

IDENTIFICATION DIVISION.

PROGRAM-ID. LOAD02N.

DATE-WRITTEN. JULY, 2025.

DATE-COMPILED.

REMARKS. LOAD DATA INTO VSAM RRDS CLUSTERS,
 VERIFY DATA IS IN ASCENDING KEY SEQUENCE, NO DUPLICATES,
 REPORT LISTS RECORDS LOADED AND ERRORS ENCOUNTERED.

ENVIRONMENT DIVISION.

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT DEPARTMENT-DATA-FILE

ASSIGN TO DEPTI.

SELECT COURSE-DATA-FILE

ASSIGN TO COURSEI.

SELECT SECTION-DATA-FILE

ASSIGN TO SECTI.

SELECT TABLES-FILE

ASSIGN TO TABLEO

ORGANIZATION IS RELATIVE

ACCESS IS RANDOM

RELATIVE KEY IS TABLEO-RELATIVE-KEY

FILE STATUS IS TABLEO-STATUS.

SELECT REPORT-FILE

ASSIGN TO S-REPORT.

DATA DIVISION.

FILE SECTION.

FD DEPARTMENT-DATA-FILE
 LABEL RECORDS STANDARD
 RECORD CONTAINS 80 CHARACTERS
 BLOCK CONTAINS 293 RECORDS
 DATA RECORD IS DEPARTMENT-DATA-RECORD.

01 DEPARTMENT-DATA-RECORD.
 02 DDR-NUMBER PIC 9(02).
 02 DDR-NAME PIC X(40).
 02 FILLER PIC X(38).

FD COURSE-DATA-FILE
 LABEL RECORDS STANDARD
 RECORD CONTAINS 80 CHARACTERS
 BLOCK CONTAINS 293 RECORDS

IDENTIFICATION DIVISION.

PROGRAM-ID. LOAD02V.

DATE-WRITTEN. JULY, 2025.

DATE-COMPILED.

REMARKS. LOAD DATA INTO VSAM RRDS CLUSTERS,
 VERIFY DATA IS IN ASCENDING KEY SEQUENCE, NO DUPLICATES,
 REPORT LISTS RECORDS LOADED AND ERRORS ENCOUNTERED.

ENVIRONMENT DIVISION.

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT DEPARTMENT-DATA-FILE

ASSIGN TO UT-S-DEPTI.

SELECT COURSE-DATA-FILE

ASSIGN TO UT-S-COURSEI.

SELECT SECTION-DATA-FILE

ASSIGN TO UT-S-SECTI.

SELECT REPORT-FILE

ASSIGN TO UR-S-REPORT.

DATA DIVISION.

FILE SECTION.

FD DEPARTMENT-DATA-FILE
 LABEL RECORDS STANDARD
 RECORD CONTAINS 80 CHARACTERS
 BLOCK CONTAINS 293 RECORDS
 DATA RECORD IS DEPARTMENT-DATA-RECORD.

01 DEPARTMENT-DATA-RECORD.
 02 DDR-NUMBER PIC 9(02).
 02 DDR-NAME PIC X(40).
 02 FILLER PIC X(38).

FD COURSE-DATA-FILE
 LABEL RECORDS STANDARD
 RECORD CONTAINS 80 CHARACTERS
 BLOCK CONTAINS 293 RECORDS

DATA RECORD IS COURSE-DATA-RECORD.

```

01 COURSE-DATA-RECORD.
   02 CDR-NUMBER          PIC 9(05).
   02 CDR-NAME            PIC X(50).
   02 CDR-HOURS           PIC 9(01).
   02 FILLER              PIC X(24).

```

```

FD SECTION-DATA-FILE
  LABEL RECORDS STANDARD
  RECORD CONTAINS 80 CHARACTERS
  BLOCK CONTAINS 293 RECORDS
  DATA RECORD IS SECTION-DATA-RECORD.

```

```

01 SECTION-DATA-RECORD.
   02 SDR-NUMBER          PIC 9(06).
   02 SDR-DESCRIPTION     PIC X(20).
   02 FILLER              PIC X(54).

```

```

FD TABLES-FILE
  RECORD CONTAINS 26 TO 57 CHARACTERS
  DATA RECORDS ARE DEPARTMENT-TABLE-RECORD,
                   COURSE-TABLE-RECORD,
                   SECTION-TABLE-RECORD.

```

```

01 DEPARTMENT-TABLE-RECORD.
   02 DTR-KEY.

```

```

       03 DTR-NUMBER      PIC 9(02).
       03 FILLER          PIC 9(04).
   02 DTR-NAME           PIC X(40).

```

```

01 COURSE-TABLE-RECORD.
   02 CTR-KEY.

```

```

       03 CTR-NUMBER      PIC 9(05).
       03 FILLER          PIC 9(01).
   02 CTR-NAME           PIC X(50).
   02 CTR-HOURS          PIC 9(01).

```

```

01 SECTION-TABLE-RECORD.
   02 STR-KEY.
       03 STR-NUMBER      PIC 9(06).

```

```

   02 STR-DESCRIPTION    PIC X(20).

```

DATA RECORD IS COURSE-DATA-RECORD.

```

01 COURSE-DATA-RECORD.
   02 CDR-NUMBER          PIC 9(05).
   02 CDR-NAME            PIC X(50).
   02 CDR-HOURS           PIC 9(01).
   02 FILLER              PIC X(24).

```

```

FD SECTION-DATA-FILE
  LABEL RECORDS STANDARD
  RECORD CONTAINS 80 CHARACTERS
  BLOCK CONTAINS 293 RECORDS
  DATA RECORD IS SECTION-DATA-RECORD.

```

```

01 SECTION-DATA-RECORD.
   02 SDR-NUMBER          PIC 9(06).
   02 SDR-DESCRIPTION     PIC X(20).
   02 FILLER              PIC X(54).

