SERIAL CONTROL USING CDS / ISIS

R.K. Shukla[*]

Delhi College of Engineering, Bawana Road, Delhi – 110042, India

ABSTRACT

Describes the capabilities available with CDS/ ISIS software for library Automation. Details the sample program developed for Serial control in Libraries. Details the Database structure, worksheet & Field select table used for serial control.

Keywords: Library Automation, Serial Control, CDS/ ISIS Program, CDS/ ISIS program.

LIBRARY AUTOMATION

Library Automation stated in simple terms, is the application of computers and utilization of computer-based products and services in the perfomance of different library operations and functions or in the provision of services and production of output products. Automation implies a high degree of mechanisation wherein routines and repetitive tasks or operations and processes are left to be performed by machines with little or no intervention by human beings. Automation implies also that control over the performance of the tasks, operations, processes is automatic, i.e. without any or with minimal human intervention, the greater the degree of automation. This does not mean that automation does away with human beings. On the contrary, human beings are relieved of routine chores giving them more time for tasks which require their intelligence.

Library activities can be classified into two groups namely :

1. **House Keeping operations, and**
2. **Information services**

The term library automation generally refers to the application of computers in house keeping operations such as :

* **acquisition**
* **circulation control**
* **serial control**
* **interlibrary loan** etc.

and information services such as :

* **cataloguing**
* **indexing**
* **current awareness services**
* **selective dessemination of information**
* **retrospective search services** etc.

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[*] Librarian , Delhi College of Engineering, Bawana Road, Delhi – 110042, India

```
WRITELN('3 FILE OUTPUT');
BOX(13,20,3,32,1);
CURSOR(14,21);
WRITELN('SELECT OPTION 1-3');
CURSOR(14,40);
READLN (E);
IF E=1 THEN
SO2;
IF E=2 THEN
SO1;
IF E=3 THEN
SO3;
END;


{*************************************************************}
{MAIN PROGRAMME}

BEGIN
CLEAR;
BOX(1,20,3,25,2);
CURSOR(2,21);

WRITELN('1.SUPPLY ORDER ');


BOX(4,20,3,25,2);
CURSOR(5,21);
WRITELN('2 REMINDER');
BOX(7,20,3,25,2);
CURSOR(8,21);
WRITELN('3 JOURNAL RECEIPT ENTRY');

BOX(10,20,3,25,2);
CURSOR(11,21);
WRITELN('4 CREATE NEW RECORDS');

BOX(13,20,3,25,2);
CURSOR(14,21);
WRITELN('5 GENERATE RECEIPT DB');




BOX(16,20,3,25,2);
CURSOR(17,21);
WRITELN('6 LIST OF JOURNALS');

BOX(18,20,3,25,2);
CURSOR(19,21);
WRITELN('7 EXIT');


BOX(21,20,3,25,2);
CURSOR(22,21);
WRITELN(' SELECT OPTION 1-7');
CURSOR (22,43);

READLN(F);
```

PROBLEM DEFINITION

CDS / ISIS does not instantly provide for relational database facilities unless a program is written in CDS Pascal to link the desired database. Serial control activities being an activity involving several database can not be instantly handeled with available CDS / ISIS software unless a program is written in CDS Pascal to link the various database. The need to develop the present program was felt to control the serial acquisition of DELHI COLLEGE OF ENGINEERING LIBRARY.

The program has two database namely SERIAL and RECT. The serial database has the complete details of the serials subscribed. The FDT, Worksheet, FST and Print formats are as under –

FDT OF SERIAL DATA BASE

TAG	NAME	LEN	TYPE	REP	DELIMITERS/ PATTERN
1	RENEWAL DATE	6	N		
40	LANGUAGE	15	A	R	
101	ISSN	10	X		
103	CODE OF SERIAL	3	X		
200	TITLE	150	X		
400	PUBLISHER DETAILS	150	X		ABCD
428	PERIOD OF SUBSCRIPTION	15	X		
429	VENDOR CODE	2	X		
441	GRACE PERIOD	3	N		
449	DATE OF FIRST ISSUE	6	N		
459	FREQUENCY	2	X		
465	PRICE (Rs & FOREIGN CURRENCY	100	X		AB
490	VOL	10	X		
500	NOTE	250	X		
620	BROAD SUBJECT	50	X	R	

FST OF SERIAL DATA BASE

ID	IT	DATA EXTRACTION FORMAT
40	0	V40
110	0	V110
200	0	V200
400	0	V400^A
401	0	V400^D
103	0	V103
429	0	V429
620	0	V620
10	0	V490

