Module-2 | Organization of Library Resources: Advanced

Unit-1: Library Classification

After studying this Unit, students will be able to:

- *Know the concept of Main Class*
- *Understand the concept of Fundamental Categories*
- *Explain the APUPA Pattern*
- *Develop practical approach for classification*
- *Gain knowledge about practical classification from the Colon Classification (CC) and Dewey Decimal Classification (DDC) Schemes*

Contents

2.1.1 Introduction

In our daily life, we use classification to put similar things together. Similarly, libraries may have hundreds, thousands or even lakhs of documents, which include not only books, but various other kinds of documents as well. If we do not keep these books/documents in a systematic order, it becomes difficult to locate the document(s) required by the users. Without a proper system of classification, it will be very difficult to find a particular document amongst the hundreds or thousands of documents available in a library.

Library Classification is a technique, which helps in the proper organization and arrangement of documents and information in a systematic manner, so that the user can use sources of information effectively. The whole universe of knowledge is divided into several subject areas which are multidimensional in nature. Each classification scheme divides the universe of knowledge into different classes denoted by specific notations, symbols, numbers, and so on. The library classification helps in the following ways:-

i.   Shelf arrangement of documents

ii.   Subject analysis of documents

iii.   Aids automated and semi-automated information retrieval system,

iv.   Aids data or information retrieval, and

v.   Specifies the location of a particular document

2.1.2 Main Class

The library classification of a document consists of two steps. First, the "aboutness" of the material is ascertained, and second, a class number, based on the classification scheme, which is used in a particular library, is assigned to the material using the notation of the system. In library classification systems, each document can be placed only under one class, referred to as the main class. This is done for shelving purposes because a book can have only one physical place.

Dr. Ranganathan (1967) defined the Main Class as "the fairly homogenous conventional regions of knowledge, which together form the first order array of classes which are mutually exclusive and totally exhaustive of the field of knowledge".

The main classes in all the schemes of classification may not be the same. The classes which appear as the major divisions of the universe of knowledge are the main classes in that classified scheme. Once the knowledge is organized into a number of main classes, the next step is to mark the facets of each main class, derived from the main classes. These reflect the specific component of a subject.

2.1.2.1 Facets of a Main Class

Let us first understand what are facets and isolates in the context of library classification. Facet is a generic term used to denote the components of a basic subject, i.e., basic facet or an isolate facet of a compound subject. An isolate is any idea or idea complex to form a component of a subject, but not deemed singularly to be a subject. Isolates are of two kinds – common isolates and special isolates.

When we divide the universe of knowledge up to the stage of the Main Class, facets do not appear. But when we have to divide a Main Class, the concept of facets appears in the case of some main classes. The purpose of facets is to divide a main class into its possible divisional aspects. As the Main Class contains a number of smaller units of ideas or entities within it, one method of their division is to group them all into one consecutive sequence.

Another possible method for the division of a main class is to divide it first into its possible facets. The process can be termed as recognition of categories under a class. Therefore, any class enumerated in the first order array of a scheme of classification of the universe of knowledge is categorised as a main class.

2.1.3 Concept of PMEST (Fundamental Category)

The Colon Classification scheme contains both, the basic subjects and their facets (which contain isolates). A basic subject can stand alone but in contrast an isolate is a term that mediates a basic subject. To create a class number, the basic subject is named first. The isolates follow, entered according to a facet formula. This formula states that every isolate in every facet is a manifestation of one of the five fundamental categories -- personality, matter, energy, space, and time. Personality is the distinguishing characteristic of a subject. Matter is the physical material of which a subject may be composed. Energy is any action that occurs with respect to the subject. Space is the geographic component of the location of a subject. And time is the period associated with a subject.

As mentioned above, there are five fundamental categories into which a subject or main class is divided. These are the five aspects of a subject.
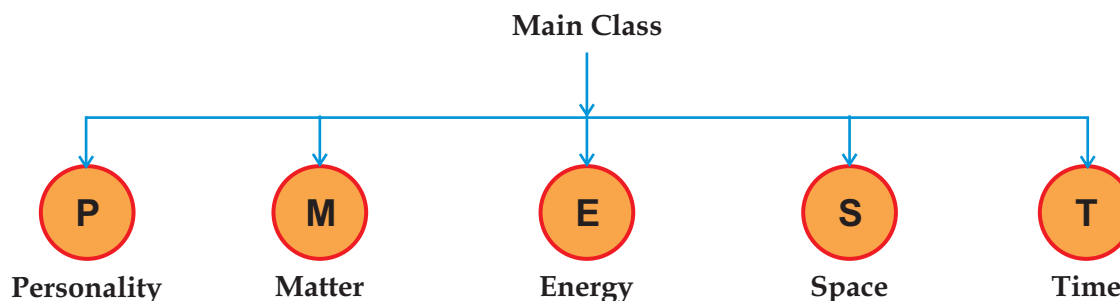
Main Class

P	M	E	S	T
Personality	Matter	Energy	Space	Time

Fig 2.1.1: The five aspects of a subject

Dr. Ranganathan named the five fundamental categories as PMEST, which is, Personality, Matter, Energy, Space and Time. A subject may have a Personality aspect, a Matter aspect, an Energy aspect, a Space aspect, and a Time aspect.

2.1.3.1 Time

According to Mills, the fundamental category, Time "is usually embodied in periods". According to Dr. Ranganathan, "The fundamental category time occurs in every subject forming a local description of local history of any subject". Time indicates that the entities under different subjects must change in its structure, meaning, history development, with the progress of times.

Example: History of the 18th century is different from that of the 15th century.

2.1.3.2 Space

According to Dr. Ranganathan, "the surface of the earth is a manifestation of the category 'Space'. It occurs in every subject forming a local description or local history of any subject." Most of the subjects, if not all, get manifested in relation with continents, countries and their subdivisions.

In CC (Colon Classification), there is a schedule of Geographical Divisions which can be attached to a subject. In DDC (Dewey decimal classification), there is a space facet applicable under the class History, and throughout the scheme the facet is available under the direction divide, like 940-999.

Example: In the following examples, the term denoting space is given in brackets.

i.   Agriculture in (India) brought up to 1990

ii.   History of education in (India)

2.1.3.3 Energy

According to Mills, the fundamental category, Energy is, "a category of facets which characterize the exercise of energy, i.e., activities, operations, processes, problems, etc." Palmer and Wells feel that Energy "usually presents itself as a problem to be solved, or a mode of work or approach." Dr. Ranganathan, in his Colon Classification, calls the facet based on the characteristic Energy, the problem facet. Thus, the fundamental Energy covers the problems, action including methods, functioning, and etc. aspects of a main class. Many main classes will have certain units which deal with the problems in the subject. These problems are generally applicable to all the organs of the class.

In the class Agriculture, certain processes and actions like sowing and harvesting also come under Botany; units like physiology, and pathology are noticed in Zoology and Medicine, which deal with functioning. Isolates, which make the category Energy, are generally important actions in the subject and commend a greater influence on the subject from two

directions. One is when they are in general reference to the class and the second when they refer to the organs of the subject individually.

Dr. Ranganathan postulates that the energy aspect in a main class may manifest itself in different rounds of energy, that is, 2E= second round of energy after 1E; 3E= third round of energy after 2E and so on. In Agriculture, the energy focus 'manuring' needs to be followed by another energy facet consisting of foci (facet) such as collection, grading and application. Another example is from Medicine. Pathology or disease is a problem and therefore it is [1E] of the subject treatment and surgery, etc. are for actions on diseases themselves, and therefore, they are the [2E] of the subject.

2.1.3.4 Matter

Dr. Ranganathan postulates matter as a fundamental category capable of manifesting itself as the 'constituent of a whole'. However, Mills argues, "Matter is the category of facets which reflect substances, materials, etc. It is manifested clearly in most technologies and in many of the natural sciences; and it is generally absent from theoretical disciplines like Law, Economics, Literature, etc." Vikery feels that "Matter comprises constituent materials of all kinds."

The Matter facet is inherent in many subjects falling within a main subject. The ones enumerated in CC are: Library Science, Engineering, Sculpture, Painting and Music. The 7th edition of the Colon Classification has given large scope to the Matter facet. There are three groups of "Matter" viz. Matter Material, Matter Property and Matter Method.

For Example: In the Main class of Library Science, Matter figures as the reading material. In the class Painting, Matter figures as the materials used for painting. In the class Music, Matter figures as the musical instruments, and so on.