```

```

FD REPORT-FILE
  LABEL RECORDS OMITTED
  REPORTS ARE DEPT-LOAD-REPORT, COURSE-LOAD-REPORT,
             SECTION-LOAD-REPORT.

```

WORKING-STORAGE SECTION.

```

01 VSIO-PARAMETER-VALUES COPY VSAMIO.
01 TABLE0               COPY VSAMIOFB.
01 TABLES-RECORD        PIC X(57).
01 DEPARTMENT-TABLE-RECORD REDEFINES TABLES-RECORD.
   02 DTR-KEY             PIC 9(06).
   02 FILLER              REDEFINES DTR-KEY.

```

```

       03 DTR-NUMBER      PIC 9(02).
       03 FILLER          PIC 9(04).
   02 DTR-NAME           PIC X(40).

```

```

01 COURSE-TABLE-RECORD REDEFINES TABLES-RECORD.
   02 CTR-KEY           PIC 9(06).
   02 FILLER            REDEFINES CTR-KEY.

```

```

       03 CTR-NUMBER      PIC 9(05).
       03 FILLER          PIC 9(01).
   02 CTR-NAME           PIC X(50).
   02 CTR-HOURS          PIC 9(01).

```

```

01 SECTION-TABLE-RECORD REDEFINES TABLES-RECORD.
   02 STR-KEY           PIC 9(06).
   02 STR-NUMBER        REDEFINES STR-KEY
   PIC 9(06).

```

```

   02 STR-DESCRIPTION    PIC X(20).

```

FD REPORT-FILE
 LABEL RECORDS STANDARD
 REPORTS ARE DEPT-LOAD-REPORT, COURSE-LOAD-REPORT,
 SECTION-LOAD-REPORT.

WORKING-STORAGE SECTION.

01 DEPARTMENT-DATA-FILE-EOF-SW PIC X VALUE 'N'.
 88 DEPARTMENT-DATA-FILE-EOF VALUE 'Y'.

 01 COURSE-DATA-FILE-EOF-SW PIC X VALUE 'N'.
 88 COURSE-DATA-FILE-EOF VALUE 'Y'.

 01 SECTION-DATA-FILE-EOF-SW PIC X VALUE 'N'.
 88 SECTION-DATA-FILE-EOF VALUE 'Y'.

 01 KEY-SEQUENCE-ERROR-SW PIC 9(2) VALUE 00.
 88 NO-SEQUENCE-ERROR VALUE 00.
 88 OUT-OF-SEQUENCE VALUE 01.
 88 DUPLICATE-KEY VALUE 02.

01 TABLEO-RELATIVE-KEY PIC 9(06).

01 TABLEO-STATUS PIC X(02).

01 WS-STATUS-MESSAGE PIC X(30).

01 Y2K-GETD-PARAMETERS.
 02 Y2K-GETDP-DATE-G PIC 9(8).
 02 Y2K-GETDP-DATE-J PIC 9(7).
 02 Y2K-GETDP-ANUM PIC S9(7).
 02 Y2K-GETDP-CLOCK PIC 9(8).
 02 FILLER REDEFINES Y2K-GETDP-CLOCK.
 03 Y2K-GETDP-CLOCK-HH PIC 9(2).
 03 Y2K-GETDP-CLOCK-MM PIC 9(2).
 03 Y2K-GETDP-CLOCK-SS PIC 9(2).
 03 Y2K-GETDP-CLOCK-T PIC 9(1).
 03 Y2K-GETDP-CLOCK-H PIC 9(1).
 02 Y2K-GETDP-CLOCK12 PIC X(11).

01 Y2K-DFMT-PARAMETERS.
 02 Y2K-DFMTP-DATEIN PIC X(8).
 02 Y2K-DFMTP-MAJOR PIC X(1).
 02 Y2K-DFMTP-MINOR PIC X(1).
 02 Y2K-DFMTP-RETURN-CODE PIC 9(1).
 02 Y2K-DFMTP-OUTPUT-SIZE PIC S9(2).
 02 Y2K-DFMTP-OUTPUT PIC X(29).

01 DEPT-INPUT-COUNT PIC 9(5) VALUE 0.
 01 DEPT-ERROR-COUNT PIC 9(5) VALUE 0.
 01 DEPT-OUTPUT-COUNT PIC 9(5) VALUE 0.

01 DEPARTMENT-DATA-FILE-EOF-SW PIC X VALUE 'N'.
 88 DEPARTMENT-DATA-FILE-EOF VALUE 'Y'.

01 COURSE-DATA-FILE-EOF-SW PIC X VALUE 'N'.
 88 COURSE-DATA-FILE-EOF VALUE 'Y'.

01 SECTION-DATA-FILE-EOF-SW PIC X VALUE 'N'.
 88 SECTION-DATA-FILE-EOF VALUE 'Y'.

01 KEY-SEQUENCE-ERROR-SW PIC 9(2) VALUE 00.
 88 NO-SEQUENCE-ERROR VALUE 00.
 88 OUT-OF-SEQUENCE VALUE 01.
 88 DUPLICATE-KEY VALUE 02.

01 WS-STATUS-MESSAGE PIC X(30).

01 Y2K-GETD-PARAMETERS.
 02 Y2K-GETDP-DATE-G PIC 9(8).
 02 Y2K-GETDP-DATE-J PIC 9(7).
 02 Y2K-GETDP-ANUM PIC S9(7).
 02 Y2K-GETDP-CLOCK PIC 9(8).
 02 FILLER REDEFINES Y2K-GETDP-CLOCK.
 03 Y2K-GETDP-CLOCK-HH PIC 9(2).
 03 Y2K-GETDP-CLOCK-MM PIC 9(2).
 03 Y2K-GETDP-CLOCK-SS PIC 9(2).
 03 Y2K-GETDP-CLOCK-T PIC 9(1).
 03 Y2K-GETDP-CLOCK-H PIC 9(1).
 02 Y2K-GETDP-CLOCK12 PIC X(11).

