:

- β: (Beta) for Mathematical sciences
- γ: (Gama) for Physical science
- v: (Eath) for Mining
- λ: (Lambda) for Animal Husbandry
- μ: (Mu) for Humanities and social science
- Σ: (Sigma) for Social Science

This edition introduced the concept of Rounds and Stages

**Edition 5**

Sustained research in the Theory of Classification led to the publication of Edition 5 in 1957. The following substantial transforms were introduced in this edition:

- Since the constituent states in India were reorganized. The new brief schedule was given at the end of the old one.
- A new schedule giving details for Stage and Intra-face. The concept of intra-facet dealings provided little economy in the length of sure types of Class Numbers.
- The Canonical Divisions of N Fine Arts were revised. Capitals were used to denote them in lay of numerals.
- The schedules for Management and Labor in Economics were revised.
- Few substantial additions were made in the schedules for Z Law.
- Details in the schedule for J Agriculture were omitted.
- Canons for Classification were listed on pages 1.7-1.18.
- A new Main Class for Mining was including by a Greek letter V (etah).

**Edition 6**

The sixth edition published in 1960 did not have several additions. The transforms made are given below:
- Effort was made to avoid Greek letters with a some exceptions: In the context of Main Classes, they were replaced through introducing the concept of Empty Emptying and Empty-Emptying digits.
- In the reprinted schedule (1963), the connecting symbol dot (.) for the Time facet was replaced through single inverted comma (‘).
- Second stage legroom [S2] isolates and lime [T2] isolates have been introduced.
- It also incorporated substantial transforms in Education, Nuclear Physics and Nuclear Engineering schedules.
- The rules section of the scheme was reorganized and partly rewritten.
- The schedule for Book Number is the extremely first schedule in Section 2 of the scheme.
- Sure other transforms brought out in CC edition 6 were accounted in the Annexure of reprints. Noteworthy in the middle of these are changing of octave to sector.

**Colon Classification Version 3**

While CC Version I was fairly satisfactory for in relation to the 25 years; the era was reduced to almost a half in the case of CC Version 2 in spite of it being theory-based. This phenomenon was traceable to a new trend in the Universe of Subjects. Subjects of the status of article-stage began to migrate into that of book-stage, at a greater rate than before 1950.

The frequent migration of subjects from article stage to book stage indicated that a deeper and more Dynamic Theory of Classification was needed to meet the recurrence of such migrations at increasingly shorter intervals. This, in its turn, indicated that even book classification should follow the deeper and more Dynamic Theory establish necessary for article classification—that is, Depth Classification.

**New Results in Theory**

- Recognition that property Isolate should be deemed to be manifestation of Matter. Therefore, manifestations of the Matter were described Matter—property [MP] Isolates, in order to distinguish them from Matter Material [MMt] Isolates. The implementation of this concept in the Thought Plane disclosed that few of the isolates forcibly contain in the earlier years in the Problem Schedules. But later named since Power Schedules, were in reality [MP] isolates.
- To implement this finding, in the Notational Plane, the Indicator Digits for such isolates had to be changed from. (Colon) to ; (semi-colon).
- The prescription that the Indicator Digit, (Comma) require not be inserted before the first (P) isolate Number coming after a Vital Class Number or an [E] Isolate Number was establish to be false economy; and it had to be given up.
- The capability of an array in the Notational Plane was increased through divesting Roman little letters of anteriorising excellence and through restoring to digit 0 (Zero), its natural ordinal value anteriorising lying flanked by the digits z and I
- To create interpolation possible at any point in the array of Main Subject and in any other array, the digits T to Z were postulated to be either Emptying, Empty-Emptying or Empty digits. This eliminated the exploit of Greek letters.
- It was establish convenient to denote a facet made of super-imposition of isolates through the word Compound Facet. The possibility of combining three or more component sub-facets into a single Compound Facet was established to be necessary not only in Isolate Facet but also in Vital Facets.
- The theory in the Thought Plane formulated 18 principles to get helpful sequence of isolates and also the powerful Wall-Picture Principle for helpful sequence of facets and of isolates.
- Necessary improvements were made in the Theory of Notational Plane in order to implement the findings of the Thought Plane. One of the resulting advantages in the provision for augment is the number of sectors in an Array. The Mnemonic Device in the Notational Plane has—also been improved substantially.