SERIAL CONTROL

By serials we mean publication issued at regular intervals and intended to be continued indefinitely. Serials include Journals, news papers, annual reports, advances or progress series, proceedings of learned bodies, monographic series, ect. By serial control we mean the establishment of policies, procedures and operations for the management of the acquisition functions, and generally for collection building. Serials unlike books, present several problems in aquision. Some of these are:

*   delay in publication of issues often occurs
*   set of issues may be combined into a single issue
*   supplements to some volumes may be published
*   publication may cease temporarily
*   publisher may be changed

In view of the above problems, and the lack of predictability of serials publications programmes, the automation of serial control is considered to be the most difficult area of library automation. However, there are today a number of readymade software package for serials control with varying capabilities. Typically and automated serials control system is expected to have the following capabilities:

*   Monitor the expiry of journal subscription and send out renewal orders to publishers / vendors or prepare a list of serials due for renewal
*   ensure the issue received are properly registered
*   send out reminders for issues not yet received or those which are overdue
*   prepare list of serials by vendors and or publishers
*   prepare list of duplicates and wants for exchange purpose
*   maintain records of payments expenditures and budgets by fund
*   prepare routing slips for journal issues
*   enable updating of holding lists
*   prepare list of serials ready for binding

Automation of serials undoubtedly ensures better control over the functions especially when the number of serials to be acquired is high. Automation enables better control over receipts and follow-up, and timely action in renewal.

CDS / ISIS PACKAGE

CDS / ISIS is a menu driven generalized information storage and retrieval system designed specially for computerised management of structured non-numerical databases. Although it deals with text and words, and therefore offers many of the features normally found in a word processing package, it does more than just processing of text. This is because the text to be processed is structured into data elements that one defines.

The package is based on the program of the same name developed in 1965 and intended for IBM mainfroms. It is combination of "computerised documentation system (CDS) and "Intergrated set of information system"(ISIS). The minimicro CDS/ ISIS package was developed by the division of Library, Archive and Documentation Services of UNESCO the UNESCO, General Information programme (PGI), and is distributed free of cost to non profit organizations in developing countries.

DISPLAY FORMAT

'MFN:' MFN/MDL, "TITLE:", V200,/ "LANGUAGE:"V40, "ISSN:" V101, "FREQUENCY:", V459/"PUBLISHER:"V400/"SUBSCRIPTION PERIOD:"V428/"VOL:"V490,"PRICE:" V465/" RENEWAL DATE:'V1/"SERIAL CODE:"V103/#

The RECT database has the details of each issue of the serials to be received and already received. It is also used for generation of reminders and generation of a current awareness bulletins of Journals received

The details of FDT, Worksheet –
FST and Print Formats are as under –

FDT OF RECEIPT DATABASE

TAG	NAME	LEN	TYPE	REP	DELIMITER/PATTERN
103	CODE OF SERIAL	3	N		
200	TITLE	150	X		
448	DATE OF RECEIPT	6	N		
449	DUE DATE	6	N		
459	FREQUENCY	2	N		
490	VOLUME	5	X		
491	ISSUE	2	N		

WORKSHEET OF RECT DATABASE

Title _____

Volume _____ Issue _____

Date of receipt _____

Code of Serial _____

Frequency _____ Due date _____

FST OF RECT DATABASE

ID	IT	DATA EXTRACTION FORMAT
1	0	V200
2	0	V103
3	0	V491

PRINT FORMAT OF RECT DATA BASE

If P(v448) then MFN(3)," "v200/"Received on:", v448*4,"-"v448*2.2,"-"v448.2/" Issue received", v491/"Frequency:" v459/FI

The Program can be run from the main menu of Advance Pascal Programming service of CDS/ISIS. While it is run the following menu appears –

```
    1.  SUPPLY ORDER
    2.  REMINDER
    3.  JOURNAL RECEIPT ENTRY
    4.  CREAT NEW RECORD
    5.  GENERATE RECEIPT DB
    6.  LIST OF JOURNALS
    7.  EXIT

        SELECT OPTION 1-7
```

The first option 1. SUPPLY ORDER when selected displays another menu as under-

```
            JOURNAL SO

        1.  FILE OUTPUT
        2.  SCREEN OUTPUT
        3.  PRINTED OUTPUT

        SELECT OPTION  1-3
```

After selecting the desired option it options the Serial database and prepares the Supply Order for each record. The file out put is sent to ....