Dr. Ranganathan was convinced that the facet "Matter" should be expended into three groups and many isolates from the facet "Energy" be shunted to "Matter Property". The three groups of Matter are:

1. Matter Property [MP]

Ex.	**Main Subject**	**MP**
	Biology	Morphology
		Physiology
	Education	Thinking
		Reasoning

2. Matter Method [MM]

Ex.	**Main Subject**	**MP**
	Chemistry	Physical Method
		Fluid Method

3. Matter Material [MM]

Ex.   **Main Subject**   **MP**
      Technology   Product
      Biology   Substance

2.1.3.5 Personality

The fundamental category 'Personality' is most concrete and the category 'Time' is the most abstract or the least concrete sector. The Personality facet indicates the core point of the subject at hand. According to Palmer and Wells, 'the term personality is used for the wholeness of any subject. Personality inheres in the subject itself and gives colour to the other fundamental concepts transforming them into concrete things.'

The Personality facet is of prime importance in many subjects, belonging to different classes, and it is the most recognizable facet for the specialists of a class. Personality is the first facet in many subjects and it is often experienced that the other facets work as attributes of personality for its further subdivision. Matter, Energy, Space, and Time are often required in relation with the personality facet. The other facets are required in lesser degree in relation to the main class. Without Personality there can be no organ, constituent, attribute, action, etc.

According to Dr. Ranganathan, if a concept cannot easily fit into the other four categories then it is probably a Personality facet. He further adds that Personality is only recognizable by elimination. After separating out the manifestation of Time, Space, Energy and Matter in the subject, the residue often turns out to be a personality facet. This may be called the Principle of Residue.

Within the Personality facet, we find a number of levels into which the whole personality is spread. These are known as levels of personality facet, P1, P2, P3, P4 and so on. The different levels are arranged with the help of the principles of helpful sequence.

Example, **Personality facet**

Main class	P1	P2	P3	P4
	Literature	Language	Form	Author work

The following example enumerates how the fundamental category, personality, is used in DDC and CC respectively:

Main class	**Personality facet**	**DDC**	**CC**
Psychology	Abnormal psychology	137	S6
Zoology	Vertebrate	596	K9

The fundamental category and the connecting symbols used to distinguish them in a class number are as indicated below:

Personality	:	The connecting symbol is comma (,)
Matter	:	The connecting symbol is semi-colon (;)
Energy	:	The connecting symbol is colon (:)
Space	:	The connecting symbol is period (.)
Time	:	The connecting symbol is inverted comma (')

2.1.4 APUPA pattern

Dr. Ranganathan revolutionized classification in the early 20th century by proposing a dynamic and nuanced system, which could easily adapt to new subjects and incorporate more details and sub-categories. One of his ideas was the Alien-Penumbral-Umbral-Penumbral-Alien, or APUPA system/pattern. It classifies material, based upon, how closely they relate to a specific topic. He created the APUPA pattern as a method of classifying books and documents based on their relevance to the searcher.

As per this method, documents are classified into three categories, that is, Alien, Penumbral and Umbral. Here, an Umbral document implies a relevant document, which is of main interest to the members of a library. A Penumbral document is meant for the marginal interests of the readers. This type is partially relevant and in some way or the other related to an Umbral document. An Alien document is non- relevant and thus, not required by the reader. So, we can recognize the pattern which indicates that every helpful sequence of book is **A**lien- **P**enumbral- **U**mbral- **P**enumbral- **A**lien, i.e., the APUPA arrangement.

The APUPA pattern, thus, arranges the most relevant documents at the center, documents of marginal relevance on both sides of the relevant document and the totally disconnected documents are far from the center. This is the best way to maintain filiatory sequence. The filiatory sequence implies the placement of all the entities of a field of knowledge in a definite sequence, in one line, according to the degree of their mutual affinities. A helpful sequence therefore, is said to be the one which follows the APUPA pattern. APUPA patterns are dynamic. Any book or other resource within a classification scheme can be an Umbral source and any resource can also be Penumbral or Alien, depending upon the subject.

As mentioned above, this sequence puts the most relevant records in the centre. The records which are connected with it are placed before and after it; and those which are totally disconnected are put at a distance from the Umbral. It is this kind of an APUPA arrangement, which gives the reader great satisfaction. If it manages to do so, then it is said to be in full conformity with all the Five Laws of Library Science.
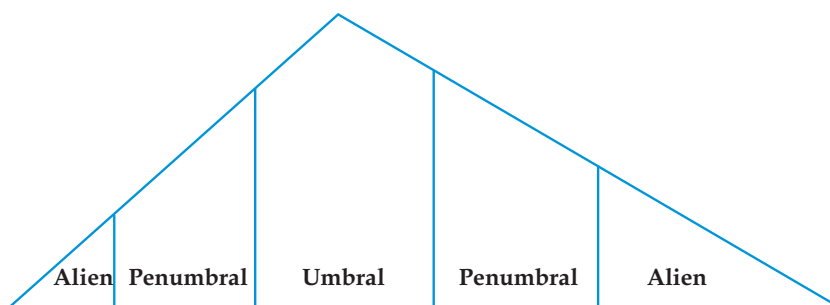
Fig 2.1.2: APUPA Arrangement

Example: If a user is seeking a book on 'growing oranges', that book is the Umbral source. Books about 'packing and transporting oranges'; a related topic but not exactly the same are Penumbral sources. Books about setting up industry for bottling orange juice would be Alien, or unrelated sources.

2.1.5   Steps in Library Classification

Dr. Ranganathan has prescribed a procedure involving nine successive steps for translating the title of the document; for analysing the title of a specific subject into facets, and for giving it an appropriate class number. The steps are as given below.

Step 0: Write down the Raw Title (= Title as found in the document).

Step 1: Full title (= Title expressing each of the relevant basic and isolate ideas in the subject of the document, arrived at by filling up all the ellipses in the Raw title). Deriving the Expressive Title from the Raw Title by filling up ellipsis such as basic class or any other facet implied in the Raw Title. This is done by breaking down composite terms into their fundamental constituent terms, according to a principle which sets a limit to the semantic depth of the fundamental terms.

Step 2: Kernel Title (= Full title except the auxiliary or apparatus words and each composite term denotes a composite idea replaced by the fundamental constituent terms, which denote its fundamental constituent ideas).

Step 3: Analysed title (= Kernel Title with each kernel term marked by a symbol, which denotes the fundamental category of which the ideas denoted by the term is a manifestation and also the round and the level to which it is assigned in conformity to the postulates of classification). This is done essentially with the help of wall picture-principle, taking two kernel terms at a time.

Step 4: Transformed Title (= Analytical Title with the kernel terms rearranged according to the symbols of analysis attached to them).

Step 5: Title in standard terms (= Transformed title with the Kernel terms replaced, wherever necessary by their respective equivalents as given in the appropriate schedules).

> **Step 6:** Title in Facet Numbers (= Title in standard terms with the kernel terms replaced by their equivalent numbers). Deriving the title in Facet Number from the title in standard terms by translating the Basic Class Facet and every other facet into its Basic Class Number or the Isolate Number, as the case may be. This is done with the aid of the classification schedules. When any isolate is new, that is, not available in the schedule, its isolate number is constructed with the aid of the principles.
>
> **Step 7:** Class number (got by removing the symbols of analysis and inserting the appropriate connecting symbols between the facet numbers in accordance with the Rules).
>
> **Step 8:** Translate the synthesized class number into natural language by way of verification. In this step, carry out facet analysis of the Class Number, giving a digit by digit interpretation and verifying the correctness of the number.

Steps 0 to 4 deal with the work in the idea plane. Step 5 deals with the work in the verbal plane. Step 6 and 7 are concerned with the notational plane. Step 8 involves the examination of work in all the planes. Step 0 shows the title as it appears on the document. Under Step 1, adding the name of the main subject, if it is not included in the title and break the compound terms into their constituent terms. Under Step 2, it shows only those terms which denote kernel idea by removing other meaningless words like the auxiliary words - of, in, for, etc. The words that are used in a natural language do not require translation in the artificial language, and are omitted. In Step 3, the Kernel ideas represented by their respective terms are analysed into categories (finding out who is what). They are branded according to the postulates. Under Step 4, these terms are arranged in a sequence of concrete to abstract, about which the postulate exists. Under Step 5, the non-standard terms are replaced by the terms adopted in the scheme of classification. Under Step 6, each term is translated into numbers. In Step 7, the various isolate numbers are connected with each other by the symbols prescribed by the postulates. Lastly, Step 8 examines the entire process in the light of the postulates.

Example: Feeding of Cattle in India

Step 0: Raw Title

> Feeding of Cattle in India

Step 1: Full title

> Feeding of Cattle in India in Animal Husbandry

As the name of the main class was missing in the raw title, it has been added under this step.