01 Y2K-DFMT-PARAMETERS.
 02 Y2K-DFMTP-DATEIN PIC X(8).
 02 Y2K-DFMTP-MAJOR PIC X(1).
 02 Y2K-DFMTP-MINOR PIC X(1).
 02 Y2K-DFMTP-RETURN-CODE PIC 9(1).
 02 Y2K-DFMTP-OUTPUT-SIZE PIC S9(2).
 02 Y2K-DFMTP-OUTPUT PIC X(29).

01 DEPT-INPUT-COUNT PIC 9(5) VALUE 0.
 01 DEPT-ERROR-COUNT PIC 9(5) VALUE 0.
 01 DEPT-OUTPUT-COUNT PIC 9(5) VALUE 0.

01 COURSE-INPUT-COUNT PIC 9(5) VALUE 0.
 01 COURSE-ERROR-COUNT PIC 9(5) VALUE 0.
 01 COURSE-OUTPUT-COUNT PIC 9(5) VALUE 0.

01 SECTION-INPUT-COUNT PIC 9(5) VALUE 0.
 01 SECTION-ERROR-COUNT PIC 9(5) VALUE 0.
 01 SECTION-OUTPUT-COUNT PIC 9(5) VALUE 0.

01 KEY-SEQUENCE-TESTS.
 02 PRIOR-DEPT-VALUE PIC 9(02) VALUE 0.
 02 PRIOR-COURSE-VALUE PIC 9(05) VALUE 0.
 02 PRIOR-SECTION-VALUE PIC 9(06) VALUE 0.

REPORT SECTION.

RD DEPT-LOAD-REPORT
 CONTROL IS FINAL
 PAGE LIMIT IS 66 LINES
 HEADING 2
 FIRST DETAIL 5
 LAST DETAIL 58.

01 DEPT-LOAD-HEADING TYPE PAGE HEADING.

02 LINE 2.

03 COLUMN 01 PIC X(10) SOURCE Y2K-DFMTP-OUTPUT.

03 COLUMN 15 PIC X(03) VALUE '(N)'.

03 COLUMN 30 PIC X(05) VALUE 'Royal'.

03 COLUMN 36 PIC X(06) VALUE 'Valley'.

03 COLUMN 43 PIC X(10) VALUE 'University'.

03 COLUMN 73 PIC X(04) VALUE 'Page'.

03 COLUMN 78 PIC ZZ9 SOURCE PAGE-COUNTER
OF DEPT-LOAD-REPORT.

02 LINE 3.

03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.

03 COLUMN 31 PIC X(21) VALUE 'Department Table Load'.

01 DEPT-LOAD-DETAIL TYPE DETAIL.

02 LINE PLUS 1.

03 COLUMN 12 PIC 9(02) SOURCE DTR-NUMBER.

03 COLUMN 15 PIC X(40) SOURCE DTR-NAME.

03 COLUMN 56 PIC X(30) SOURCE WS-STATUS-MESSAGE.

01 DEPT-LOAD-SUMMARY TYPE CONTROL FOOTING FINAL.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE DEPT-INPUT-COUNT.

03 COLUMN 29 PIC X(30) VALUE
'Records read from DEPTI'.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE DEPT-ERROR-COUNT.

01 COURSE-INPUT-COUNT PIC 9(5) VALUE 0.
 01 COURSE-ERROR-COUNT PIC 9(5) VALUE 0.
 01 COURSE-OUTPUT-COUNT PIC 9(5) VALUE 0.

01 SECTION-INPUT-COUNT PIC 9(5) VALUE 0.
 01 SECTION-ERROR-COUNT PIC 9(5) VALUE 0.
 01 SECTION-OUTPUT-COUNT PIC 9(5) VALUE 0.

01 KEY-SEQUENCE-TESTS.
 02 PRIOR-DEPT-VALUE PIC 9(02) VALUE 0.
 02 PRIOR-COURSE-VALUE PIC 9(05) VALUE 0.
 02 PRIOR-SECTION-VALUE PIC 9(06) VALUE 0.

REPORT SECTION.

RD DEPT-LOAD-REPORT
 CONTROL IS FINAL
 PAGE LIMIT IS 66 LINES
 HEADING 2
 FIRST DETAIL 5
 LAST DETAIL 58.

01 DEPT-LOAD-HEADING TYPE PAGE HEADING.

02 LINE 2.

03 COLUMN 01 PIC X(10) SOURCE Y2K-DFMTP-OUTPUT.

03 COLUMN 15 PIC X(03) VALUE '(V)'.

03 COLUMN 30 PIC X(05) VALUE 'Royal'.

03 COLUMN 36 PIC X(06) VALUE 'Valley'.

03 COLUMN 43 PIC X(10) VALUE 'University'.

03 COLUMN 73 PIC X(04) VALUE 'Page'.

03 COLUMN 78 PIC ZZ9 SOURCE PAGE-COUNTER
OF DEPT-LOAD-REPORT.

02 LINE 3.

03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.