**Transforms Made in CC Edition 7**

Sure transforms have occurred in CC Edition 7 (1987). Few of the transforms are highlighted.

- The number of Main Subjects/Vital Subjects has been increased in edition 7. This has been done in many methods:
- Few old Main Subjects and few new Main Subjects have been divided into canonical divisions, e.g., 3 Book Science, 9 Research Technique.
- In few subjects, [1PI] isolates have been treated since canonical divisions, e.g., Engineering, Technology, Geography, and Economics.
- In X Economics, few of the [E] isolates have been changed into canonical divisions.
- A new type of formation of subjects—agglomeration (Subject Bundles)—has been added since Canonical Division.
- Organizations have been changed into Vital Subjects.
- Specials have been changed into Vital Subjects.
Environmental Device has been provided to indicate habitation treatment of a Vital Subject, since a type of specials.

Compound Vital Subjects——by the Organization section, Specials section, and Canonical Division section since its components.

The indicator Digit (double inverted comma) is used to indicate an Anteiorsing Isolate, instead of Roman little letters since was done in edition 6.

Edition 7 comprises General Fundamental Category Isolates——for [E], [MIT and [P].

New indicator digit & (ampersand) is used in lay of old indicator digit 0 (zero) for Stage Relation.


Transform of [E] cum [2P] isolates into MP Isolates, e.g., 2 Library Science, C3 Sound, G Biology, L Medicine, P Linguistics, Y Sociology, etc.


Transform of Facet Building——a facet formula is in a sense meaningless; it is an anachronism.

Indicator Digit, (comma) should be inserted before Stage 1 of [P] facet in any Round in any subject.

These transforms would involve a small amount of correction job since distant since the documents already classified through edition 6. Possibly the Principle of Osmosis can be applied in the context of reclassification.

CURRENT TRENDS IN LIBRARY CLASSIFICATION

Three Separate Periods

While tracing the trends and developments throughout the hundred years of classification, Ranganathan recognized three separate periods, viz.

- Pre-facet Era (1876-1896);
- Transition to Facet Era (1897-1932); and
- Facet Era (1933-1972).

In Pre-facet Era Melvil, Deweys Decimal Classification (1876) and C.A. Cutters Expansive Classification (1879) were published. In the Transition to Facet Era Universal Decimal Classification (1897-1905) and Library of Congress Classification (1902) were
published. The Facet Era witnessed the publication of Ranganathans Colon Classification (1933), ILE. Few of these classifications have an organization or an institution to take up the responsibility for their revision, evolution, maintenance and application.

**Developments in DDC**

Until the publication of the 16th edition of Dewey Decimal Classification (DDC) in 1958, dissimilar editions were published at infrequent intervals. The 16th edition was edited through Benjamin Custer who set the pattern of a seven-year cycle. In this edition, an effort was made to reconcile the conflicting aims of integrity of notation and provision of new topics. The 17th edition was published in 1965 in two volumes, viz., V.1. This edition showed a trend towards more synthesis than earlier editions. The main thrust of the 17th edition was to remove sure anomalies that have crept in flanked by the exploit of form divisions with zero and division of subjects with the help of zero.

**18th and 19th Editions**

The 18th edition published in 1976 was in 3 volumes, viz., V.1. Tables; V.2 Schedules and V.3 Index. For the first time five more auxiliary tables, viz., T3. Subdivisions of Individual Literatures, T4 Subdivision of Individual Words, T5 Racial, Ethnic and National Clusters, T6 Words, and T7. Persons were added. These were in addition to the existing T1 Average Subdivisions and T2 Aims. The 19th edition was published in 1979 in 3 volumes. The policy that was initiated in the 17th edition was also accepted out in this edition.

