

Postulate based Permuted Subject Indexing System

Introduction

- The inherent weakness of chain indexing has been its dependence on a scheme of classification.
- Another weakness was its disappearing chain.
- In view of such a situation, information scientists at the documentation research and training centre (DRTC), Bangalore ,after a great effort developed POPSI.

Introduction

- Postulate means a fundamental principle,
- Permuted means to change the order of ,
- Indexing system means a set of prescribed rules for an indexer to derive the subject heading according to postulates and principles.
- POPSI is a kind of derived indexing system in which the indexer derives/obtains indexing term using an appropriate indexing system by applying its principles and postulates.
- POPSI i.e. Postulate based Permuted Subject Indexing System was devised by Ganesh Bhattacharya in 1968-1978.

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- POPSI is a pre-coordinate indexing system developed by G.Bhattacharya in 1969 as an alternate for chain indexing for deriving the subject heading for classified catalogue.
- It uses the analytico-synthetic method for string formulation & permutation of constituent terms in order to satisfy different approach points to the document.
- POPSI is an indexing system which doesn't require any classification scheme for deriving the subject heading but provides the postulates for deriving the subject heading on the basis of elementary categories.

Developmental stages in POPSI

- 1st stage in POPSI came in 1969.
- 2nd stage came in 1975.
- Stage 3rd came in 1979 and
- The final version POPSI IV came in 1986. This is very useful for generation of subject heading through computer.

Parts in POPSI

- There are two parts in POPSI index entry :
- The lead heading which contains the index terms or the access term
- The content heading ,which generally appears in the line following the lead heading and contains subject words with auxiliary words denoting the context in which the lead term has been discussed in the given document.

Definition

- According to G .Bhattacharya,an indexing system which has for its primary aim to generate in verbal plane and organizing classification on the basis of a coherent set of postulates about the semantic, elementary, syntactic structure of the subject and to generate subject heading on the basis of disorganizing classification by using the technique cyclic permutation of short terms,occurring in the modulated subject propositions.

Characteristics of SIL

- A subject indexing language(SIL) consists of elementary constituents and rules for formulation of admissible subject propositions.
- It is used to summarise the thought content of the same information.
- It facilitates the expeditious(quick) information retrieval by providing necessary and sufficient access points.

Characteristic features of POPSI

- POPSI doesn't require any classification scheme.
- POPSI can be used both manually and automatically.
- Chain consists of elements of concepts occurs as a part of compound subject.
- The short terms or subject headings are derived from the titles, therefore currency of latest terms is maintained.
- It also has provision for intrapolation and extrapolation.
- The terms are rotated on the basis of cyclic permutation, therefore each and every term gets the opportunity to serve as an indexing term.

POPSI-Postulates

- G.Bhattacharya proposed four basic elementary categories in analyzing the subject which is collectively known as DEPA/M.
- D stands for Discipline.

an elementary category that includes conventional field of study or any artificially created analogous field such as library science, physics, chemistry, mathematics.

E stands for Entity

An elementary category that includes manifestations having perceptual co-relates or only a conceptual existence and distinct from properties and actions performed by them, e.g. libraries, students, teachers, patients, lungs, light etc.

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- P stands for Property(acc. to SRR –personality)
includes manifestations denoting the concepts of attributes(qualitative and quantitative)e.g.skills,productivity,utility,efficiency,rlevance and diseases.

A stands for action (acc. to SRR –energy.)

includes any manifestations denoting the concepts of doing,either a self action or artificial action such as classification, cataloguing, evaluation, examination,migration, movement etc.

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- M stands for Modifier

In relation to the manifestation of any elementary category, modifier qualify, any manifestation without disturbing or changing the existence of a concept or any of elementary categories, e.g. a modifier can modify any of the elementary categories such as library, as a entity.

Modifier can qualify it as rural libraries, medical libraries, agricultural libraries, prisoner or children libraries.

Modifier can be common modifier, like form, time, environment and place.

Rules of POPSI

- The basic rule of syntax associated with the deep structure of a subject indexing language is that the discipline should be followed by entity (either modified or unmodified), then property (modified or unmodified) and action. Therefore the syntax of the POPSI, can be seen through schematic diagram: as

Discipline → Entity → Property → Action
(modified / unmodified)

Notations for analysis and synthesis

- POPSI as a process for subject proposition consist primarily of analysis and synthesis and permutation.
- The task of analysis and synthesis is mainly guided by the following table of notations:-
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0-form modifier	modifiers
1-general treatment	3-time
2-phase relation	4-environment
2.1-general	5-place
2.2-bias	6-entity
2.3-comparison	7-discipline
2.4-similarity	
2.5-difference	
2.6-application	
2.7-influence	

Steps in POPSI

- The index entries according to this system are generated in a systematic manner with the help of following steps of operation.
- 1. Analysis
- 2. Formalisation
- 3. Modulation
- 4. Standardisation
- 5. Preparation of EOC
- 6. Decision about TA
- 7. Preparation of EAC
- 8. Alphabetisation

EXAMPLE

- Let us examine these stages with the help of a sample title, 'Chemical treatment of tuberculosis of lungs'.
- 1. Analysis
- Subject indicative expression, the starting point of index generation, may be the title of a paper, a book or any other document. According to the first stage of operation, the expression is analysed to identify the facets in terms of concepts and modifiers. Analysis of the above mentioned example will lead to the following:
 - D - Medicine
 - E - Lungs
 - A - Chemical Treatment
 - P - Tuberculosis