03 COLUMN 31 PIC X(21) VALUE 'Department Table Load'.

01 DEPT-LOAD-DETAIL TYPE DETAIL.

02 LINE PLUS 1.

03 COLUMN 12 PIC 9(02) SOURCE DTR-NUMBER.

03 COLUMN 15 PIC X(40) SOURCE DTR-NAME.

03 COLUMN 56 PIC X(30) SOURCE WS-STATUS-MESSAGE.

01 DEPT-LOAD-SUMMARY TYPE CONTROL FOOTING FINAL.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE DEPT-INPUT-COUNT.

03 COLUMN 29 PIC X(30) VALUE
'Records read from DEPTI'.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE DEPT-ERROR-COUNT.

```

03 COLUMN 29 PIC X(30) VALUE
'Records omitted (with errors)'.
02 LINE PLUS 2.
03 COLUMN 21 PIC ZZ,ZZ9 SOURCE DEPT-OUTPUT-COUNT.
03 COLUMN 29 PIC X(30) VALUE
'Records written to DEPTO'.

RD COURSE-LOAD-REPORT
CONTROL IS FINAL
PAGE LIMIT IS 66 LINES
HEADING 2
FIRST DETAIL 5
LAST DETAIL 58.

01 COURSE-LOAD-HEADING TYPE PAGE HEADING.
02 LINE 2.
03 COLUMN 01 PIC X(10) SOURCE Y2K-DFMTP-OUTPUT.
03 COLUMN 15 PIC X(03) VALUE '(N)'.
03 COLUMN 30 PIC X(05) VALUE 'Royal'.
03 COLUMN 36 PIC X(06) VALUE 'Valley'.
03 COLUMN 43 PIC X(10) VALUE 'University'.
03 COLUMN 73 PIC X(04) VALUE 'Page'.
03 COLUMN 78 PIC ZZ9 SOURCE PAGE-COUNTER
OF COURSE-LOAD-REPORT.
02 LINE 3.
03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.
03 COLUMN 33 PIC X(17) VALUE 'Course Table Load'.

01 COURSE-LOAD-DETAIL TYPE DETAIL.
02 LINE PLUS 1.
03 COLUMN 04 PIC 9(05) SOURCE CTR-NUMBER.
03 COLUMN 10 PIC X(50) SOURCE CTR-NAME.
03 COLUMN 61 PIC 9(01) SOURCE CTR-HOURS.
03 COLUMN 63 PIC X(30) SOURCE WS-STATUS-MESSAGE.

01 COURSE-LOAD-SUMMARY TYPE CONTROL FOOTING FINAL.
02 LINE PLUS 2.
03 COLUMN 21 PIC ZZ,ZZ9 SOURCE COURSE-INPUT-COUNT.
03 COLUMN 29 PIC X(30) VALUE
'Records read from COURSEI'.
02 LINE PLUS 2.
03 COLUMN 21 PIC ZZ,ZZ9 SOURCE COURSE-ERROR-COUNT.
03 COLUMN 29 PIC X(30) VALUE
'Records omitted (with errors)'.
02 LINE PLUS 2.
03 COLUMN 21 PIC ZZ,ZZ9 SOURCE COURSE-OUTPUT-COUNT.
03 COLUMN 29 PIC X(30) VALUE
'Records written to COURSEO'.

```

```

03 COLUMN 29 PIC X(30) VALUE
'Records omitted (with errors)'.
02 LINE PLUS 2.
03 COLUMN 21 PIC ZZ,ZZ9 SOURCE DEPT-OUTPUT-COUNT.
03 COLUMN 29 PIC X(30) VALUE
'Records written to DEPTO'.

RD COURSE-LOAD-REPORT
CONTROL IS FINAL
PAGE LIMIT IS 66 LINES
HEADING 2
FIRST DETAIL 5
LAST DETAIL 58.

01 COURSE-LOAD-HEADING TYPE PAGE HEADING.
02 LINE 2.
03 COLUMN 01 PIC X(10) SOURCE Y2K-DFMTP-OUTPUT.
03 COLUMN 15 PIC X(03) VALUE '(N)'.
03 COLUMN 30 PIC X(05) VALUE 'Royal'.
03 COLUMN 36 PIC X(06) VALUE 'Valley'.
03 COLUMN 43 PIC X(10) VALUE 'University'.
03 COLUMN 73 PIC X(04) VALUE 'Page'.
03 COLUMN 78 PIC ZZ9 SOURCE PAGE-COUNTER
OF COURSE-LOAD-REPORT.
02 LINE 3.
03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.
03 COLUMN 33 PIC X(17) VALUE 'Course Table Load'.

01 COURSE-LOAD-DETAIL TYPE DETAIL.
02 LINE PLUS 1.
03 COLUMN 04 PIC 9(05) SOURCE CTR-NUMBER.
03 COLUMN 10 PIC X(50) SOURCE CTR-NAME.
03 COLUMN 61 PIC 9(01) SOURCE CTR-HOURS.
03 COLUMN 63 PIC X(30) SOURCE WS-STATUS-MESSAGE.

01 COURSE-LOAD-SUMMARY TYPE CONTROL FOOTING FINAL.
02 LINE PLUS 2.
03 COLUMN 21 PIC ZZ,ZZ9 SOURCE COURSE-INPUT-COUNT.
03 COLUMN 29 PIC X(30) VALUE
'Records read from COURSEI'.
02 LINE PLUS 2.
03 COLUMN 21 PIC ZZ,ZZ9 SOURCE COURSE-ERROR-COUNT.
03 COLUMN 29 PIC X(30) VALUE
'Records omitted (with errors)'.
02 LINE PLUS 2.
03 COLUMN 21 PIC ZZ,ZZ9 SOURCE COURSE-OUTPUT-COUNT.
03 COLUMN 29 PIC X(30) VALUE
'Records written to COURSEO'.

```

RD SECTION-LOAD-REPORT
 CONTROL IS FINAL
 PAGE LIMIT IS 66 LINES
 HEADING 2
 FIRST DETAIL 5
 LAST DETAIL 58.

01 SECTION-LOAD-HEADING TYPE PAGE HEADING.

02 LINE 2.

03 COLUMN 01 PIC X(10) SOURCE Y2K-DFMTP-OUTPUT.
 03 COLUMN 15 PIC X(03) VALUE '(N)'.
 03 COLUMN 30 PIC X(05) VALUE 'Royal'.
 03 COLUMN 36 PIC X(06) VALUE 'Valley'.
 03 COLUMN 43 PIC X(10) VALUE 'University'.
 03 COLUMN 73 PIC X(04) VALUE 'Page'.
 03 COLUMN 78 PIC ZZ9 SOURCE PAGE-COUNTER
 OF SECTION-LOAD-REPORT.

02 LINE 3.

03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.
 03 COLUMN 32 PIC X(18) VALUE 'Section Table Load'.