The second option 2. REMINDER when selected presents another menu as under :-

```
    REMINDER GENERATION SERVICE

        1.  FILE OUTPUT
        2.  SCREEN OUTPUT
        3.  PRINTED OUTPUT

        SELECT OPTION  1-3
```

After selection of desired option it opens **Rect database**, searches for unreceived issues and prepares the reminders accordingly.
The file output is sent to.......

The third option **3. JOURNAL RECEIPT ENTRY** when selected opens the Rect database and presents the following menu –

> **Enter code No of serial and issue number to be updated –**
> (for example 001*4 where 001 is code number for serial and 4 is an issue number)

Set 2:001*4
P= 5 001
P= 66 4
T= 1- # 3:001.4
T=1-# 2:#3
--->

If search result is zero than it comes out from ISIS to Dos Prompt C:\>

Otherwise it provides the following Worksheet for data entry.

Title _____	
Quantum_____	
Vol.8 _____	Issue 4 _____
Date of Receipt 970627 _____	Code of serial 001 _____
Frequency 6 _____	Due date 970101 ____ _____

After entering the desired information and quiting the worksheet the following menu is presented:-

N(EXT ISSUE)   Q(UIT)

The above process is repeated till the Quit option is selected.

The option **4. CREATE NEW RECORDS** when selected presents the following worksheet for data entry.

Code of serial _____	ISSN _____	Language _____
Title_____		Frequency _____
Period of subscription _____		
Date of first issue_____		Grace period _____
Renewal Date_____		
Publisher details_____		
Broad Subjects_____		
Vol. No._____		

After completion of Worksheet the following option is presented

Create New Records Y/N

and the above action is repeated till **N** option is selected.

Option **5. GENERATE RECEIPT DB** presents the following options –

Enter first MFN to start copying
Enter last MFN

After entering the desired information the new records are added in Rect database

Option **6. LIST   OF   JOURNALS** presents the following options and presents the result accordingly

Journal List
1.   **Screen output** 2.   **Printer out** 3.   **File output**
Select option 1-3
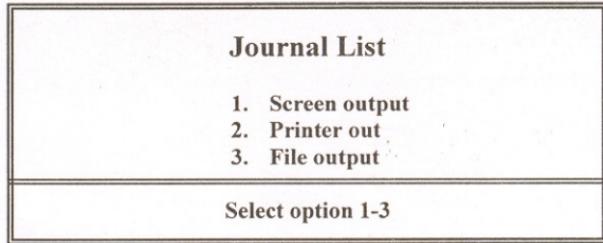
The file out put is presented in….