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- 2. Formalisation
- In the stage of formalisation the sequence of components derived by analysis has to be decided. It involves the arrangement of component terms according to the principles of sequence of components indicating the status of each component term. Applying this principle, the components are sequenced in the following manner to obtain the basic chain:
- Medicine (D), Lungs (E), Tuberculosis (P of E),
Chemical treatment (A on P)

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- 3. Modulation
- Each of the component terms in the analysed and formalised subject headings is added some terms (if necessary) to make their understanding more clear. The above chain after modulation will be:
- Medicine (D), Man. Respiratory System. Lungs (E), Disease. Tuberculosis (P of E), Chemical treatment (A on P)
- 4. Standardisation
- It is concerned with semantics. It helps in the decision of standard terms for synonyms and the terms for reference generation. It is done vocabulary control. In step 3 and 4, classaurus has been suggested to be used. The above chain after this step will be:
- Medicine (D), Man. Respiratory System. Lungs (E), Disease. Tuberculosis (P of E), Chemotherapy (=Chemical treatment) (A on P)

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- 5.Preparation of the EOC(Entry for Organising Classification)
- It consists of preparing the entry for generating organising classification by inserting appropriate notations from the POPSI table. The above chain after this step will take the following shape.
- 7Medicine, 6 Man. Respiratory System. Lungs, 6.2 Disease. Tuberculosis, 6.2.1 Chemotherapy (=Chemical treatment)
- 6. Decision about TA (terms of approach)
- This step is concerned with the decision regarding terms of approach for generating successive index entries and references.
- In this step ‘Lungs’, ‘Tuberculosis’ and ‘Chemotherapy’ are selected as terms of approach and a cross reference entry is decided to be made for ‘Chemotherapy’.

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- 7. Preparation of EAC (Entries for Associative Classification)
- This step consists of preparation of entries under each approach terms and references. This step will result in the following entries.
- Lungs
 - 7 Medicine, 6 Man. Respiratory System. Lungs,
 - 6.2 Disease. Tuberculosis, 6.2.1 Chemotherapy
 -
- Tuberculosis
 - 7 Medicine, 6 Man. Respiratory System. Lungs,
 - 6.2 Disease. Tuberculosis, 6.2.1 Chemotherapy
 -
- Chemotherapy
 - 7 Medicine, 6 Man. Respiratory System. Lungs,
 - 6.2 Disease. Tuberculosis, 6.2.1 Chemotherapy
 -
- Chemical treatment
 - See Chemotherapy
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- 8. Alphabetization
- In this step all the index entries including references are arranged in a word by word sequence
- (i) (i) Chemical treatment
- See Chemotherapy
- (ii) Chemotherapy
- 7 Medicine... ..
- (iv) (iv) Lungs
- 7 Medicine
- (iv) Tuberculosis
- 7 Medicine

Merits of POPSI

- Formulating subject headings which may be used as feature heading or for other indexing purposes.
- Deriving subject index entries for a classified catalogue or for an index to a book etc.
- Determining the subject of a reader's query in a consistent & helpful manner
- Formulating a strategy for searching information about a subject in a catalogue or other surrogate files.
- Deriving a base for the presentation of ideas in the text of a document.

Conclusion

- POPSI is certainly an extension of Chain Indexing, though they differ from each other.
- POPSI has successfully solved the problem of disappearing chain which was a major criticism against chain indexing.
- POPSI made the indexing system free from classification scheme because this system is based on general theory of classification and is not tagged with any classification scheme.

GLOSSARY

- Organizing classification-the arrangement of subject propositions on hierarchical relationship results in organizing classification where the coordinate,subordinate,super ordinate and collateral relationships are identified.
- Any scheme of notational classification displays an organization and hence is an organizing classification.
- Arrangement of simple,compound ,complex subject propositions according to ordinal values of class numbers always result in org. classification.
- Associative classification-The arrangement of subject propositions based on non-hierarchical relationship results in associative classification where the coordinate,subordinate,super ordinate and collateral relationships are not readily ascertainable.
- But the hierarchically related groups can be linked by cross references.e.g. the alphabetical index to the notational schedules is meant for implementing the principle of associative classification.
- Org .class. Is hierarchical in structure whereas assoc. Class.is non-hiera.structure.
- But to achieve proper info. Retrieval.org. class. must be complemented by ass.class. & vice-versa.

Glossary-

- Types of subject propositions
- Semantic structure-is one in the dimension of denotation,and is based on genus-special,whole-part organ and intra –facet relationships.I.e. relationship between signs and symbols is organized.
- Elementary structure-is the dimension of elementary(basic,rudimentary) categories to which the different independent constitutions of subject propositions belong.
- Syntactic structure-is the elementary constituents of the subject propositions that generate the intended pattern of groups.
- Syntax-arrangement of words in a sentence
- Content analysis-process of identifying significant characteristics.
- Manifestation-presentation,exhibition,indication
- Proposition -A plan suggested for acceptance; a proposal. or.
A subject for discussion or analysis.

Semantic-i.e.priori relationship between indexing terms & their synonyms are regulated by machine-held thesaurus that serves as the sources of see and see also references in the index.

Glossary contd.....

- The term manifestation has been used here to refer to a specific idea falling in any one of the elementary categories discipline, entity, action & property, also the term denoting it.

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