01 SECTION-LOAD-DETAIL TYPE DETAIL.

02 LINE PLUS 1.

03 COLUMN 08 PIC 9(06) SOURCE STR-NUMBER.
 03 COLUMN 15 PIC X(20) SOURCE STR-DESCRIPTION.
 03 COLUMN 36 PIC X(30) SOURCE WS-STATUS-MESSAGE.

01 SECTION-LOAD-SUMMARY TYPE CONTROL FOOTING FINAL.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE SECTION-INPUT-COUNT.
 03 COLUMN 29 PIC X(30) VALUE
 'Records read from DEPTI'.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE SECTION-ERROR-COUNT.
 03 COLUMN 29 PIC X(30) VALUE
 'Records omitted (with errors)'.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE SECTION-OUTPUT-COUNT.
 03 COLUMN 29 PIC X(30) VALUE
 'Records written to DEPTO'.

PROCEDURE DIVISION.

0000-MAIN SECTION.

0000-HOUSEKEEPING.

CALL 'Y2KGETD' USING Y2K-GETD-PARAMETERS.
 MOVE Y2K-GETDP-DATE-G TO Y2K-DFMTP-DATEIN.

RD SECTION-LOAD-REPORT
 CONTROL IS FINAL
 PAGE LIMIT IS 66 LINES
 HEADING 2
 FIRST DETAIL 5
 LAST DETAIL 58.

01 SECTION-LOAD-HEADING TYPE PAGE HEADING.

02 LINE 2.

03 COLUMN 01 PIC X(10) SOURCE Y2K-DFMTP-OUTPUT.
 03 COLUMN 15 PIC X(03) VALUE '(N)'.
 03 COLUMN 30 PIC X(05) VALUE 'Royal'.
 03 COLUMN 36 PIC X(06) VALUE 'Valley'.
 03 COLUMN 43 PIC X(10) VALUE 'University'.
 03 COLUMN 73 PIC X(04) VALUE 'Page'.
 03 COLUMN 78 PIC ZZ9 SOURCE PAGE-COUNTER
 OF SECTION-LOAD-REPORT.

02 LINE 3.

03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.
 03 COLUMN 32 PIC X(18) VALUE 'Section Table Load'.

01 SECTION-LOAD-DETAIL TYPE DETAIL.

02 LINE PLUS 1.

03 COLUMN 08 PIC 9(06) SOURCE STR-NUMBER.
 03 COLUMN 15 PIC X(20) SOURCE STR-DESCRIPTION.
 03 COLUMN 36 PIC X(30) SOURCE WS-STATUS-MESSAGE.

01 SECTION-LOAD-SUMMARY TYPE CONTROL FOOTING FINAL.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE SECTION-INPUT-COUNT.
 03 COLUMN 29 PIC X(30) VALUE
 'Records read from DEPTI'.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE SECTION-ERROR-COUNT.
 03 COLUMN 29 PIC X(30) VALUE
 'Records omitted (with errors)'.

02 LINE PLUS 2.

03 COLUMN 21 PIC ZZ,ZZ9 SOURCE SECTION-OUTPUT-COUNT.
 03 COLUMN 29 PIC X(30) VALUE
 'Records written to DEPTO'.

PROCEDURE DIVISION.

0000-MAIN SECTION.

0000-HOUSEKEEPING.

CALL 'Y2KGETD' USING Y2K-GETD-PARAMETERS.
 MOVE Y2K-GETDP-DATE-G TO Y2K-DFMTP-DATEIN.

load02n - load02v

```
MOVE '1' TO Y2K-DFMTP-MAJOR.  
MOVE '3' TO Y2K-DFMTP-MINOR.  
CALL 'Y2KDFMT' USING Y2K-DFMT-PARAMETERS.
```

```
MOVE '1' TO Y2K-DFMTP-MAJOR.  
MOVE '3' TO Y2K-DFMTP-MINOR.  
CALL 'Y2KDFMT' USING Y2K-DFMT-PARAMETERS.
```

```
OPEN OUTPUT TABLES-FILE,  
REPORT-FILE.
```

```
OPEN OUTPUT REPORT-FILE.
```

```
MOVE 'TABLEO ' TO VSIO-DDNAME.  
MOVE VSIO-RRDS TO VSIO-ORGANIZATION.  
MOVE VSIO-DIRECT TO VSIO-ACCESS.  
MOVE VSIO-OUTPUT TO VSIO-MODE.  
MOVE +57 TO VSIO-RECORD-LENGTH.  
MOVE VSIO-OPEN TO VSIO-COMMAND.  
CALL 'VSAMIO' USING VSIO-PARAMETER-BLOCK, TABLEO,  
TABLES-RECORD.
```

```
IF NOT VSIO-SUCCESS  
  DISPLAY 'VSAMIO ERROR OCCURRED DURING '  
    VSIO-COMMAND  
  EXHIBIT NAMED VSIO-RETURN-CODE,  
  EXHIBIT NAMED VSIO-VSAM-RETURN-CODE,  
    VSIO-VSAM-FUNCTION-CODE,  
    VSIO-VSAM-FEEDBACK-CODE  
  MOVE +12 TO RETURN-CODE  
  STOP RUN.
```

0100-LOAD-DEPARTMENT-TABLE.

```
OPEN INPUT DEPARTMENT-DATA-FILE.
```

```
INITIATE DEPT-LOAD-REPORT.  
PERFORM 1100-READ-DEPT-DATA
```

```
UNTIL DEPARTMENT-DATA-FILE-EOF.  
TERMINATE DEPT-LOAD-REPORT.
```

```
CLOSE DEPARTMENT-DATA-FILE.
```

0200-LOAD-COURSE-TABLE.

```
OPEN INPUT COURSE-DATA-FILE.
```

```
INITIATE COURSE-LOAD-REPORT.  
PERFORM 1200-READ-COURSE-DATA
```

```
UNTIL COURSE-DATA-FILE-EOF.  
TERMINATE COURSE-LOAD-REPORT.
```

```
CLOSE COURSE-DATA-FILE.
```

0300-LOAD-SECTION-TABLE.