Step 2: Kernel Title

> Feeding Cattle India Animal Husbandry

The words 'of' and 'in' are auxiliary words. They are not necessary for depicting the specific subject of the document. Hence, they are omitted.

Step 3: Analysed title

Feeding [MP] cattle [P] India [S] Animal Husbandry (BC)

Feeding is a property, hence the manifestation of Matter Property; Cattle is a group of animals, hence the manifestation of Personality, India is a geographical unit, hence the manifestation of Space; Animal Husbandry is a recognized basic class.

Step 4: Transformed Title

Animal Husbandry (BC) Cattle [P] Feeding [MP] India [S]

The postulates prescribe that the BC will come first of all and the sequence of facets will be PMEST. As [E] and [T] are absent the sequence maintained is [P] [M] [S].

Step 5: Title in standard form Animal Husbandry (BC) cattle (P) feeding (MP) India (S)

All the terms used are standard terms. Therefore, there is no need for replacing them.

Step 6: Title in Numbers

From CC (6thed.)	KX (BC) 2 [P] 1[E] 44 [S]
From DDC	636(BC) 2(P) 084 (E) 0954 (S)

Step 7: Synthesised Number

CC (6thed.)	KX 2: 1044
DDC	636.208 40954

In CC, colon (:) was used to connect 1 of [E] and period (.) was used to connect 44 of [S]. In DDC, dot (.) is used to connect 2 (P) and 0 (zero) is used to connect 954 of (S). In 7th edition of CC semi colon (;) has been used to connect [MP] and period (.) is used to connect [S].

Step 8: Verification by reverse translation **CC (6thed.)**

KX	is	Basic Class
2	is	Personality facet
1	is	Energy facet
44	is	Space facet

Meaning thereby 'Feeding of cattle in India'

DDC

636	is	Basic class
2	is	Personality facet for cattle
084	is	Problem facet for feeding
0954	is	Space facet

Meaning thereby 'Feeding of cattle in India'.

2.1.6   Classification by CC and DDC

2.1.6.1 Classification by Colon Classification (6[th]ed.)

The sixth edition of Colon Classification is divided into three parts, namely Part 1: Rules, Part 2: Schedules of Classification and Part 3: Schedules of Classics and Sacred Books with Special Names. Part 1 and Part 2 will be used for practical classification in this syllabus.

The entire universe of knowledge is divided into the following Main classes:

z	Generalia	△	Spiritual experience and mysticism
1.	Universe of knowledge	MZ	Humanities and social science
2.	Library Science	MZA	Humanities
3.	Book Science	N	Fine Arts
4.	Journalism	NX	Literature and language
A	Natural Science	O	Literature
AZ	Mathematical Science	P	Linguistics
B	Mathematics	Q	Religion
BZ	Physical Sciences	R	Philosophy
C	Physics	S	Psychology
D	Engineering	Σ	Social Science
E	Chemistry	T	Education
F	Technology	U	Geography
G	Biology	V	History
H	Geology	W	Political Science
Hx	Mining	X	Economics
I	Botany	Y	Sociology
J	Agriculture	Yx	Social Work
K	Zoology	Z	Law
Kx	Animal husbandry		
L	Medicine		

Illustrative

LX	Pharmocognosy
M	Useful Arts

(:g)	Criticism technique
(P)	Conference technique
(r)	Administration report technique
(P)	Communication theory
(X)	Management

Part 2 contains different units dedicated for Common Isolate, Time Isolate, Space Isolate, Language Isolate and different relations.

Each main class is started with the Facet formula and then facet numbers for each isolate of different fundamental categories are provided. Each main class has rules, for constructing the numbers, given in the 1ˢᵗ part of the Rules section.

To classify the documents/titles, we should know the steps for classification.

Practical Examples

Following examples show the synthesis of numbers:

1. **Chemistry**

    The facet formula for the main class 'Chemistry' is E[P], [P2]: [E][2P]

    Where,   Foci in [P]   =   Substance

                        Foci in [P2]   =   Combination

                        Foci in [E][2P]   =   Problem

Title: Halogen derivative of Methane

    Class Number: E611,1

Where,   E   =   Chemistry (M.C.)

                    E611   =   Chemistry (M.C.) Methane [P]

                    E611,1   =   Chemistry (M.C.), Methane [P],
                                            Halogen Derivative [P2]

---

2. **Engineering**

    The facet formula for the class 'D Engineering' is D [P], [P2]: [E][2P]

                        Foci in [P]   =   Work

                        Foci in [P2]   =   Part (for all work facet except D6)

                        Foci in [E][2P]   =   Problem

Title: Design of steel window shutters

    Class number: D38, 78: 4

Where,

                                D   =   Engineering (M.C.)

                                D38   =   Engineering (M.C.), Steel [P]

                                D38,78   =   Engineering(M.C.), Steel [P],
                                                        Window shutter [P2]

> D 38,78:4 = Engineering (M.C.), steel [P],
> Window shelter [P2], Design [E]

3. **Physics**

Dr. Ranganathan has divided the main Class 'C Physics' into the following canonical divisions:

C1   Fundamentals

C2   Properties of matter

C3   Sound

C4   Heat

C5   Light Radiation

C6   Electricity

C7   Magnetism

C8   Cosmic hypothesis

Each Canonical Division has its own facet formula.

C3 sound: the facet formula for this class is C3 [P]: [E][2P]

Where,   Foci in [P]   =   Wave length

Foci in [E][2P]   =   Problem

Title: Analysis of ultra sound

Class number: C 35: 38

Where,

C	=	Physics (M.C.)
C3	=	Physics (M.C.), Sound (C.C.)
C35	=	Physics (M.C.), Sound (C.C.) Ultra sound [P]
C35:38	=	Physics (M.C.), Sound (C.C.) Ultra sound [P], Analysis [E]

4. **Mathematics**

The main class, mathematics, has been divided into the following canonical classes:

B1   Arithmetic

B2   Algebra

B3   Analysis

B4   Other Methods

B5   Trigonometry

B6   Geometry

B7   Mechanics

B8   Physio Mathematics

B9   Astronomy

The facet formula for **B6 Geometry is B6 [P]: [E][2P]**

Where,   Foci in [P] = Space

                    Foci in [E][2P] = Method

Title: Differential methods in three dimensional geometry

        Class number: B63:3

Where

B	=	Mathematics (M.C.)
B6	=	Mathematics (M.C.), Geometry (C.C.)
B63	=	Mathematics (M.C.), Geometry (C.C.), Three Dimensions [P]
B63: 3	=	Mathematics (M.C.), Geometry (C.C.), Three Dimensions [P], Differential [E]

5.   **Medicine**

The facet formula for the class medicine is   L [P]: [E][2P]

Where,   Foci in [P]   =   Organ

                    Foci in [E]   =   Problem

                    Foci in [2P]   =   Cause (for 4 Disease of [E])

Title: Treatment of tropical Diseases

        Class Number: L 9H: 4:6

Where

L	=	Medicine (M.C.)
L9H	=	Medicine (M.C.), Tropical (special facet)
L9H:4	=	Medicine (M.C.), Tropical (special facet), Disease [E]
L9H:4:6	=	Medicine (M.C.), Tropical (special facet), Disease [E], Treatment [2E]

6. Literature

The facet formula for the class Literature is   O [P], [P]), [P3], [P4]

Where,	Foci in [P]	=	Language
	Foci in [P2]	=	Form
	Foci in [P3]	=	Author
	Foci in [P4]	=	Work

Title: Hamlet (written by Shakespeare, Author born in 1564)

   Class Number: O11L, 2J64

Where,

O	=	Literature (M.C.)
O111	=	Literature (M.C.), English [P]
O111, 2	=	Literature (M.C.), English [P] (taken from language Isolate schedule), Drama[P2]
O111,2J64	=	Literature (M.C.), English [P](taken from language Isolate schedule), Drama [P2], Author name [P3] (got by chronological Device)

---

7. Economics

The Facet formula for the class Economics is   X[P]: [E][2P]

Where,	Foci in [P]	=	Business
	Foci in [E][2P]	=	Problem

Title: Value of Paper money

   Class number: X61; 4: 7

Where,

X	=	Economics (M.C.)
X61	=	Economics (M.C.), Money [P]
X61; 4	=	Economics (M.C.), Money [P]Paper [M]
X61; 4:7	=	Economics (M.C.), Money [P]Paper [M], value [E]

2.1.6.2 Classification of documents using DDC 19th edition

In a library, various documents including books and other reading material are arranged by their subjects. For arranging books, a classification system has to be adopted. The Dewey Decimal Classification (DDC) is the most popular classification system used all over the world. The 19th edition of DDC, published in 1979, has three volumes. Understanding of all three volumes is very essential for classifying documents efficiently. For classifying the documents, the following tasks have to be performed:
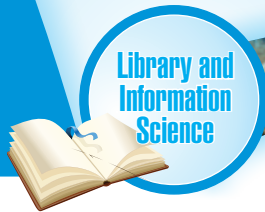
i. To determine the specific subject of the documents to be classified, and

ii. To assign appropriate notation from the schedules and tables to the specific subject.

