CUSTOMIZED SOFTWARE INTERFACES FOR EFFECTIVE USE OF COPSAT (CONTENTS OF PERIODICALS IN SCIENCE AND TECHNOLOGY) SERVICE

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ABSTRACT

This paper briefly discusses the importance of creation of database for contents of periodicals in science and technology of the COPSAT service jointly started by INFLIBNET Programme Ahmedabad, and N C S I; Bangalore to provide the low cost high value service on latest information. The introduction of ISO-2709 format in this service is highlighted. The paper discusses mainly designing of the end-user interface using CDS/ISIS Pascal programming utilities. The customized software interface has been developed at INFLIBNET Programme, which allows the end user of the COPSAT service to search through the database and can have the on line printout of the required information. The possibility of converting the structured existing text files into ISO format is also highlighted.

INTRODUCTION

Information explosion is the result of tremendous progress in almost all the fields of science and technology. A scientist/researcher/faculty who wants to keep himself abreast with latest developments in his/her field of specialisation, looks for latest information through various information sources which takes bulk of a scientist's scanning time. The need for information is growing, but the available resources in the libraries are shrinking due to the price escalation. In order to mitigate the difficulties of academician and researchers in the country, INFLIBNET Programme of U G C jointly with National Centre for Science Information (NCSI), Bangalore has introduced a service called contents (with abstracts, wherever available) of periodicals in science and technology (COPSAT).

COPSAT service provides the periodical contents pages and abstracts (wherever available) from nearly 3000 top ranking journals covering the subjects of life sciences, chemical sciences, earth sciences, engineering, technology and applied sciences. This service is available in both paper (print) and floppy diskette medium. The COPSAT user can choose 25 journals on paper medium, or 40 journals on diskette medium for one subscription. Those who prefer to get the service on diskette two options are available i.e. the output

can be obtained as a text file (ASCII format) or in ISO-2709 format.

The ever increasing use of sophisticated computer system, for the control and management of information has important implication for our thinking about information in general and about its processing, storage and dissemination of information by computers. Most of the university/ college libraries have started taking the COPSAT service in ISO-2709 format, through which individual library can develop COPSAT database in CDS/ISIS, which allows the user to search through the database. In order to use ISO formatted files researchers or end users are expected to be trained in using CDS/ISIS package for searching and printing. In order to avoid this difficulty, an user friendly interface program has been developed at INFLIBNET Programme. This program has the capabilities of searching through title, author, journal name etc. and take print out of the required information immediately.

ADVANTAGES OF COPSAT SERVICE IN ISO-2709 FORMAT

ISO-2709 Format

This international standard ISO-2709 describes a generalized structure, a framework designed specifically for communication between data processing systems. It specifies the requirements

for a generalized exchange format which will hold records describing all forms of material capable for bibliographic description as well as related records such as authority records. It does not define the length or the content of individual records and does not assign any meaning to tags, indicators or identifiers; these specifications being the functions of an implementation format.

The important reasons for using ISO-2709 format for data exchange are listed here :

1. The absence of the data elements in a bibliographical records is unpredictable. The data fields are further subdivided into subfields.

2. To control the variable length nature of data elements, a directory of pointers at the beginning of the record is used. It points to the beginning of the data elements together with the tags and the length of the data elements concerned.

3. To control the variable number of occurences of data elements, the pointer of the data elements is repeated as many number of times the data element occurs in the record together with its tag, length and its starting character position in the record.

CDS/ISIS Information Storage and Retrieval Package

CDS/ISIS is a menu driven generalized information storage and retrieval package which allows user to build and manage structured and textual non-numeric databases.

Generally speaking a database is a set of related files that you collect to satisfy information requirements of a user community.

Eg : Database of Library catalogue

Database of CLOPSAT (contents of periodicals in science and technology etc.

CDS/ISIS enable the users to :

1. Define database with selected data elements

2. Enter new records

3. Modify, deletion of existing records

4. Create and Maintain first access index files for specific fields and subfields

5. Search terms from index files or keying in terms

6. Retrieval of records using boolean operators.

7. Display of records according to user defined formats

8. Sort and Print according to the desired sequence

9. Export/Import of records is ISO-2709 format.

10. Developments of specialized applications using pascal

Hardware Requirements :

The minimum hardware requirements for running CDS/ISIS are following :

PC XT/AT or compatible

640 K RAM Memory

1 floppy disk unit

1 hard disk

1 monitor

1 printer

Any COPSAT user wants to avail this facility can obtain the CDS/ISIS package from NISSAT/DSIR through its marketing office NICTAS/ATIRA Ahmedabad.