0100-LOAD-DEPARTMENT-TABLE.

```
OPEN INPUT DEPARTMENT-DATA-FILE.
```

```
INITIATE DEPT-LOAD-REPORT.  
PERFORM 1100-READ-DEPT-DATA
```

```
THRU 1199-EXIT
```

```
UNTIL DEPARTMENT-DATA-FILE-EOF.  
TERMINATE DEPT-LOAD-REPORT.
```

```
CLOSE DEPARTMENT-DATA-FILE.
```

0200-LOAD-COURSE-TABLE.

```
OPEN INPUT COURSE-DATA-FILE.
```

```
INITIATE COURSE-LOAD-REPORT.  
PERFORM 1200-READ-COURSE-DATA
```

```
THRU 1299-EXIT
```

```
UNTIL COURSE-DATA-FILE-EOF.  
TERMINATE COURSE-LOAD-REPORT.
```

```
CLOSE COURSE-DATA-FILE.
```

0300-LOAD-SECTION-TABLE.

OPEN INPUT SECTION-DATA-FILE.

INITIATE SECTION-LOAD-REPORT.
PERFORM 1300-READ-SECTION-DATA

UNTIL SECTION-DATA-FILE-EOF.
TERMINATE SECTION-LOAD-REPORT.

CLOSE SECTION-DATA-FILE.

0400-FINISH.

CLOSE TABLES-FILE,
REPORT-FILE.

GOBACK.

1000-LEVEL-1-ROUTINES SECTION.

1100-READ-DEPT-DATA.

READ DEPARTMENT-DATA-FILE
AT END
MOVE 'Y' TO DEPARTMENT-DATA-FILE-EOF-SW.

IF NOT DEPARTMENT-DATA-FILE-EOF
PERFORM 2100-PROCESS-DEPARTMENT.

1200-READ-COURSE-DATA.

READ COURSE-DATA-FILE
AT END

OPEN INPUT SECTION-DATA-FILE.

INITIATE SECTION-LOAD-REPORT.
PERFORM 1300-READ-SECTION-DATA

THRU 1399-EXIT

UNTIL SECTION-DATA-FILE-EOF.
TERMINATE SECTION-LOAD-REPORT.

CLOSE SECTION-DATA-FILE.

0400-FINISH.

MOVE VSIO-CLOSE TO VSIO-COMMAND.
CALL 'VSAMIO' USING VSIO-PARAMETER-BLOCK, TABLEO,
DEPARTMENT-TABLE-RECORD.

IF NOT VSIO-SUCCESS
DISPLAY 'VSAMIO ERROR OCCURRED DURING '
VSIO-COMMAND
EXHIBIT NAMED VSIO-RETURN-CODE,
EXHIBIT NAMED VSIO-VSAM-RETURN-CODE,
VSIO-VSAM-FUNCTION-CODE,
VSIO-VSAM-FEEDBACK-CODE
MOVE +12 TO RETURN-CODE
STOP RUN.

CLOSE REPORT-FILE.

GOBACK.

1000-LEVEL-1-ROUTINES SECTION.

1100-READ-DEPT-DATA.

READ DEPARTMENT-DATA-FILE
AT END
MOVE 'Y' TO DEPARTMENT-DATA-FILE-EOF-SW.

IF NOT DEPARTMENT-DATA-FILE-EOF
PERFORM 2100-PROCESS-DEPARTMENT
THRU 2199-EXIT.

1199-EXIT.
EXIT.

1200-READ-COURSE-DATA.

READ COURSE-DATA-FILE
AT END

MOVE 'Y' TO COURSE-DATA-FILE-EOF-SW.

MOVE 'Y' TO COURSE-DATA-FILE-EOF-SW.

IF NOT COURSE-DATA-FILE-EOF

IF NOT COURSE-DATA-FILE-EOF

PERFORM 2200-PROCESS-COURSE.

PERFORM 2200-PROCESS-COURSE

THRU 2299-EXIT.

1299-EXIT.

EXIT.

1300-READ-SECTION-DATA.

1300-READ-SECTION-DATA.

READ SECTION-DATA-FILE

AT END

MOVE 'Y' TO SECTION-DATA-FILE-EOF-SW.

READ SECTION-DATA-FILE

AT END

MOVE 'Y' TO SECTION-DATA-FILE-EOF-SW.

IF NOT SECTION-DATA-FILE-EOF

IF NOT SECTION-DATA-FILE-EOF

PERFORM 2300-PROCESS-SECTION.

PERFORM 2300-PROCESS-SECTION

THRU 2399-EXIT.

1399-EXIT.

EXIT.

2000-LEVEL-2-ROUTINES SECTION.

2000-LEVEL-2-ROUTINES SECTION.

2100-PROCESS-DEPARTMENT.

2100-PROCESS-DEPARTMENT.

ADD 1 TO DEPT-INPUT-COUNT.

ADD 1 TO DEPT-INPUT-COUNT.

PERFORM 3100-DEPT-SEQUENCE-TESTS.

PERFORM 3100-DEPT-SEQUENCE-TESTS

THRU 3199-EXIT.

IF OUT-OF-SEQUENCE

MOVE 'Department number sequence error'

TO WS-STATUS-MESSAGE

ADD 1 TO DEPT-ERROR-COUNT.

IF OUT-OF-SEQUENCE

MOVE 'Department number sequence error'

TO WS-STATUS-MESSAGE

ADD 1 TO DEPT-ERROR-COUNT.

IF DUPLICATE-KEY

MOVE 'Department number duplicated'

TO WS-STATUS-MESSAGE

ADD 1 TO DEPT-ERROR-COUNT.