Structure of DDC (19th edition)

The 19th edition of DDC has three volumes:

Volume 1: Introduction and Tables

Volume 2: Schedules

Volume 3: Relative Index

Volume 1: Introduction and Tables

The editors' "Introduction" explains in detail, the structure of the scheme, its various plans, its features and provides full instructions on its use. It also provides guidance for determining the subject and subsequently, locating the appropriate class number. The 2nd part of Volume 1 has seven Auxiliary Tables. These are: 1. Standard Subdivision, 2. Areas, 3. Subdivision of individual languages, 5. Racial, Ethnic, National groups, 6. Languages, and 7. Persons.

Lastly, the three outlines of the scheme are given in the order of their increasing details. The First Summary, also called the Ten Main Classes, provides a broad outline of the division of the entire universe of knowledge as per this system. Each of these ten main classes is further divided into ten branches called divisions. Hence, there are 100 divisions in all. This is called the Second Summary or the 100 Division of DDC Furthermore, each of these 100 divisions are divided into ten parts called sections. Hence, there are 1000 sections in all. This is called the Third Summary.

First Summary:

000 Generalities

100 Philosophy and related disciplines

200 Religion

300 Social Science

400 Langage

500 Pure Sciences

600 Technology (Applied Science)

700 The Arts

800 Literature

900 General Geography and History

Second summary of the main class 300, social sciences, is as follows:

310   Statistics

320   Political Science

330   Economics

340   Law

350   Public Administration

360   Social Problems and Services

370   Education

380   Commerce

390   Customs, Etiquette, F**olklore**

Third summary of the division 330, economics is as follows:

330   Economics

331   Labour Economics

332   Financial Economics

333   Land Economics

334   Cooperatives

335   Socialism and related Systems

336   Public Finance

337   International Economics

338   Production

339   Macroeconomics and related Topics.

Volume 2: Schedules

This volume contains the division of subjects, arranged in a sequence of decimal fraction numbers from 001-999. The numbers are given in numerical order and show hierarchical relations of subjects. To understand the correct and efficient use of the schedules, it is necessary to understand the various notes and instructions provided under various entries. Any number enclosed in square brackets is no more in use. Hence, such a number is not to be used.

Example: [309] Social situation and condition

[306] Unassigned etc.

While assigning the class number, transcription of class number is required:

➦   No class number consists of less than three digits, e.g., 500, 530, etc.

❖ When a class number extends beyond three digits a period (.) is put between the third and fourth digits, e.g., 324.3.

❖ To break the monotony of lengthy numbers and to aid memory a period (.) is used after the third digit.

❖ If a class number extends beyond six digits then after every third digits, a space is left. In other words, after the sixth digit the remaining digits are **transcribed** in 'group of three' leaving a space between two groups.

Example: 621.38800287 is actually transcribed as:

621.388 002 87

Volume 3: Relative Index

Volume 3 of DDC is the Relative Index. It is a kind of index which not only arranges the concepts and their terms in an alphabetical sequence but also shows the relationship between the terms and the context in which the subjects appear in the schedule. It makes an independent approach to classification.

Assigning class numbers with the help of tables and schedules:

There are seven auxiliary tables, which support the schedules for the formation of class numbers of documents. The schedule contains main classes and their divisions. Various instructions are provided in the schedules to build appropriate class numbers.

3.6.2.1 Tables

Tables are found in the first volume of DDC. The tables are explained with the worked out examples given below:

i. **Table 1: Standard Subdivisions**

Table 1 is of Standard Subdivisions. The hyphen (-) preceding each number indicates that it never stands alone. The hyphen (-) is omitted when you add a specific number from Table 1 to the base number from the schedule. The numbers from this subdivision are added directly to the base number from the schedule.

> **Example:**
> Title: History of Philosophy
> Analysis:
>
> 100 -   Philosophy (from schedule)
>
> -09   (Table 1) – History
>
> Synthesis
>
> 1̲0̲0̲ + - 09
>
> 1 + - 09 = 109
>
> **Class Number: 109**

ii.   **Table 2: Area**

Table 2 includes areas, regions, places in general (-1), which include physiographical features, population clusters, political and economic groups. "Add to" instruction is used at several places in the tables and schedules for the use of area subdivisions from Table 2 to the base number.

> **Example**:
>
> Title: Elementary education in India
>
> Analysis:
>
> | | |
> |---|---|
> | 372 | Elementary education (from schedule) |
> | 372.91-99 | Geographical treatment |
> | | (Add "Areas" notation 1-9 from Table 2 to base number 372.9) |
> | | (from schedule) |
> | -54 | India (from Table 2) |
>
> Synthesis:
>
> 372.9 + - 54 = 372.954
>
> **Class Number: 372.954**

Add 09 from Table 1 to add area from Table 2, if Geographical treatment (i.e., add 'Area' instruction) instruction is not given in the schedule of the base number.

> **Example**:
>
> Title: Buddhist religion sects and reform moments in Japan
>
> Analysis:
>
> | | |
> |---|---|
> | 294.39 | Buddhist sects and reform movement |
> | | (from schedule) |
> | -09 | Historical and geographical treatment (from Table 1) |
> | -52 | Japan (from Table 2) |
>
> Synthesis:
>
> 294.39 + -09 + - 52 = 294.390 952
>
> **Class Number: 294.390 952**

iii.   **Table 3: Subdivisions of Individual Literature**

The notation from Table 3 is never used alone but may be used as required with the base number for individual literature identified by *under 810-890(schedule). Table 3 is supplemented by Table 3A which provides additional elements for building numbers with Table 3.

> **Example:**
>
> Title : Idealism in English Poetry
>
> Analysis:
>
> | | |
> |---|---|
> | 820 | English Literature (from schedule) |
> | - 1 | Poetry (from table 3) |
> | - 13 | Idealism (from table 3A) |
>
> Synthesis:
>
> Dropped
>
> 820 + -1 +13
>
> 82 + -1 +13 = 821.13
>
> **Class Number: 821.13**

iv.   **Table 4: Subdivisions of Individual Languages**

Table 4 subdivisions of individual languages is never used as required with the base numbers for individual languages identified by * asterisk under 420-490 in the schedule.

> **Example:**
>
> Title: French Grammar
>
> Analysis:
>
> | | | |
> |---|---|---|
> | 440 | = | French Language (from schedule) |
> | -5 | = | Grammar (Table 4) |
>
> Synthesis:
>
> Dropped
>
> 440 + -5
>
> 44 + -5 = 445
>
> **Class number: 445**

v.   **Table 5: Racial, Ethnic, National Groups**

The nation in this table is never used alone but may be used as required either directly or with "Add to" instruction or through the interposition of notation – 089 from Table 1, with any number from schedule

> **Example:**
>
> Title: Japanese Cooking

Analysis:

641.592	=	Ethnic Cooking
		(from schedule)
		(Add "Racial, Ethnic, National Groups" notation 03 - 99 from
		Table 5 to base number 641.592)
- 956	=	Japanese (Table 5)

Synthesis:

641.592 + - 956 = 641.592 956

Class Number: 641.592 956

vi.   **Table 6: Language**

The names of languages are never used alone, but may be used with the numbers from the classifier from Table 6. The use of this table is mostly in relation to the main classes, 400 language and 800 literature.

Example:

Title: Social Status of Nepali's

Analysis:

305.7	=	Social status of language groups
		(Add "languages" notation 1-9 from table 6 to base number 305.7)
		(from schedule)
-9149	=	Nepali (Table -6)

Synthesis:

305.7 + -9149 = 305.791 49

Class Number: 305.791 49

vii.   **Table 7: Persons**

The notation from Table 7 persons is never used alone, but may be used as required with any appropriate number from the schedules with "Add to" instruction or through interposition of notation - 024 from Table 1.

Example:

Title: Psychology books for teachers

Analysis:

150	=	Psychology (from schedule)

- 024	=	Works for specific types of users (from table 1)
		(Add "persons" notations 03-99 from table 7 to the base number -024)
-372	=	Teacher (from table 7)

Synthesis:

$$150 + -024 + -372$$

$$15 + -024 + -372 = 150.243\ 72$$

Class Number: 150.243.72

3.6.2.2 Schedules (2nd Volume of DDC)

It contains Main Classes and their divisions.

i.   Generalities 000

The schedule of this main class deals with disciplines/subjects such as bibliography 010, library & information science 020, museology 060, Journalism, Publishing Newspapers 070, Books rarities 090, etc.