**20th and 21st Editions**

The 20th edition was published in 1989 in 4 volumes and edited through John P Comaromi et al: V.1. The main objectives of this edition are: user convenience, clear instructions, more explanations, greater accessibility through expanded summaries and elimination of duplicate provisions for classifying single subjects.

The 21st edition was published in 1996 in 4 volumes and edited through Joan S. Mitchell et al. The thrust of this volume is users convenience, which comprises: 1. More fact situated strategically to guide the classifier; 2. Numerous captions have been rewritten to eliminate vague headings; 3. `Instance and Include notes were replaced with including notes; 4. The relative index has more entries than the index to the 20th edition 5 Expanded manual; and 6. Special attention has been given to reduction of U.S. and Christian bias.
**Computerization of DDC**

In July 1988 Forest Press, hitherto the publishers of DDC, became a division of Online Computer Library Center (OCLC). With this transform DDC joined the computer generation. Forest Press has been the publisher of DDC as 1911, when Melvil Dewey first used the name since imprint. Until 1988, Forest Press was a section of Lake Placid Educational base, also founded through Dewey. Edition 19 of DDC had been printed from the computer tape in 1979. The following years witnessed the emergence of a sophisticated computer-based editorial support organization and database used to produce DDC 20 and 21 editions. DDC 21 emerged in two formats: 1. In print; and 2. Dewey for Windows, a Microsoft Windows TM-based version (released in August 1996) (CD version).

**Developments in UDC**

Universal Decimal Classification (UDC) was urbanized on the foundation of Decimal Classification and was first published in 1905 entitled Classification Decimale Universalle. The scheme is revised and updated from time to time through the-International Federation for Fact and Documentation (FID).

In response to a demand from many quarters for comprehensive short editions in English, abridged editions are being brought out through the British Standards Institution (BSI), the official agency. The abridged edition BS1000A was first published in 1948. The second abridged edition with radical revision was brought out in 1957. The third abridged edition was brought out in 1961.

**IME 1985 and 1993**

The International Medium Edition (IME) was published with more long divisions to replace abridged English editions. The IME, English Text includes of two sections, Section I—Systematic Tables published in 1985 and Section II—Alphabetical Subject Index published in 1988. This edition contains in relation to the a third of the material in the full editions brought out in English, French and German. In addition to several signs and symbols already provided in Abridged English Editions (ABE), two more new symbols: -4 (the arrow) meaning see also e.g., 159.9 Psychology—4 (301.151; 591.51; 621.821; 616.89, and = (similarity divisions) meaning subdivision since have been introduced.

- e.g. 611.3 Digestive organizations. Alimentary canal
- 611.3 a (616.3, e.g., 611.31 Oral cavity)
Another IME in English was published in 1993 in two sections. The digit 4 used for Linguistics has been frozen and the Linguistics divisions have been shifted to class 8.

**UDC in Computer-Based Fact Retrieval Organizations**

It was suggested since distant since back since 1934 that UDC was appropriate for `mechanical sorting. The Royal Society Scientific Fact Conference held in 1948 noted requires exploring the potentialities of UDC in mechanized retrieval. The research programs accepted out in the USA, Britain, Germany, Denmark and Switzerland in the sixties helped UDC to be usable since an indexing language for computerized manage and processing of fact in the meadows of knowledge. The mainly important research job in this respect was the American Institute of Physics UDC Project under Freeman and Atherton. Other experiments accepted out throughout the late sixties in by UDC for special mechanical applications contain the indexing of Geo-Science Abstracts and the maintenance of user profiles in the metallurgic meadows.

**UDC and UNISIST**

FID idea of creation UDC a `Roof Scheme under which it could be hung the relevant special classifications, thesauri or descriptor lists since well since the more detailed UDC divisions themselves for those who prefer a homogeneous UDC-based organization. The concept received encouragement in the efforts to create UDC adopted since the switching language for UNISIST (United Nations World Science Fact Organization), a joint project of ICSUJUNESCO. An ASLIB revise for UNISIST stated that UDC was establishing `least unsatisfactory of the major existing schemes.