PASCAL INTERFACE PROGRAM : COPSAT-PAS

An user friendly pascal interface program has been developed at INFLIBNET programme for the effective use of COPSAT service. This programme allows the end user to search through by name of an author, Title(s) of a paper, Journal name, Publication details search, and the Boolean search.

Important Features of Copsat-pas Prolgram

The main features of this program are :

1. Allow the user to search by Author, title, journal name, publication details, etc.

2. Display the searched results on the screen if the number of records are more than one, it allows the user to scan the next record, and can come back to the previous record.

3. Provide the facility to save the set of records in the searched records to a file or the all selected records a file.

4. Allow the use to take online print out.

5. Also provides an option to the user to take either set of records to a printer or all selected records to a printer.

6. User can write full search statement for search or part of statement with right truncation for search.

The program is menu driven and online help is provided for each option.

Installation of the Program

The program COPSAT.PAS has been interfaced as option H - INFLIBNET-NCSI COPSAT SERVICE in the main menu. The file AEXISI.FMT in menu subdirectory of CDS/ISIS is changed for this purpose.

Operation

By selecting the option H-INFLIBNET-NCSI COPSAT SERVICE from the main menu of ISIS, user will get the following menu.

INFLIBNET - NCSI COPSAT SERVICE

1. Title Search

2. Author Search

3. Journal Search

4. Publication details search

5. Keywords Search

6. Boolean Search

0. Exit to CDS/ISIS

Enter your choice.....:

Option / 1 allows the user to search for the title of the paper from the database.

The search expression may be a full statement or a part statement ending with right truncation $ sign....

Ex : Hypermedia link services and their application to Multimedia information management or Hypermedia link$

Based on the sample database the searched results are displayed as follows :

RECORD.....:55

TITLE......:Hypermedia Link Services and Their Application to Multimedia Information Management

AUTHOR(S)..:Hall W; Davis H.

ADDRESS....:W Hall, Univ Southampton, Dept.Electr & Comp Sci,

Southampton SO9 6NH, Hants, England.

SOURCE....:Information and Software Technology. 36:4 (APR 1994). 197-202

KEYWORDS..:Hypermedia; Link Services; Microcosm; Multimedia Information Systems.

RECORD...:243

TITLE....:Time-Varying Sensitive Regions in Dynamic Multimedia Objects - A Pragmatic Approach to Content-Based

Retrieval from Video.

AUTHOR(S):Burrill V; Kirste T; Weiss J.

ADDRESS..:V Burrill, Rutherford Appleton Lab, Dept Informat, Didcot OX11 0QX, Oxon, England.

SOURCE..:Information and Software Technology. 36:4(APR 1994). 213-223

KEYWORDS:Hypermedia, Anchoring; Content-Based Retrieval from Video; Dynamic Multimedia.

Similarly when the option 2 is selected, user will be allowed to search by Name of author(s).

The search expression may be a full statement or a part statement ending with right truncation $ sign...

The users are prompted to supply the name of author for search. The search statement can be full name of author or part with right truncation. For example Enter the search statement for author as :

Johnson$

Sample out put for the search on name of author Johnson$

RECORD...:627

TITLE....:Error-prone replication of repeated DNA sequences by T7 DNA polymerase in the absence of its processivity subunit.

AUTHOR(S):Kunkel TA; Patel SS; Johnson KA.

ADDRESS.:TA Kunkel, Niehs, Molec Genet Lab, Res Triangle Pk, NC 27709 USA.

SOURCE..:Proceedings of the National Academy of Sciences of the United States of America. 91:15 (JUL 19 1994). 6830-6834.

ABSTRACT:We have examined the effect of thioredoxin, an accessory protein that confers high processivity to bacteriophage

T7 DNA polymerase, on the fidelity of DNA synthesis. In the presence of thioredoxin,

exonuclease-proficient T7

DNA polumerase is highly accurate,

repetitive sequences occurs in the absence of a

replication accessory protein.

KEYWORDS:fidelity; strand slippage; DNA replication;accessory proteins.

When the option 3 from the above menu is selected user will be allowed to search by journal name.

Following records are the search results for the journal of hydrology from the sample database :-

RECORD...:3092

TITLE....:Introduction.

AUTHOR(S):Wheater HS; Raats PAC;Armstrong AC.

ADDRESS..:HS Wheater, Univ London Imperial Coll Sci & Technol,

Dept. Civil Engn, London SW7 2BU, England.

SOURCE...:Journal of Hydrology. 159: 1-4(JUL 1994). r9-R13.

RECORD...:3096

TITLE....:Effects of the Investigation Scale on Pumping Text

Results in Heterogeneous Porous Aquifers.

AUTHOR(S):Schad H; Teutsch G.