Example:

Title: Classification of Botany

Analysis:

025.46	=	Classification of specific disciplines and subjects (from schedule)
		(Add 001-999 to base number 025.46)
581	=	Botany (from schedule)

Synthesis:

$$025.46 + 581 = 025.465\ 81$$

Class Number: 025.465 81

ii.   Philosophy and Related Discipline 100

The schedule of this main class deals with disciplines/subjects such as philosophy and psychology. The other subjects are Metaphysics, Epistemology, Logic, Ethics, etc.

Example:

Title: Hindu Philosophy

Analysis:

181	=	Oriental Philosophy (from schedule)

181.04 - .09 =		Based on specific religions
		(from schedule)
		(Add to base number 181.04 the number following 29 is 294 -299)
294.5	=	Hinduism
		(from schedule)

Synthesis:

181.0 + 294.5

181.0 + 4.5 = 181.045

Class Number: 181.045

iii. Religion 200

The main class Religion is mostly devoted to **Christianity (**i.e., from 210 -289). Other major religions of the world are listed at 292 – 299.

Example:

Title: Hindu Religions Group

Analysis:

294.5	=	Hinduism
294.56 - .57 =		Leader organisations, activities
		(Add to base number 294.5 the number following 291 is 291.6 - 291.7)
		(from schedule)
291.61	=	Religions Group

Synthesis:

294.5 + 291.61

294.5 + - . 61 = 294.561

Class Number: 294 .561

iv. Social Sciences 300

The schedule of this main class deals with all the important disciplines in the social sciences. Some of the disciplines such as psychology, history and geography are listed under 150 and 900. At several places in the schedule for social sciences, there are special tables. The notation from these tables is to be applied to the divisions identified by an asterisk.

Example:

Title: Election law of India

Analysis:

342	=	Constitutional and administrative law
342 .3 - .9	=	specific jurisdictions and area
		(Add "Area" natation 3 – 9 from table 2 to base number 342)
		(from schedule)
-54	=	India (from table 2)
342.07	=	Election Law

Synthesis:

342 + -54 + 342.07

342 + -54 + 07 = 342.540 7

Example:

Title: Admission Procedure in elementary schools

Analysis:

372	=	Elementary education
372.11 -. 18	=	Organization and Administration
		(Add to base number 372.1 the number following 371 in 371.1 – 371.8)
371.216	=	Admission Procedure
		(from schedule)

Synthesis:

372.1 + 371.216

372.1 + .216 = 372.121 6

---

v. **Language 400**

The schedule of this main class includes important languages of the world. Various aspects of languages such as etymology, dictionaries, structural system, etc. are linked under Table 4 subdivisions of individual languages. Individual languages identified by an (*) asterisk in the schedules are linked under 420 – 490. They are further expanded by taking notation from Table 4.

> **Example:**
>
> Title: English – Telugu Dictionary
>
> Analysis:
>
> | | | |
> |---|---|---|
> | 420 | = | English Language |
> | | | (from schedule) |
> | | | - 32 to – 39 **bilingual** dictionaries |
> | | | (Add "language" notation 2-9 from Table 6 to -3) |
> | | | (from Table 4) |
> | -94827 = | | Telugu (from Table 6) |
>
> Synthesis:
>
> 420 + -3 + - 94827
>
> 42 + - 3 + - 94827 = 423.948 27
>
> **Class Number: 423.948 27**

vi. **Pure Sciences 500**

The schedule of this main class covers different branches of pure sciences such as Mathematics, Astrology, Physics, Chemistry, Geology, Biology, Botany and Zoology. Special tables are also provided at certain places to achieve a synthesis for number building.

> **Example:**
>
> Title: Pathology of rose Plants
>
> Analysis:
>
> | | | |
> |---|---|---|
> | 583.372 | = | * Roses |
> | | | (Add to instructed under 582 -589) |
> | 04 | = | General Principles |
> | | | (listed under 582 – 589) |
> | | | (Add to 04 the number following 581 in 581.1 – 581.8) |
> | 581.2 | = | Pathology |
>
> Synthesis:
>
> 583.372 + 04 + 581.2
>
> 583.372 + 04 + 2 = 583.372 042
>
> **Class Number: 583.372 042**

vii. Technology (Applied Science) 600

The schedule of this main class covers important subject fields such as Medical Sciences, Engineering, Agriculture, Home Economics, Management Chemical Engineering, Manufacturing and Buildings. Special tables are also available at different places.

> **Example:**
> Title: Treatment of gastric ulcers
> Analysis:
> | | | |
> |---|---|---|
> | 6/6.334 | = | *Gastric ulcers |
> | | | (Add as instructed under 616.1 -616.9) |
> | 06 | = | therapy (listed under 616.1 – 616.9) |
> | | | (from schedule) |
>
> Synthesis:
> 616.334 + 06 = 616.334 06
> **Class Number: 616.334 06**

viii. The Arts 700

The schedule of this main class covers important branches of fine arts viz. Civic Art, Architecture, Plastic Arts, Drawing Arts, Painting, Graphic Arts, Photography, Music and Recreational Arts. Under each art, different aspects like description, critical appraisal, techniques, procedures, apparatus equipment's and materials are listed. The fine arts have been broadly grouped under fine, decorative, literary, performing and recreational arts.

> **Example:**
> Title: Violin concerts and recitals
> Analysis:
> | | | |
> |---|---|---|
> | 787.1 | = | Violin |
> | | | (Add as instructed under 787 - 789) |
> | | | (from schedule) |
> | 073 | = | Concerts and recitals |
> | | | (Listed under 787-789) |
>
> Synthesis:
> 787.1 + 073 = 787.107 3

ix. Literature 800

The schedule of this main class includes literature of the word including literary forms such as poetry, drama, fiction, essays etc. The basic arrangement is first by language followed by forms and period. This is supported by Table 3, Table 3A and Table 6 for specific languages. Indian literature is listed under 891 and 894.

Example:

Title: English Short Stories

Analysis:

820	=	English Literature
-301	=	Short Stories (Table 3)

Synthesis:

820 + -301

82 + -301 = 823.01

Class Number: 823.01

x. General Geography and History 900

The schedule of this main class includes important subjects such as Geography, History and Biography. There are also special tables available at few places of schedules.

Example:

Title: Geography of Brazil

Analysis:

918 = * Geography of south America

(*Add as instructed under 4 – 9 from table 2 to base number 91)

(from schedule)

- 81 = Brazil

Synthesis:

918 + - 81

91 + - 81 = 918.1

Class Number: 918.1

2.1.7 Summary

In this unit, the concept of library classification, concept of main classes, PMEST, steps to classify documents and the APUPA pattern have been covered. The five fundamental categories- PMEST, that is, Personality, Matter, Energy, Space and Time have been discussed in detail. The Colon Classification (CC) and the Dewey Decimal Classification (DDC) schemes have also been explained. The various aspects related to classification of documents have been demonstrated with the help of suitable examples. You have been introduced to the process of synthesis in the DDC. The given examples have clearly **demonstrated** the synthesis for classification of subjects. There are many situations and provisions in the DDC where you will have to use the "add to" operations more than once on the same base number. All seven tables and ten main classes (i.e., first summary) have been explained.

2.1.8 Glossary

APUPA: An arrangement in which subjects are in the sequence: alien, penumbral, umbral, penumbral, and alien.

Book Number: The Ordinal number, which fixes the position of a document in a library, relative to the other documents having the same ultimate class.

Call Number: Call number of a book is the symbol used to fix its position relatively to the other books. It is a combination of classification number and collection number.

Classification: An orderly arrangement of entities in logical division of a subject by means of trains of characteristics. An artificial language of ordinal numbers designed to mechanize this arrangement.

Classificationist: One, who designs or devises a scheme of classification.

Classifier: One, who classifies a library book.

Class Number: An ordinal number representing the position of a class in a scheme of classification.

Collection Number: A symbol denoting any special characteristic (size, physical form, or class of users etc.) of a group of books, which because of this characteristic must be separately located.

Facet: One side of something that has many sides. In the context of faceted subject analysis, a facet is one of the many aspects of a subject.

Facet analysis: Examination of the various aspects of a subject to identify the basic characteristics by which it can be divided into sub-classes, the first step in developing a faceted classification system.

Main Class: A fairly homogeneous region of the universe of knowledge given by scheme of classification as a focus in its first order array of the universe of knowledge.