IF DUPLICATE-KEY

MOVE 'Department number duplicated'

TO WS-STATUS-MESSAGE

ADD 1 TO DEPT-ERROR-COUNT.

IF NO-SEQUENCE-ERROR

IF NO-SEQUENCE-ERROR

PERFORM 3400-ADD-DEPARTMENT.

PERFORM 3400-ADD-DEPARTMENT

THRU 3499-EXIT.

GENERATE DEPT-LOAD-DETAIL.

GENERATE DEPT-LOAD-DETAIL.

2199-EXIT.

EXIT.

2200-PROCESS-COURSE.

ADD 1 TO COURSE-INPUT-COUNT.

PERFORM 3200-COURSE-SEQUENCE-TESTS.

IF OUT-OF-SEQUENCE

MOVE 'Department number sequence error'

TO WS-STATUS-MESSAGE

ADD 1 TO COURSE-ERROR-COUNT.

IF DUPLICATE-KEY

MOVE 'Department number duplicated'

TO WS-STATUS-MESSAGE

ADD 1 TO COURSE-ERROR-COUNT.

IF NO-SEQUENCE-ERROR

PERFORM 3500-ADD-COURSE.

GENERATE COURSE-LOAD-DETAIL.

2300-PROCESS-SECTION.

ADD 1 TO SECTION-INPUT-COUNT.

PERFORM 3300-SECTION-SEQUENCE-TESTS.

IF OUT-OF-SEQUENCE

MOVE 'Department number sequence error'

TO WS-STATUS-MESSAGE

ADD 1 TO SECTION-ERROR-COUNT.

IF DUPLICATE-KEY

MOVE 'Department number duplicated'

TO WS-STATUS-MESSAGE

ADD 1 TO SECTION-ERROR-COUNT.

IF NO-SEQUENCE-ERROR

PERFORM 3600-ADD-SECTION.

GENERATE SECTION-LOAD-DETAIL.

2200-PROCESS-COURSE.

ADD 1 TO COURSE-INPUT-COUNT.

PERFORM 3200-COURSE-SEQUENCE-TESTS
THRU 3299-EXIT.

IF OUT-OF-SEQUENCE

MOVE 'Department number sequence error'

TO WS-STATUS-MESSAGE

ADD 1 TO COURSE-ERROR-COUNT.

IF DUPLICATE-KEY

MOVE 'Department number duplicated'

TO WS-STATUS-MESSAGE

ADD 1 TO COURSE-ERROR-COUNT.

IF NO-SEQUENCE-ERROR

PERFORM 3500-ADD-COURSE
THRU 3599-EXIT.

GENERATE COURSE-LOAD-DETAIL.

2299-EXIT.
EXIT.

2300-PROCESS-SECTION.

ADD 1 TO SECTION-INPUT-COUNT.

PERFORM 3300-SECTION-SEQUENCE-TESTS
THRU 3399-EXIT.

IF OUT-OF-SEQUENCE

MOVE 'Department number sequence error'

TO WS-STATUS-MESSAGE

ADD 1 TO SECTION-ERROR-COUNT.

IF DUPLICATE-KEY

MOVE 'Department number duplicated'

TO WS-STATUS-MESSAGE

ADD 1 TO SECTION-ERROR-COUNT.

IF NO-SEQUENCE-ERROR

PERFORM 3600-ADD-SECTION
THRU 3699-EXIT.

GENERATE SECTION-LOAD-DETAIL.

3000-LEVEL-3-ROUTINES SECTION.

3100-DEPT-SEQUENCE-TESTS.

MOVE 0 TO KEY-SEQUENCE-ERROR-SW.

IF DDR-NUMBER NOT > PRIOR-DEPT-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

IF DDR-NUMBER = PRIOR-DEPT-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

MOVE DDR-NUMBER TO PRIOR-DEPT-VALUE.

2399-EXIT.
EXIT.

3000-LEVEL-3-ROUTINES SECTION.

3100-DEPT-SEQUENCE-TESTS.

MOVE 0 TO KEY-SEQUENCE-ERROR-SW.

IF DDR-NUMBER NOT > PRIOR-DEPT-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

IF DDR-NUMBER = PRIOR-DEPT-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

MOVE DDR-NUMBER TO PRIOR-DEPT-VALUE.

3199-EXIT.
EXIT.

3200-COURSE-SEQUENCE-TESTS.

MOVE 0 TO KEY-SEQUENCE-ERROR-SW.

IF CDR-NUMBER NOT > PRIOR-COURSE-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

IF CDR-NUMBER = PRIOR-COURSE-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

MOVE CDR-NUMBER TO PRIOR-COURSE-VALUE.

3200-COURSE-SEQUENCE-TESTS.

MOVE 0 TO KEY-SEQUENCE-ERROR-SW.

IF CDR-NUMBER NOT > PRIOR-COURSE-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

IF CDR-NUMBER = PRIOR-COURSE-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

MOVE CDR-NUMBER TO PRIOR-COURSE-VALUE.

3299-EXIT.
EXIT.

3300-SECTION-SEQUENCE-TESTS.

MOVE 0 TO KEY-SEQUENCE-ERROR-SW.

IF SDR-NUMBER NOT > PRIOR-SECTION-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

IF SDR-NUMBER = PRIOR-SECTION-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

MOVE CDR-NUMBER TO PRIOR-COURSE-VALUE.

3300-SECTION-SEQUENCE-TESTS.

MOVE 0 TO KEY-SEQUENCE-ERROR-SW.

IF SDR-NUMBER NOT > PRIOR-SECTION-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

IF SDR-NUMBER = PRIOR-SECTION-VALUE
ADD 01 TO KEY-SEQUENCE-ERROR-SW.

MOVE CDR-NUMBER TO PRIOR-COURSE-VALUE.

3399-EXIT.

3400-ADD-DEPARTMENT.

MOVE LOW-VALUES TO DEPARTMENT-TABLE-RECORD.

MOVE ZEROS TO DTR-KEY.