ADDRESS..:H.Schad, Univ Stuttgart, Lehrstuhl Hydraul &

Grundwasser, Inst Wasserbau, Postfach 80 1140, D-70550

Stuttgart, Germany.

SOURCE...:Journal of Hydrology. 159: 1-4 (JUL 1994). 61-77

Option 4 allows the user to search through the database for publication details. Similarly option 5 is given to the user to search for the subject discriptor.

Ex.: Infrared Spectroscopy or Infrared spect$

Sample record is displayed as follows :-

RECORD...:534

TITLE....:Comparative studies of different modifications of calcium valproate.

AUTHOR(S):Kalinkova GN; Hristov SI; Petrov L.

ADDRESS..:GN Kalinkova, Fac Pharm Sofia, 2 Dunav Str, BU-1000 Sofic, Bulgaria.

SOURCE...:International Journal of Pharmaceutics. 115:2 (MAR 7 1995). 245-248.

ABSTRACT.:The crystalline state of calcium valproate (CaV) in different modifications, prepared by us, was investigated using infrared (IR) spectroscopy, X-ray powder diffraction patterns, simultaneous thermal analysis (STA combined thermogravimetry TG and differential thermal analysis DTA), and scanning electron microscopy (SEM). The influence of the simple recrystallized solvent on the crystal state of the drug is evident.

KEYWORDS.:calcium valproate; antiepileptic drug; crystalline modification; infrared spectroscopy; thermogravimetry; differential thermal analysis; scanning electron microscopy; recrystallization.

In order to retrive the specific records especially when the database is large user needs to make use of boolean AND OR NOT operation. Option 6 in the menu may be used for boolean search.

Sample search results from the boolean AND operation.

Ex:INFORMATION AND COMPUTATION$* 112$

Here the results of this search retrives all the records from the journal of information and computation with Volume No.112 issue No.2 August, 1994 from the sample database is explained as under;

RECORD...:20

TITLE....:Equational Formulae with Membership Constraints.

AUTHOR(S):Comon H; Delor C.

ADDRESS..:H Comon, Univ Paris 11, Rech Informat Lab, Bat 490

F-91405 Orsay, France.

SOURCE...:Information and Computation. 112:2 (AUG 1 1994). 167-216.

RECORD...:21

TITLE....:Depth Reduction for Circuits of Unbounded Fan-in.

AUTHOR(S):Allender E; Hertrampf U.

ADDRESS..:E. Allender, Rutgers State Unive, Dept Comp Sci, New Brunswick, NJ 08903 USA.

SOFTWARE FOR CONVERTING STRUCTURED TEXT FILE INTO ISO-2709 FORMAT

We understand that many university libraries have already subscribed the COPSATdata in text files and maintaining the floppy diskettes. Since the text file does not allows the user to searth through the text file as desired by him/her. Therefore it is felt that the need for software converting these text files into ISO-2709 format, so as to include in the COPSAT database which will be of great help to the researchers in the universities. This software is manu driven expects the text file as a input which will be converted and put in ISO-2709 format, in the desired file names. These converted files needs to be imported into the CDS/ISIS database in order to update the COPSAT database.

CONCLUSION

In one of his studies Macdonald predicts that 'The future belongs neither to the makers of technology nor the providers of information, but it will be determined by the users of information.' The library and information professional should take the challenge of providing the relevant information to the research community effectively and efficiently, otherwise the information technologies will bypass libraries and will deliver information directly to the user. With the use of sophisticated tools like CDS/ISIS one can provide the contents page information to their user clientele within the minimum possible time. When the database is created in CDS/ISIS end user is expected to know all the operations of ISIS for searching through the database and printing, which can be avoided by using this program COPSAT.PAS. In order to convert the records into ISO-2709 format, the program COPSAT.EXE may be used. These programs may be supplied on request by NFLIBNET Programme to the COPSAT subscribers. I conclude that the Library and Information professional should come forward to subscribe the COPSAT service in ISO-2709 format to serve their user community in a better way.

ACKNOWLEDGEMENT

BIBLIOGRAPHY

1. Haravu L.J. : "Strategies for the adoption of new information technologies in Indian libraries:, paper presented at the 2nd workshop for the library executives jointly organized by INFLIBNET Programme, Ahmedabad and Osmania University Hyderabad. Feb.3-10,1995.

2. Patel D.R.: "CCOD (Current Contents On Diskette): An information retrieval tool", presented during the CALIBER jointly organized by NFLIBNET Programme, Ahmedabad and University of Hyderabad, Feb. 10-12, 1995.

3. Paul Pandian, Cholin V.S. and Arora O.P. : "Bibliographic standards adopted at NFLIBNET Programme", presented at CALIBER-94 organised by INFLIBNET Programme, .G.C. Ahmedabad, February 19-20, 1994.