PMEST: The five main facets in S.R. Ranganathan's *Colon Classification*: Personality, Matter, Energy, Space and Time.

Wall Picture Principle: If two facets A and B of a subject are such that the concept behind B will not be operative unless the concept behind A is conceded, even as a mural picture is not possible unless the wall exists to draw upon, then the facet A should precede the facet B.

2.1.9   Exercise

Short Answer Questions

1.   What is Library Classification?
2.   Define 'Main Class' according to Dr. S R Ranganathan.
3.   What are facets and isolates in the context of library classification?
4.   What is PMEST?
5.   Which are the three groups of the fundamental category 'Matter'.
6.   Describe in brief the fundamental category 'Personality'.
7.   What is the importance of APUPA pattern in library classification?
8.   In how many parts is the 6th edition of the Colon Classification divided?
9.   List the main classes in DDC.
10. Name all the volumes of the 19th edition of DDC.

Long Answer Questions

1.   Explain the concept of main class and its facets.
2.   Explain the fundamental categories in library classification.
3.   Explain the APUPA Pattern?
4.   Discuss the steps to be followed for classification of documents?
5.   What are the different tasks that have to be performed while classifying documents?
6.   Describe briefly the Colon Classification, 6th edition.
7.   Give a brief account of the Structure of DDC (19th edition).
8.   Explain the role of tables in the DDC.

Module-2 | Organization of Library Resources: Advanced

Unit-2: Library Cataloguing

After studying this section, students will be able to

- *Explain the concept of Cataloguing*
- *Enumerate the methods of Cataloguing*
- *Explain the process of Cataloguing*
- *Demonstrate the MARC 21*
- *Learn the process of Cataloguing through AACR II and MARC 21*

Contents

2.2.1 Introduction

2.2.2 Cataloguing Rules

    2.2.2.1   Need

    2.2.2.2   ISBD

    2.2.2.3   AACR-2

    2.2.2.4   MARC 21

2.2.3 Cataloguing Format

    2.2.3.1   AACR- 2

    2.2.3.2   MARC 21

2.2.4 Summary

2.2.5 Glossary

2.2.6 Exercise

2.2.1 Introduction

Cataloguing is the process by which we create and maintain the database of books, journals, audio-visual materials, etc. that are owned by a library. Cataloguing is also an art of making or maintaining library holdings. It involves careful examination of different details of documents being catalogued and to record, describe and index it in a systematic manner. It is equally important to arrange, maintain and present the catalogue in a uniform manner. These are the spheres of activities that come under the operation that is called cataloguing.

The information contained in the library catalogue provides many access points needed for the library users, who are looking for specific documents in the library. Traditionally, the

library card catalogue provided access by the author's name, the title of a document, and the subject(s) covered in the item. Other points of access were additional authors, names of series, illustrators, and sometimes the titles of contents. Presently, computer catalogues can provide access to any part of the information contained in the record for a document in the library. This unit will discuss AACR-2 and MARC 21, the two, widely used cataloguing method for making the catalogue entries.

2.2.2   Cataloguing Rules

Cataloguing rules is a set of instructions for determining the information requirements of a library catalogue. These rules have gone through many changes over time, but the basic function of cataloguing rules is to answer the following questions:

- Which information from a bibliographic item is to be included in the entry?
- How is this information to be presented on a catalogue entry or in a cataloguing record?
- How should the entries should be sorted in the catalogue?

2.2.2.1 Need

Library catalogue is a tool that provides a better accessibility of library holdings. An efficient catalogue is almost like a key to the documents of the library. It helps users and support-staff to locate a document within a minimum time. The better the access, the more use the collection receives, and the more satisfied the user is in his or her search for information in the library.

2.2.2.2 ISBD

For a larger collection, more elaborate cataloguing rules are required. Users do not want to examine hundreds of catalogue entries or dozens of library items to find a single library holding. Currently, most cataloging rules are similar to, or even based on, the International Standard Bibliographic Description (ISBD), a set of rules produced by the International Federation of Library Associations and Institutions (IFLA) to describe a wide range of library materials. IFLA's ISBD Review Group is responsible for maintaining the ISBD. It helps to create a bibliographic description in a standard, human-readable form, especially for use in a bibliography or a library catalogue. The chief purpose of the ISBD is to provide a standard form of bibliographic description that could be used to exchange records internationally. These rules organize the bibliographic description of an item in the following areas:

1)   Title and statement of responsibility (author or editor)

2)   Edition

3)   Material specific details (for example, the scale of a map)

4)   Publication and distribution

5)   Physical description (for example, number of pages)

6)   Series

7)   Notes, and

8)   Standard Number (ISBN)

Each book, while, being enlisted in the catalogue has to be described individually. This description is called a record of the document. An entry is a single record of a document. Entries are prepared by different cataloguing Rules/Methods/Codes. Two methods used by most of the libraries in the world are:

➪   AACR-2

➪   MARC 21

The most commonly used set of cataloguing rules in the English speaking world are the Anglo-American Cataloguing Rules, 2nd Edition, or AACR-2 for short.

2.2.2.3 AACR-2

The Anglo-American Cataloguing Rules prepared by the American Library Association, the British Library, the Canadian Committee on Cataloguing, the Library Association and the Library of Congress. AACR was published for the first time in 1967. In 1978, the second edition was published as AACR-2 which was again revised in 1988 and is known as AACR-2R.

AACR-2 provides three levels of description for different areas for a document depending upon the nature and size of the library. According to the needs of a particular document or library, the different levels of description can be used. The first level provides the minimum information which is necessary to identify a given document. The second level provides all the data which may be considered necessary for description of documents forming part of the main collection of medium to large libraries in the context of libraries in developed countries. The third level provides information covering every descriptive element described in the AACR Code.

The three level of description are as follows:

First Level of Description

Minimum elements are taken for the first level of description. The general rules 1.1B, 1.1F, 1.2B, 1.3, 1.4D, 1.4F, 1.5B, 1.7 and 1.8B of AACR-2 may be used for this purpose. The following specification may be given under the first level of description:

Title proper/first statement of responsibility, if different from main entry heading in form or number or if there is no main entry heading. - Edition statement. – Material (or type of publication) specific details. - First place of Publication: First Publisher, etc., date of Publication, etc. - Extent of item. – Note(s).-Standard number.

Second Level of Description

The elements covered in the 2nd level of description are as follows:

Title proper [GMD]=parallel title: other title information/first statement of responsibility. - Edition statement/first statement of responsibility relating to the edition. – Material (or type of Publication) specific details. - First place of Publication, etc.: first Publisher, etc., Date of Publication, etc. - Extent of item: other physical details: dimensions. - (title proper of series/statement of responsibility relating to series, ISSN of series: numbering within the series. Title of sub-series, ISSN of sub-series; numbering within sub-series). –Note(s). - Standard number.

Third Level of Description

Third level includes every possible element given in the rules that can be used in the cataloguing through AACR-2.

Position for Different Element in the Entry

The following rules for positions for the different elements in the catalogue entry should be observed:

1) Call Number containing Class Number, Book Number and Collection Number, if any, may be written on the upper left corner of the entry. Class Number will be written on the 4th line from the top of the card and from the left edge of the card. Book Number will be written just a line below of the Class Number. If the Class Number consists of more than 8 digits, it will be written on the 3rd line from the top of the card and may continue beyond the first and second indention.

2) The head line will be used for either 1st Author or Title chosen for main entry. It will start from 1st indention and continue from the third imaginary indention. But when the book is entered under title, it begins from the first indention and continues from the 2nd indention. This type of transcription of the entry is known as hanging indention.

3) The title will start from the 2nd indention, on a line below the head line and continue from the 1st indention.

4) The title and statement of responsibility area, the edition area, the material or type of publication, specific details area, and the publication, distribution, etc. area will form a single paragraph.

5) The physical description area will start from the 2nd indention and continue from the 1st indention. It will include the series area also. Both these elements will form a separate paragraph.

6) The note area will start from the 2nd indention and continue from 1st indention. If there is more than one note, those may be given in separate paragraph.

2.2.2.4 MARC 21

MARC (**Ma**chine-**R**eadable **C**ataloging) **standards** are a set of digital formats for the description of items catalogued by libraries (such as books). It was developed by the US Library of Congress during the 1960s to create records that could be used by computers, and to share those records among libraries. By 1971, MARC formats had become the national standard for dissemination of bibliographic data in the United States, and the international standard by 1973. There are several versions of MARC in use around the world, the most predominant being MARC 21, created in 1999 as a result of the harmonization of U.S. and Canadian MARC formats, and UNIMARC, widely used in Europe. The MARC 21 family of standards now includes formats for authority records, holdings records, classification schedules, and community information, in addition to the format for bibliographic records.