The present program can be modified suitably and be used as per requirements of a particular library and information centre.

```
L:=SETPOS(K,0);
N:=0;
IF L=0 THEN
BEGIN
CURSOR(9,1);
WRITELN(OUT,'');
WRITELN(OUT,'NO JOURNAL IS DUE ');
END
ELSE
BEGIN
LETT;
REPEAT

N:=N+1;
M:=SETPOS(K,N);
O:=RECORD(M);
GETFMT('@REM');
LW:=80;
P:=FORMAT(LW);
NL:=LINES;
Q:=1;
REPEAT

FD:=NXTLINE(FE);
WRITELN(OUT,FE);
Q:=Q+1;
UNTIL Q>NL;

UNTIL N=L;
LET1;
END;
WRITELN(OUT,'.PA.');
END;
{****************************************************************}
{JOURNAL REMINDER SCREEN OUTPUT}
PROCEDURE REM2;
VAR I,J,K,L,M,N,O,P,Q,NL,LW,FD:REAL;
VAR FC,FE,FF,NRD,NS:STRING;

BEGIN
NS:='Y';
I:=0;
OPEN('RECT');
FC:='? A(V448)';
K:=SEARCH(FC);
L:=SETPOS(K,0);
N:=0;
NRD:='Y';
IF L=0 THEN
BEGIN
CLEAR;
CURSOR(9,1);
WRITELN(OUT,'');
WRITELN('NO JOUNAL IS DUE');
END
ELSE
BEGIN
CLEAR;
CURSOR(9,5);
WRITELN(OUT,'');
```

```
WRITE(OUT,ENCINT(L,1));
WRITELN(OUT,' RECORDS HAVE BEEN RETRIEVED WITH THE SEARCH EXPRESSION ABOVE.');
WRITELN('');
REPEAT
N:=N+1;
M:=SETPOS(K,N);
O:=RECORD(M);
GETFMT('@REM');
LW:=80;
P:=FORMAT(LW);
NL:=LINES;
Q:=1;
CURSOR(11,1);
REPEAT
FD:=NXTLINE(FE);
WRITELN(FE);
Q:=Q+1;
UNTIL Q>NL;
CURSOR(23,1);
IF (N<L) THEN WRITE('DO YOU WANT TO DISPLAY THE NEXT RECORD RETRIEVED? Y/N ');
READLN(NRD);
UC(NRD);
CLEAR;
IF N=0 THEN

WRITELN('');
UNTIL (N=L) OR (NRD='N');
END;
END;
{*************************************************************}
{JOURNAL REMINDER PRINTER OUTPUT}
PROCEDURE REM3;
VAR I,J,K,L,M,N,O,P,Q,NL,LW,FD:REAL;
VAR FC,FE,FF,NRD,NS:STRING;

BEGIN
NS:='Y';
I:=0;
OPEN('RECT');
FC:='? A(V448)';
K:=SEARCH(FC);
L:=SETPOS(K,0);
N:=0;
IF L=0 THEN
BEGIN
CURSOR(9,1);

WRITELN(OUT,'NO RECORD RETRIEVED WITH THE SEARCH EXPRESSION');
END
ELSE
BEGIN
ASSIGN('OUT','PRN');
WRITELN(OUT,'');
REPEAT
WRITELN(OUT,'                    DELHI COLLEGE OF ENGINEERING ');
WRITELN(OUT,'                       BAWANA ROAD DELHI-42 ');
WRITELN(OUT,'                           LIBRARY ');
WRITELN(OUT,' ');
WRITELN(OUT,' ');
WRITELN(OUT,' ');
```

```
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,'TO,');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,'     THE FOLLOWING JOURNALS HAS NOT BEEN RECEIVED IN THE LIBRARY SO
    WRITELN(OUT,'     KINDLY ARRANGE TO SUPPLY IMMEDIATELY.');
    WRITELN(OUT,' ');
    N:=N+1;
    M:=SETPOS(K,N);
    O:=RECORD(M);
    GETFMT('@REM');
    LW:=80;
    P:=FORMAT(LW);
    NL:=LINES;
    Q:=1;
    CURSOR(11,1);
    REPEAT
    FD:=NXTLINE(FE);
    WRITELN(OUT,FE);
    Q:=Q+1;
    UNTIL Q>NL;
    CURSOR(23,1);
    IF N=0 THEN
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,'                              LIBRARIAN');
    WRITELN('');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    WRITELN(OUT,' ');
    UNTIL N=L;
    END;
    END;
    {*********************************************************}
    PROCEDURE REM;
    BEGIN
    CLEAR;

    BOX(1,20,3,32,1);
    CURSOR(2,21);
    WRITELN('  REMINDER GENERATION SERVICES');

    BOX(4,20,3,32,1);