**Computerization of UDC**

For more than three decades UDC has been used advantageously in computerized bibliographical and abstracting services not only for the manufacture of subject indexes but also for fact retrieval and SDI. In the forefront of UDC mechanization has been Rigby who, since early since 1964, showed in the Conference at Elsinore the printouts of Meteorological and Geoastrophysical Titles that had started the exploit of the computer for author and subject indexing. A more comprehensive survey on the exploit of computers with the UDC was compiled through Rigby with the account of more than sixty experimental or operational organizations in fifteen countries and four international projects.
Developments in CC

You are aware that the first edition of Colon Classification (CC) intended through S.R. Ranganathan was published in 1933. It remained a Rigidly Faceted Scheme until 1952. The first effort at breaking the rigidity of a pre-determined facet formula was made in 1950. Thereafter, CC emerged since an Approximately-Freely Faceted Scheme for Classification in Edition 4 (1952). Developments in CC as 1950s were more and more towards a scientific way. The characteristic of analytico-syntheicity increased in each edition especially after the 4th edition. The major building of CC is its Vital Subject Schedules and the Schedules of Isolates. The schedule more special to a vital subject is the schedule of Personality Facet.

Publication of 7th Edition

The 7th edition of CC was published in 1987. It was proposed to be brought out in 3 volumes, viz., V.1 Schedules for Classification; and 3 Index and Worked-out Examples. But only MI Schedules for Classification was brought out in 1987. The other two volumes have not seen the light of day. In this edition, in addition to existing indicator digits in the 6th edition (1960), some more indicator digits, viz., & (ampersand), + (plus), = (equals), * (asterisk) and (double inverted comma) have been added. The fundamental category Matter \[M\] has been transformed into Matter Way (MM), Matter Property (MP) and Matter Material (MMO. This edition also provided for environmental divisions. The schedules of Vital Subjects have been greatly expanded. It also gives for General Matter Property Isolates. The schedules for Language, Time and Legroom have been greatly expanded.

Computerisation of CC

Developments in Case Western Reserve University, Ohio, indicate the power of facet analysis. Dr Fugman (ISKO, Germany) used facet analysis in his chemical analysis organization. Facet analysis is also used for shelving purposes in online fact search, Syracuse University, New York, was by PMEST in their computer-generated indexes.

In India, DRTC in 1967 wrote few computer programs based on facet analysis and tried to experiment with the exploit of CC in computers to construct class numbers. CC was also used in computer programming for SDI services and for chain indexing and cyclic indexing. The Western Ontario (Canada) School of Library and Fact Science used CC schedules for developing a thesaurus. In 1968, DRTC initiated experiments to determine the feasibility of by common purpose computers in a document – finding organization based on a classified catalogues organization by a freely-faceted version of CC.
International Conferences

In the past twelve decades major developments and trends have taken lay in library classification giving it an international perspective when compared to other traditional branches of library science such since cataloguing, indexing and abstracting. Throughout the past four decades, to be more specific as 1957, a number of international conferences have been held on library classification/ knowledge organization organized through FID/CR and the International Society for Knowledge Organization (ISKO).

**FIDICR—International Revise Conferences on Classification Research (ISCCR)**

As 1957, FID/CR has organized six International Revise Conferences on Classification Research (ISCCR). The first ISCCR was held at Dorking, England, throughout May 13-17, 1957. Ranganathan, in his opening address, dwelt upon Library Classification since a Discipline. The recommendations of this conference dealt with:

- Scope of classification;
- Schemes of classification;
- Require for research;
- Exploit of classification schemes;
- Differences flanked by organizations;
- Construction and application of schemes;
- Notation for such visually scanned organizations since the card catalogue;
- Machine organizations;
- Research projects;
- A common scheme for classification;
- Evolution of classification schemes; and
- Furtherance of. Research.