MARC 21 Format for Bibliographic Data is designed to be a carrier for bibliographic information about printed and manuscript textual materials, computer files, maps, music, continuing resources, visual materials, and mixed materials. Bibliographic data commonly includes titles, names, subjects, notes, publication data, and information about the physical description of an item. As its name suggests the format aims to meet the challenge of the 21st century.

A MARC record involves three elements: the record structure, the content designation, and the data content of the record. These are described below:

Record Structure: The structure of MARC records is an implementation of national and international standards, e.g., Information interchange format (ANSI Z39.2) and format for information exchange (ISO 2709).

Content Designation: Content designation, the codes and conventions established to identify explicitly and characterize further the data elements within a record and to support the manipulation of those data, is defined in the MARC 21 formats.

Data Content: The content of most data elements is defined by standards outside the formats, e.g., Anglo-American Cataloguing Rules, Library of Congress Subject Heading, and National Library of Medicine Classification.

A MARC 21 format is a set of codes and content designators defined for encoding machine-readable records. Formats are defined for five types of data: bibliographic, holdings, authority, classification, and community information.

Bibliographic Data Format: It contains format for encoding data elements needed to describe, retrieve and control various forms of bibliographic material. It is defined for books, serials, computer files, maps, music, visual materials and mixed material.

Bibliographic format blocks

0xx=Control information, numbers, codes

1xx= Main entry

2xx= Title, edition, imprint

3xx= Physical description, etc.

4xx= Series statements

5xx= Notes

6xx= Subject access fields

7xx= Name, etc. added entries or series

8xx= Series added entries; holding and locations

9xx= Reserved for local implementation

Holding Data Format: It contains format specification for encoding data elements pertinent to holding and location data for all forms of material.

Holding format block

0xx= Control information, numbers, codes

1xx= Not defined

2xx= Not defined

3xx= Not defined

4xx= Not defined

5xx= Notes

6xx= Not defined

7xx= Not defined

8xx= Holdings and location data, notes

9xx= Reserved for local implementation.

Authority Data format: It contains format specification for encoding data elements that identify or control the content related to authority control.

Authority format blocks

0xx= Control information, numbers, codes

1xx= Heading

2xx= Complex see references

3xx= Complex see also references

4xx= See from tracing
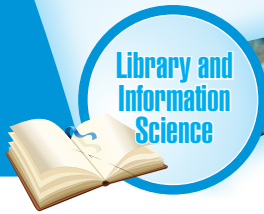
5xx= See also from tracing

6xx= Reference notes, treatment, notes, etc.

7xx= Heading linking entries

8xx= Not defined

9xx= Reserved for local implementation

Classification Data format: It contains format specification for encoding data elements related to classification numbers and caption associated with them.

Classification format blocks

0xx= Control information, numbers, codes

1xx= Classification numbers and terms

2xx= Complex see references

3xx= Complex see also references

4xx= Invalid number tracing

5xx= Valid number tracin

6xx= Notes

7xx= Index terms and number building fields

8xx= Miscellaneous

9xx= Reserved for local implementation

Community Information Format: It provides format specification for records containing information about events, programs, services, etc. so that this information can be integrated into other public access catalogues as data in other record types.

Community information format blocks

0xx= Control information, Numbers, Codes

1xx= Primary names

2xx= Titles, Addresses

3xx= Physical information, etc.

4xx= Series information

5xx= Notes

6xx= Subject access fields

7xx= Added entries other than subject

8xx= Miscellaneous

9xx= Reserved for local implementation

Organization of the Record

A MARC record consists of three main sections: the leader, the directory and the variable fields.

The Leader

It consists of data elements containing coded information and it is identified by relative character position. The leader is fixed in length in a string of 24 characters, 00 to 23. It occurs in the beginning of each MARC record.

The Directory

It contains the tag, starting location, and length of each field within the record. It serves as road map of the data contents area. Directory information is dynamically gathered and stored in a place between the Leader and the Data contents sections. The Directory is generated programmatically by computer for locating data fields with the help of their address, which is a string of 12 numeric characters. The size of directory area varies depending on the number of times the address repeats in the directory. The directory ends with a field terminator character.

Variable fields/Data Content

The data content of a record is divided into variable fields. MARC 21 format describe two types of variable fields, viz. variable control fields and variable data fields. Control and data fields are distinguished only by structure. The data fields are separated by the field terminator which is a pre-determined special character such #, @, etc. The data content resides in the final section of a Record, and ends with the Record Terminator.

Variable fields and Tags

- The data in a MARC record is organized into fields, each identified by a three – character tag.
- The MARC 21 formats use only numeric tags.
- The tag is stored in the directory entry for the field, not in the field itself
- Variable fields are grouped into blocks or according to the first character of the tag, which identifies the function of the data within a record, e.g., main entry, added entry, subject entry. The type of information in the field, e.g., personal name, corporate name, or title, is identified by the remainder of the tag.

Variable control field

- The 00x field in the MARC 21 formats are variable control field.
- It consists of data and field terminator. It does not contain indicators and sub-field codes.

❖ It contains either a single data element or a series of fixed-length data elements identified by relative character position.

Variable data field

❖ All fields except 00x are variable data fields.

❖ Following four levels of content designation are provided for variable data fields in ANSI Z39.2:

- A three character tag, stored in directory entry
- Indicators stored in the beginning of each variable data field
- Sub-field codes preceding each data element
- A field terminator following the last data element in the field

2.2.3 Format of AACR-2 and MARC 21

2.2.3.1 Format of AACR -2

A library catalogue is a useful search tool for the effective use of a library. A library catalogue can just meet any one type of user approach like author approach, title approach, etc. Format provides the output in an internationally standard acceptable manner. Catalogue card of a standard size 12.5 cm x 7.5 cm, is one of a physical forms of catalogue.

1st Indention   2st Indention   Main Line

025.00285 LAN	Lancaster, F W	
43216		Technology and management in library and information services/ F.W. Lancaster and Beth Sandore. – Urbana Champaign: University of Illinois, 1997. 322p.; 24 cm. ISBN 087-8450-9981 1. Library Services. 2. Library Science. I. Sandore, Beth. II. Title

Puncj hole

Fig 2.2.1: Catalogue Card (12.5cm x 7.5 cm)

The indention lines are drawn mainly to maintain clarity and to distinguish one line from another line while recording the details of a document in the form of a catalogue entry. Each paragraph starts from 2nd indention and continues from 1st indention in the description. The heading section/ leading section starts from 1st indention and continues from 2nd indention. AACR– 2 R never prescribes any indentions in the form of rules in the code except as a suggestion.

The structure of a main entry with the eight parts and the paragraph and elements there in is described as under:

I.   Heading

    A)   Author or other person or Corporate Body chosen as main entry.

    B)   Title, if (A) can be ascribed

II.   Body of the Entry (First paragraph)

    A)   Title and Statement of responsibility area

        (i)   Title proper (including alternative title, if any)

        (ii)   General Material Designation (GMD)

        (iii)   Parallel title(s) other title information, if any

        (iv)   Statement(s) of responsibility

    B)   Edition area

        (i)   Edition statement (named, numbered or a combination of both)

        (ii)   Statement of responsibility relating to the edition, but not to all editions

    C)   Material (or type of publication) specific details area

        (i)   For Cartographic materials, statements of scale and projection

        (ii)   For Serial Publication, numerical and/ or alphabetical designation

    D)   Publication, distribution, etc. area

        (i)   Place of Publication, distribution, etc.

        (ii)   Name of Publisher, distributor, etc.

        (iii)   Statement of function of publisher, distributor, etc. (e.g., production company)

        (iv)   Date of publication, distribution, etc. including copyright date

        (v)   Place of manufacture, name of manufacturers, date of manufacture, if name of publisher is unknown.

III. **Physical Description Area (Second Paragraph)**

 (i) Extent of item (e.g., number of pages, volumes, etc.)

 (ii) Other Physical details (e. g., playing speed, etc.)

 (iii) Dimension (e.g., height diameter)

 (iv) Accompanying materials (e.g., teacher's guide)

IV. **Series Area, if any** (following physical description area as continuation of second Paragraph)

 (i) Title proper of series, parallel title (s), and other title information

 (ii) Statement (s) of responsibility relating to series

 (iii) ISSN of series

 (iv) Numbering within series

 (v) Sub-series

 (vi) Second and following series, each in its own set of parentheses

V. **Note area (each note is a separate paragraph)**

Necessary data that cannot be incorporated in the section.