    CURSOR(5,21);
```

```
WRITELN('1  FILE OUTPUT');
BOX(7,20,3,32,1);
CURSOR(8,21);
WRITELN('2  SCREEN OUTPUT ');
BOX(10,20,3,32,1);
CURSOR(11,21);
WRITELN('3 PRINTED OUTPUT');
BOX(13,20,3,32,1);

CURSOR(14,21);
WRITELN('SELECT OPTION 1-3');
CURSOR(14,40);
READLN (E);
IF E=1 THEN
REM1;
IF E=2 THEN
REM2;
IF E=3 THEN
REM3;
END;


{*****************************************************************}
PROCEDURE REC1;
VAR A,B,C,D,F,G,H,LMFN:REAL;
VAR I,J,K:STRING;
BEGIN
CLEARDATA;
CURSOR(5,5);
WRITELN('ENTER CODE NO.OF SERIAL  AND ISSUE NO. TO BE UPDATED');
WRITELN('(FOR EXAMPLE OO1*4  WHERE OO1 IS A CODE FOR SERIAL & 4 IS AN ISSUE NO)'
CURSOR(5,60);
READLN(I);
OPEN('RECT');
A:=SEARCH(I);
B:=SETPOS(A,1);
LMFN:=B-1;
REPEAT
C:=RECORD(B);
D:=WORKSHEET('RECT');
IF D=0 THEN
BEGIN
G:=DATAENTRY(' ');
LMFN:=LMFN+1;
END;
UPDATE;
UNTIL LMFN>B;
END;

{*****************************************************************}
PROCEDURE REC;    {FOR RETRIEVING RECORD FOR DATA ENTRY OF SERIAL RECEIPT}
VAR F,Y:STRING;

BEGIN
REPEAT
CLEAR;
REC1;
CLEAR;
CURSOR(23,1);
WRITE('N(EXT ISSUE) Q(UIT)');
```

```
F:=INKEY;
UC(F);
UNTIL F='Q';
END;

{************************************************************}
{THE PROGRAM OPENS WORKSHEET IN SERIAL DATABASE}
{AND PRESENTS IT FOR CREATION OF NEW RECORD}

PROCEDURE CREAT;
VAR I,J,K:REAL;
VAR L:STRING;
BEGIN
OPEN('SERIAL');
I:=WORKSHEET('SERIAL');
IF I=0 THEN
BEGIN
REPEAT
K:=NEWREC;
J:=DATAENTRY('   ');
CLEAR;
CURSOR(10,20);
WRITELN('CREATE NEW RECORD Y/N');
READLN(L);
UC(L);
UNTIL L='N'
END;
UPDIF;
END;
{************************************************************}
{COPIES FROM SERIAL TO RECT RECORDS }
PROCEDURE COPY;
VAR D,DL,I,J,K,L,M,N,Q,R,S,T,U,C,V:REAL;
VAR FC,FR,O,P,W,DD,GT:STRING;
BEGIN
CLEAR;
WRITELN('ENTER FIRST  MFN TO START COPYING');
READLN(I);
WRITELN('ENTER LAST MFN TO END COPYING');
READLN(N);
REPEAT
OPEN('SERIAL');
J:=RECORD(I);
I:=I+1;
FC:=FIELD(FIELDN(200,1));
FR:=FIELD(FIELDN(459,1));
O:=FIELD(FIELDN(490,1));
P:=FIELD(FIELDN(103,1));
DD:=FIELD(FIELDN(449,1));
GT:=FIELD(FIELDN(447,1));
CLOSE;
OPEN('RECT');
C:=0;
DL:=VAL(DD)+VAL(GT);
WHILE C<>VAL(FR) DO
BEGIN
U:=NEWREC;
C:=C+1;
W:=ENCINT(C,1);
```

```
DD:=ENCINT(DL,1);
Q:=FLDADD(200,1,FC);
R:=FLDADD(459,1,FR);
S:=FLDADD(490,1,O);
T:=FLDADD(103,1,P);
V:=FLDADD(491,1,W);
D:=FLDADD(449,1,DD);
DL:=DL-VAL(GT);
UPDATE;
END;
UPDIF;
CLOSE;
C:=0;
UNTIL N+1=I;
END;

{*************************************************************}
{LISTS JOURNALS OF DATA BASE ON SCREEN}
PROCEDURE LIST2;
VAR I,J,K,L,M:REAL;
VAR S,SL,LIN,O:STRING;
BEGIN
CLEAR;
J:=1;
CURSOR(M,11);
OPEN('SERIAL');
O:='Y';
REPEAT
CLEAR;
I:=RECORD(J);
GETFMT('@SERIAL');
K:=FORMAT(54);
REPEAT
L:=NXTLINE(LIN);
BOX(7,10,15,55,2);
CURSOR (M,11);
WRITELN(LIN);
M:=M+1;
UNTIL L<>0;
CURSOR(22,11);
WRITE('WANT TO DISPLAY NEXT SERIAL Y/N: ');
READLN(O);
UC(O);
J:=J+1;
CLEAR;
M:=8;
UNTIL (O='N') OR (J=MAXMFN);
CURSOR(12,31);
IF J=MAXMFN THEN

WRITELN('SORRY NO MORE TITLE');
CLOSE;
END;
{*************************************************************}