The second ISCCR was held at Elsinore, Denmark, throughout September 14-18, 1964. Ranganathan delivered the presidential address entitled Library Classification through a Century. The papers presented to this conference were grouped into five regions:

- Common theory of classification;
- Research in mechanized classification;
- Selected and special schemes;
- Evaluation techniques; and
- Directions for future jobs.
The third ISCCR was held at Bombay throughout January 6-11, 1975. The recommendations of this conference centered on:

- Common characteristics of designing ordering organizations for global fact networks;
- Exploit of empirical ways and theoretical models for designing ordering organizations for global fact networks;
- Organizations evaluation;
- Interdisciplinary contents;
- Education;
- Requires and troubles of developing countries.

The fourth ISCCR was held at Augsburg, Germany, throughout June 28—July 2, 1982. The theme of the conference was Universal Classification, Subject Analysis and Ordering Organizations.

The fifth ISCCR was held at Toronto, Canada throughout June 24-28, 1991. The theme of the conference was Classification Research for Knowledge Representation and Institutions. The papers presented to this conference fall into three broad categories:

- Common Principles and Policies;
- Building and Logic Classification; and
- Empirical Investigation.

The sixth ISCCR was held at University College, London, on June 16-19, 1997 on the topic Knowledge Organization for Fact Retrieval. The University College, London, ASLIB, Classification Research Cluster (CRG) and International Society for Knowledge Organization (ISKO) sponsored this conference. The themes discussed in this conference were:

- Role of classification in fact management;
- Classification research for retrieval of fact published electronically;
- Automatic ways of classification;
- Researcher and the real world;
- Apparatus for classification and classification since a tool; and
- Data modeling.

**ISKO International Conferences**

The International Society for Knowledge Organization (ISKO), founded in 1989, has organized four international conferences on knowledge organization.

The first International ISKO Conference was held at Darmstadt, Technological University, Germany, on August 15-17, 1990. The topic chosen was `Apparatus for Knowledge
Organization and Human Interface. The papers presented to this conference sheltered the following regions:

- Common issues pertaining to knowledge organization;
- Algorithmic text analysis;
- Terminology;
- Knowledge organization in universal organizations;
- Thesaurus issues;
- Online retrieval;
- Knowledge organization in special schemes;
- Retrieval from universal organizations;
- Retrieval technologies and indexing.

The second International ISKO Conference was held at Madras on August 26-28, 1992. The theme of the conference was ‘Cognitive Paradigms in Knowledge Organization. The papers presented at this conference were grouped into the following regions: I. Knowledge and knowledge organization;

- Knowledge seeking in libraries;
- Knowledge seeking in fact retrieval;
- Knowledge seeking in problem solving;
- Taxonomic style to knowledge organization;
- Analytico-Synthetic styles to knowledge organization;
- Cognitive paradigms and their application; and
- Cognitive paradigms in knowledge bases.

The third International ISKO Conference was held at the Royal School of Librarianship, Copenhagen, Denmark, on June 21-24, 1994. The theme of the conference was ‘Knowledge Organization and Excellence Management. The papers presented to this conference were grouped under:

- Excellence in knowledge organization;
- Theory of knowledge organization;
- Future prospects for classification schemes and thesauri;
- Knowledge organization in specific domains;
- Concept representation in organizations design;
- Linguistics in knowledge organization;

The fourth International ISKO Conference was held at James Madison Memorial Structure, Library of Congress, Washington, on July 15-19, 1996. The main theme of the
conference was `Knowledge Organization and Transform. The sub-themes on which papers were presented were:

- Library of Congress Classification;
- Management of transform in knowledge organization;
- Knowledge organization in online habitation;
- Impact of technologies on bibliographic units;
- Users focus in knowledge organization;
- Inter-disciplinary styles to knowledge organization;
- Natural language processing; and
- Dewey Decimal Classification.

Organisations, Societies and Research Clusters

Throughout the past five decades, not only individuals but several organizations, societies and research clusters have taken up the reason of library classification. They have accepted on several research behaviors to provide a new direction to library classification and to change it into an effective tool not only for shelf arrangement but also knowledge organization.