VI **Standard Number and Terms of Availability Area (Paragraph following last note)**

 (i) Standard number (e.g., ISBN, ISSN)

 (ii) Key – title of a serial

 (iii) Terms of availability (e.g., price)

VII. **Tracing (Separate paragraph)**

 (i) Subject Heading

 (ii) Added entries for joint authors, editors, etc.

 (iii) Title added entry or entries

 (iv) Series added entry or entries.

VIII. **Call Number (formatted in upper left corner of entry or on line following tracing.)**

 (i) Classification number

 (ii) Cutter Number and work mark, if any

IX. **Accession Number can also be included as part of the main entry**

The place of above parts in a catalogue card is shown below.

Call Number (VIII)	Heading	Section (I)
Acc. No. (IX)		Body of The Entry (II) Physical Description (III) (Series) (IV) Notes Area (V) ISBN (VI) Tracing (VII) O

Fig 2.2.2: Catalogue card

Outline for a main entry and an added entry for a dictionary catalogue according to AACR – 2

Call No.	Main Entry Heading	
Acc. No.		Title proper (GMD).= Parallel title: Other title / statement of responsibility. –Edition / Statement of responsibility relating to edition. - Place of publication, distribution: Publisher, date of publication. Extent of item: other physical details: dimensions + accompanying Material – (series; number). Notes. ISBN. 1. Subject heading. 2. Subject heading. I Added Entry II Added Entry III Title IV Series O

Fig 2.2.3: Catalogue card

If the main line is not sufficient to record this information, the main entry will continue in the heading after leaving two letter spaces from the second indention. This imaginary line which is 16 spaces from left margin of the card is known as third indention. In the tracing section, in between the items numbered in Arabic numerals and in Roman numerals two letter spaces are to be left.

Outline of Added Entry – Unit Card Method.

Call No.	Main Entry Heading	Added entry (Second line added entry, if necessary)
Acc. No.		Title…/Statement…. - Edition … /Statement …. – Place…: Publisher, date of Publication. Extent of item ….-(series; number). Notes. ISBN. Subject heading…… ○

Fig 2.2.4: Catalogue card

When the main entry is under the title of the work as per rule, the outline entry is as follow:

Call No.		
		Title ……. /Statement of responsibility. –edition…. - place of Publication: publisher, date. Extent… .- (Series; no.). Notes ISBN Subject heading. 2….. I…. ○

Fig 2.2.5: Catalogue card

The title statement starts from the 1st indention of the main line and continues from the 2nd indention, till the completion of the body of the entry. From the second line onwards the body of the entry 'hangs on' to the second indention. This type of indention is known as 'hanging indention'.

2.2.3.2 MARC 21 Format

MARC Format involves the logical record structure, the content designation and the data content. Content designators, field tag, Indicator 1 and 2, and sub-field code, all contribute to a computer's performance in reading the content of a bibliographic record meaningfully.

Field Tag: The Field Tag is a three digit code meant for a particular type of data. For example, Tag 100 stands for main author.

Indicators: There are two Indicators, viz. Indicator 1 and Indicator 2. These provide some supplementary information about the field content. Each indicator holds single - character code. The code may be a numeric or a lowercase alphabetic character or a blank space. Use of a blank (#) indicator is inconsistent.

Subfield Code: It identifies data elements within a field for enabling the computer to manipulate each one separately. It is composed of a sub-field delimiter and a Data Element identifier. A delimiter's function ends with passing a signal to computer predicting the presence of a Data Element Identifier, while Data Element Identifier is a Code.

Example

245	Title Statement	NR
$ a	Title Proper/Short title	NR
$ b	Remainder of title	NR
$ f	Designation of Vol./Issue and/or date	NR
$ h	Medium	NR
$ 6	Linkage	

Examples of sub-field codes with Dollar Sign as subfield delimiter.

Variable Control Fields

The first block of fields is made under tag 00X that, contains Variable Control Fields, e.g., 001 is control number.

Variable Data Field

All fields except 00X are variable data fields. These fields consist of indicators, one or more sub-field codes, Variable data and a field terminator. The primary groupings of variable fields are as follows:

0XX = Control information, numbers, Codes
1XX = Main entry
2XX = Titles, edition, imprint
3XX = Physical description, etc.
4XX = Series Statements
5XX = Notes
6XX = Subject access fields
7XX = Name, etc. added entries or series, linking
8XX = Series added entries; holding and location
9XX = Reserved for local implementation

All fields are not required by every library. Therefore, a policy may be formed to concentrate on a set of relevant fields, indicators, subfields. The minimum required fields for book cataloguing may look something like the following:

020	ISBN
040	Cataloguing Source
09X	Local call number
100	Personal Name – Main entry
110	Corporate Name – Main Entry
130	Uniform Title – Main entry
240	Uniform Title
245	Title of the work
246	Varying form of title
250	Edition Statement
260	Imprint, Publication, Distribution
300	Physical Description
440	Series Statement/Series Title Added entry
500	General Note
504	Bibliographic Note
505	Formatted contents Note
520	Summary Note (abstracts, etc.)
59X	Local Notes
600	Subject Added entry – Personal
630	Subject Added Entry - Uniform Title
650	Subject Added Entry – Topical
651	Subject Added Entry – Geographic
69X	Local Subject Access field
700	Personal Names – Addition Access Point
710	Corporate Name – Addition Access Point
730	Uniform Title – Addition Access Point
9XX	Local data Elements

Example: (1)

010	91-12500/Ac
020	0452010616: # C $ 9.95 ($12.99 cm)
082	00822.33

100	1	Westall, Robert
245	14	The kingdom by the sea/ #c [by] Robert west all
250		1st American ed.
260		New York: # b Farrar Straus Giroux, # c 1992, e 1990
300		175P; # c 21cm
520		During World War II, twelve year old Harry and a stray dog travel through war-torn England in search of safety
650	1	World war, 1939-1945 # Z England # v Fiction
650	1	Dogs # V fiction

2.2.4   Summary

This unit has discussed the concept, methods and process of library cataloguing. The cataloguing rules covered in this unit are similar to, or based on, the International Standard Bibliographic Description (ISBD). The two types of cataloguing rules, viz. AACR-2 and MARC 21 have been dealt in detail. It also discusses three levels of description of a document through AACR 2. An outline of the main entry and an added entry is also described.

MARC21 format has been discussed in detail. MARC stands for Machine Readable Cataloguing. MARC comprises a detailed scheme or a pattern for allocation of all bibliographic and allied elements, for example, title, author, language, etc. in an electronic file. It serves as a system of bibliographic information interchange, that is, for importing one or many records from another MARC compliant online catalogue located anywhere in the world, or exporting records to other on demand.

2.2.5   Glossary

AACR -2: Anglo-American Cataloguing Rules

Accession Number: The number given to a book from the Accession Register. It may also be a number given to an article in a periodical, or other documents which are indexed by the uniterm concept co-ordination system.

Author: The term used for the writer of a book, as distinguished from the translator, editor, etc.

Catalogue Card: A plain or ruled card which is generally of standard size 5x3 inch. It is used for making a single entry or reference in a card catalogue.

Catalogue Code: A set of rules for guidance of cataloguers in preparing entries for catalogues so as to ensure uniformity in treatment.

Cataloguer: Refers to a library professional, who determines the forms of entry and prepares the bibliographical descriptions for a catalogue, and in many libraries classifies the books and provides subject heading

IFLA: International Federation of Library Associations and Institutions

Indention: Refers to the distance from the left edge of a catalogue card at which the various parts of the entry begin. The purpose of indention is to differentiate and emphasize the various groups of information.

ISBN: International Standard Book Number

Main Card: Refers to the catalogue card which indicates the Main Entry.

MARC: Machine Readable Cataloguing

Tracing: Refers to the indication on the front or back of a main entry catalogue card which indicates the additional headings under which added entries appear.

2.2.6   Exercise

Short Answer Questions

1. What is the need of having cataloguing rules?
2. Enumerate the eight areas of bibliographic description according to ISBD.
3. Describe the second level of description in AACR-2.
4. List the items in structure of a main entry in AACR-2.
5. Explain briefly the importance of *MARC 21 Format for Bibliographic Data.*
6. What are the rules for positions for the different elements in the catalogue entry in AACR-2?
7. Explain the term 'Hanging Indention'.
8. Draw the outlines of an added entry in Unit Card System.
9. Give an example of Subfield code in MARC 21.

Long Answer Questions

1. Discuss the role of ISBD in library cataloguing.
2. State the structure of AACR-2.
3. Write schematic illustration of 2nd level of description described in AACR2.
4. Explain the elements that describe a MARC record format.
5. Enumerate and explain different types of data format in MARC 21.
6. Describe the different parts of a main entry of AACR2.