{LISTS JOURNALS OF DATA BASE ON PRINTER}
PROCEDURE LIST1;
VAR I,J,K,L:REAL;
VAR S,SL,LIN,O:STRING;
BEGIN
CLEAR;
```

```
ASSIGN('OUT','PRN');
WRITELN('OUT','');
J:=1;
OPEN('SERIAL');
O:='Y';
REPEAT
CLEAR;
I:=RECORD(J);
GETFMT('@SERIAL');
K:=FORMAT(54);
REPEAT
L:=NXTLINE(LIN);
WRITELN(OUT,LIN);
UNTIL L<>0;
J:=J+1;
CLEAR;
UNTIL J=MAXMFN;
CLOSE;
END;


{*********************************************************************}
{LISTS JOURNALS OF DATA BASE IN FILE}
PROCEDURE LIST3;
VAR I,J,K,L:REAL;
VAR S,SL,LIN,O:STRING;
BEGIN
CLEAR;
ASSIGN('OUT','C:\ISIS\WORK\JLLIST');
J:=1;
OPEN('SERIAL');
O:='Y';
REPEAT
CLEAR;
I:=RECORD(J);
GETFMT('@SERIAL');
K:=FORMAT(54);
REPEAT
L:=NXTLINE(LIN);
WRITELN(OUT,LIN);
UNTIL L<>0;
J:=J+1;
CLEAR;
UNTIL J=MAXMFN;
CLOSE;
END;
{*********************************************************}
PROCEDURE LIST;
BEGIN
CLEAR;

BOX(1,20,3,32,1);
CURSOR(2,21);
WRITELN('  JOURNALS LIST');

BOX(4,20,3,32,1);
CURSOR(5,21);
WRITELN('1  SCREEN OUTPUT');
BOX(7,20,3,32,1);
CURSOR(8,21);
```

```
WRITELN('2  PRINTER OUTPUT ');
BOX(10,20,3,32,1);
CURSOR(11,21);
WRITELN('3 FILE OUTPUT');
BOX(13,20,3,32,1);

CURSOR(14,21);
WRITELN('SELECT OPTION 1-3');
CURSOR(14,40);
READLN (E),
IF E=1 THEN
LIST2;
IF E=2 THEN
LIST1;
IF E=3 THEN
LIST3;
END;
{*******************************************************}
{SUPPLY ORDER FOR JOUNALS IN SCREEN}
PROCEDURE SO2;
VAR I,J,K,L,M:REAL;
VAR S,SL,LIN,O:STRING;
BEGIN
CLEAR;
J:=1;
OPEN('SERIAL');
O:='Y';
REPEAT
CLEAR;
I:=RECORD(J);
GETFMT('@SO');
K:=FORMAT(79);
REPEAT
L:=NXTLINE(LIN);
WRITELN(LIN);
M:=M+1;
UNTIL L<>0;
WRITE('WANT TO DISPLAY NEXT SO Y/N: ');
READLN(O);
UC(O);
J:=J+1;
CLEAR;
UNTIL (O='N') OR (J=MAXMFN);
CURSOR(12,31);
IF J=MAXMFN THEN

WRITELN('SORRY NO MORE TITLE');
CLOSE;
END;
{*************************************************************}
{ JOURNALS SO ON  PRINTER}
PROCEDURE SO1;
VAR I,J,K,L:REAL;
VAR S,SL,LIN,O:STRING;
BEGIN
CLEAR;
ASSIGN('OUT','PRN');
WRITELN('OUT','');
J:=1;
```

```
OPEN('SERIAL');
O:='Y';
REPEAT
CLEAR;
I:=RECORD(J);
GETFMT('@SO');
K:=FORMAT(79);
REPEAT
L:=NXTLINE(LIN);
WRITELN(OUT,LIN);
UNTIL L<>0;
J:=J+1;
CLEAR;
UNTIL J=MAXMFN;
CLOSE;
END;


{*******************************************************************}
{ JOURNALS SO  IN FILE}
PROCEDURE SO3;
VAR I,J,K,L:REAL;
VAR S,SL,LIN,O:STRING;
BEGIN
CLEAR;
ASSIGN('OUT','C:\ISIS\WORK\JLSO');
J:=1;
OPEN('SERIAL');
O:='Y';
REPEAT
CLEAR;
I:=RECORD(J);
GETFMT('@SO');
K:=FORMAT(79);
REPEAT
L:=NXTLINE(LIN);
WRITELN(OUT,LIN);
UNTIL L<>0;
J:=J+1;
CLEAR;
UNTIL J=MAXMFN;
CLOSE;
END;
{******************************************************}
PROCEDURE SO;
BEGIN
CLEAR;

BOX(1,20,3,32,1);
CURSOR(2,21);
WRITELN('  JOURNALS S O');

BOX(4,20,3,32,1);
CURSOR(5,21);
WRITELN('1  SCREEN OUTPUT');
BOX(7,20,3,32,1);
CURSOR(8,21);
WRITELN('2  PRINTER OUTPUT ');
BOX(10,20,3,32,1);
CURSOR(11,21);
```

```
IF F=2 THEN
REM;
IF F=3 THEN
REC;
IF F=4 THEN
CREAT;
IF F=5 THEN
COPY;
IF F=6 THEN
LIST;
IF F=1 THEN
SO;
IF F=7 THEN
CLOSE;
END.
```