Library Research Circle (LRC)

This was founded in Delhi through S.R. Ranganathan in 1951. This circle used to meet on Sundays at Ranganathans residence to pursue research on several characteristics of classification, especially relating to Colon Classification. Its members concentrated on fundamental categories, indicator digits, rounds and stages of manifestation, zone analysis and on necessities for depth classification. The job entitled Depth Classification, published through the Indian Library Association, 1953, gives ample testimony to the contributions made through members of LRC. Its behaviors withered absent from 1954.

FID/DCR

On the initiative of Ranganathan, FID shaped a Committee on Classification Theory (FID/CA) in 1950. Later in 1961, FID/CA was renamed since the Committee on Classification Research (Fill/CR). This Committee has been stimulating classification research. The behaviors of FID/CR are communicated through a serial publication entitled FID/CR Newsletter, published four times a year listing classification research projects in progress.
Classification Research Cluster (CRG)

This Cluster was shaped in London in 1952. The early job of members of CRG is reflected in Sayers Memorial Volume (London, Library Association, 1961). CRG since a whole published a brief outline of its views on faceted classification in 1953 and later issued a memorandum entitled ‘Require for faceted classification since the foundation of all ways of fact retrieval in 1955. From 1952 to 1960 members of CRG turned their attention to the design of special schemes of library classification. CRG was of the opinion that no common classification lived which was appropriate for computer retrieval. So it was decided to develop a common classification scheme in association with the MARC Project for an automated retrieval organization. As the 1970s, CRG has been actively occupied in the following regions:

- Revision of Bibliographic Classification of I LE. Bliss through 3. Mills;
- Formulation of Broad Organization of Ordering (BSO);
- Classification Scheme on LIS; and
- PRECIS.

Documentation Research and Training Centre (DRTC)

DRTC was recognized in Bangalore in 1962 through S.R. Ranganathan. It actively promoted dissimilar stages of research in library classification. These are:

- Evolution research to develop depth schedules;
- Fundamental research to develop postulates and principles; and
- Systematic testing of depth schedules urbanized through faculty and alumni of DRTC.
- It has been organizing annual seminars on thrust regions of Library Classification and Fact Science, conducting short word courses and workshops. It is bringing out, in collaboration with Sarada Ranganathan Endowment for Library Science a quarterly journal Library Science With Slant `to Documentation and Fact Studies.

International Society for Knowledge Organization (ISKO)

This society was founded at Frankfurt, Germany, in 1989. Its founder -president is Dr Ingetraut Dahlberg. The principal aim of this society is to promote research, evolution and application of all ways for organization of knowledge in common and in scrupulous meadows, through integrating especially the conceptual styles of classification research and artificial intelligence. The society stresses philosophical, psychological and systematic styles for conceptual objects. The society gives for personal get in touch with and opportunities to the worldwide society of colleagues who devote themselves to the making, expansion, revision and application of apparatus for the organization of knowledge according to the conceptual point of
view. The society has already organized four international ISKO conferences. The society is also bringing out a quarterly journal entitled Knowledge Organization, formerly recognized since International Classification. This is devoted to concept theory, classification, and indexing and knowledge representation.

**Testing of Classification Organizations**

A number of studies have been undertaken to determine the best and mainly effective classifying and indexing ways. The best recognized studies were accepted out at Cranfield, England, under the direction of C. Cleverdon in the early sixties.

**Unisist and Broad Organization of Ordering (BSO)**

The UNISIST (United Nations World Science Fact Organization) program was started in 1971 through UNESCO since an intergovernmental program. The program was launched on the foundation of the recommendations made through the first intergovernmental conference held in 1971.

The said statement consists of a chapter on technological developments where it suggested that an average list of broad subject headings might be useful to locate and transfer big blocks of fact rather than specific document data.

ASLIB was requested to look at whether existing classification schemes would serve the purpose. An ASLIB committee felt that none of the schemes were appropriate. So, UNISIST has approach to the conclusion that a totally new scheme should be urbanized since an Average Reference Code (SRC). Later it came to be recognized since BSO.

**Fid Proposal for Average Reference Code (SRC) and BSO**

FID/CCC (International Federation for Fact and Documentation/Central Classification Committee) had been working on the feasibility of transferring UDC since a `roof scheme for other classification organizations before it entered into a contract with UNESCO on the evolution of BSO in 1971-72. But at the FID conference held in 1972 at Budapest, Hungary, it was decided to enlarge the mass of the FID/CCC panel shaped in 1971 to serve since a working cluster described FID/SRC for the purpose of preparing an Average Reference Code (SRC) which could serve since the BSO since desired through UNESCO.

A little committee recognized since FID/BSO was constituted to develop the proposed new scheme. After two and a half years of revise, the Committee presented a draft scheme described BSO, which consisted almost two thousand subject meadows in a brief hierarchical
order but without a notation. FID published the BSO—Broad Organization of Ordering: Schedule and Index in 1978.

**Special Schemes of Library Classification**

The last five decades have witnessed the emergence and publication of a number of special schemes of library classification to meet the necessities of special libraries and fact centers. The problem of creation special schemes has been subjected to rigorous investigation especially through the members of CRG and DRTC. Major problem in constructing special schemes have been mainly resolved with the evolution of faceted schedules. The norms and process for formulating depth schedules have been formulated through classificationists especially through S.R Ranganathans Design of Depth Classification Methodology (1964). The members of CRG have brought out a number of faceted special schemes. DRTC flanked by 1963 and 1975 brought out fifty depth schedules to classify a diversity of subject meadows. From 1967 to 1973, another 71 depth schedules were intended. Few of the prominent special schemes are listed below:

- Soil Earth Science, through B.C. Vickery.
- Classification of Social Sciences, 1961, through B.F. Kyle.
- British Catalogue of Music Classification, through E.J. Coates
- Diamond Technology, through J.E.L. Farradane.
- Organizing the Arts, 1968, through Peter F. Broxis.
- Classification of the Performing Arts, 1968, through Anthony Croghan.

**Library Classification and Computer**

World War II ushered in the electronic age. The computer is a versatile tool to relieve us of much of repetitive routine job with few creative units. Can we depend upon computers for classifying documents?

Ranganathan opined that classification involves judgment of the subject of the document in all its facets and arrays manifested in it. This cannot be done through statistical analysis of the languages in the document, which alone the machine can do. At present the computer can do a good trade of job not requiring judgment. But, classification will have to be done through humans until the computer can have the faculty of judgment built into it.

But, right from the 1970s, research job is being accepted on an automatic classification through K.P. Jones, Rigby, R. Freeman and others. According to Jones, Computers have
encouraged statistical rather than conceptual styles to classification. There is a real variation flanked by automatic and manual classification in that the computer can be more exhaustive than the human classifier. Jones further observed that the prospects of automatic classification for library purposes are not extremely bright. Suitable ways and applications of classification have not yet been recognized.

**Internet: Library Classification Schemes**

Internet, the main storehouse of fact, has approximately 100 million pages of fact. To discover the required fact contained on the Internet is an intricate task. Efforts have been made to apply library classification schemes for retrieval of fact contained on networks. The advantages of adopting library classification schemes are:

- Enhanced subject search facilities;
- Possibility of offering multilingual access;
- Interoperability with other services; and
- Facility for partitioning of big databases.

Moreover,—if the Internet service provider uses an existing and popular classification scheme, it has bigger chances of being up-to-date since it is revised at regular intervals and is popular with users.

**REVIEW QUESTIONS**

- What is underlying principles?
- What forms the basis of the outline of the main classes in DDC?
- Explain the salient features of DDC-19.
- What is the importance of the Manual on the use of the DDC?
- Explain the nature and structure universal decimal classification.
- State briefly in what respects UDC differs from DDC.
- Why is CC called an analytico-synthetic of classification?
- What are basic principles in colon classification?
- Describe briefly the features of Colon Classification Version.
- What are the essential new features of Colon Classification Version 2?
- Describe the developments in DDC.
"The lesson content has been compiled from various sources in public domain including but not limited to the internet for the convenience of the users. The university has no proprietary right on the same."