MOVE DDR-NUMBER TO DTR-NUMBER.

MOVE DDR-NAME TO DTR-NAME.

MOVE DTR-KEY TO TABLEO-RELATIVE-KEY.

WRITE DEPARTMENT-TABLE-RECORD

INVALID KEY

MOVE 'Invalid key on write'

TO WS-STATUS-MESSAGE

ADD 1 TO DEPT-ERROR-COUNT.

IF TABLEO-STATUS = '00'

ADD 1 TO DEPT-OUTPUT-COUNT.

MOVE 'Record added'

TO WS-STATUS-MESSAGE.

EXIT.

3400-ADD-DEPARTMENT.

MOVE LOW-VALUES TO TABLES-RECORD.

MOVE ZEROS TO DTR-KEY.

MOVE DDR-NUMBER TO DTR-NUMBER.

MOVE DDR-NAME TO DTR-NAME.

MOVE DTR-KEY TO VSIO-RELATIVE-RECORD.

MOVE VSIO-WRITE TO VSIO-COMMAND.

CALL 'VSAMIO' USING VSIO-PARAMETER-BLOCK, TABLEO,
TABLES-RECORD.

IF VSIO-SUCCESS

ADD 1 TO DEPT-OUTPUT-COUNT

MOVE 'Record added'

TO WS-STATUS-MESSAGE

ELSE

IF VSIO-NO-MORE-SPACE

ADD 1 TO DEPT-ERROR-COUNT

MOVE 'No more space in cluster'

TO WS-STATUS-MESSAGE

ELSE

DISPLAY 'VSAMIO ERROR OCCURRED DURING '
VSIO-COMMAND

EXHIBIT NAMED VSIO-RETURN-CODE,

EXHIBIT NAMED VSIO-VSAM-RETURN-CODE,

VSIO-VSAM-FUNCTION-CODE,

VSIO-VSAM-FEEDBACK-CODE

MOVE +12 TO RETURN-CODE

STOP RUN.

3499-EXIT.

EXIT.

3500-ADD-COURSE.

MOVE LOW-VALUES TO COURSE-TABLE-RECORD.

MOVE ZEROS TO CTR-KEY.

MOVE CDR-NUMBER TO CTR-NUMBER.

MOVE CDR-NAME TO CTR-NAME.

MOVE CDR-HOURS TO CTR-HOURS.

MOVE CTR-KEY TO TABLEO-RELATIVE-KEY.

WRITE COURSE-TABLE-RECORD

INVALID KEY

3500-ADD-COURSE.

MOVE LOW-VALUES TO TABLES-RECORD.

MOVE ZEROS TO CTR-KEY.

MOVE CDR-NUMBER TO CTR-NUMBER.

MOVE CDR-NAME TO CTR-NAME.

MOVE CDR-HOURS TO CTR-HOURS.

MOVE CTR-KEY TO VSIO-RELATIVE-RECORD.

MOVE VSIO-WRITE TO VSIO-COMMAND.

CALL 'VSAMIO' USING VSIO-PARAMETER-BLOCK, TABLEO,

MOVE 'Invalid key on write' TO WS-STATUS-MESSAGE ADD 1 TO COURSE-ERROR-COUNT.	TABLES-RECORD.
IF TABLE0-STATUS = '00' ADD 1 TO COURSE-OUTPUT-COUNT. MOVE 'Record added' TO WS-STATUS-MESSAGE.	IF VSIO-SUCCESS ADD 1 TO COURSE-OUTPUT-COUNT MOVE 'Record added' TO WS-STATUS-MESSAGE ELSE IF VSIO-NO-MORE-SPACE ADD 1 TO COURSE-ERROR-COUNT MOVE 'No more space in cluster' TO WS-STATUS-MESSAGE ELSE DISPLAY 'VSAMIO ERROR OCCURRED DURING ' VSIO-COMMAND EXHIBIT NAMED VSIO-RETURN-CODE, EXHIBIT NAMED VSIO-VSAM-RETURN-CODE, VSIO-VSAM-FUNCTION-CODE, VSIO-VSAM-FEEDBACK-CODE MOVE +12 TO RETURN-CODE STOP RUN. 3599-EXIT. EXIT.

3600-ADD-SECTION.

MOVE LOW-VALUES TO COURSE-TABLE-RECORD. MOVE ZEROS TO STR-KEY. MOVE SDR-NUMBER TO STR-NUMBER. MOVE SDR-DESCRIPTION TO STR-DESCRIPTION. MOVE STR-KEY TO TABLE0-RELATIVE-KEY.	MOVE LOW-VALUES TO TABLES-RECORD. MOVE SDR-NUMBER TO STR-KEY. MOVE SDR-DESCRIPTION TO STR-DESCRIPTION. MOVE STR-KEY TO VSIO-RELATIVE-RECORD. MOVE VSIO-WRITE TO VSIO-COMMAND. CALL 'VSAMIO' USING VSIO-PARAMETER-BLOCK, TABLE0, TABLES-RECORD.
WRITE SECTION-TABLE-RECORD INVALID KEY MOVE 'Invalid key on write' TO WS-STATUS-MESSAGE ADD 1 TO SECTION-ERROR-COUNT.	
IF TABLE0-STATUS = '00' ADD 1 TO SECTION-OUTPUT-COUNT. MOVE 'Record added' TO WS-STATUS-MESSAGE.	IF VSIO-SUCCESS ADD 1 TO SECTION-OUTPUT-COUNT MOVE 'Record added' TO WS-STATUS-MESSAGE ELSE IF VSIO-NO-MORE-SPACE ADD 1 TO SECTION-ERROR-COUNT MOVE 'No more space in cluster' TO WS-STATUS-MESSAGE

load02n - load02v

```
ELSE
  DISPLAY 'VSAMIO ERROR OCCURRED DURING '
    VSIO-COMMAND
  EXHIBIT NAMED VSIO-RETURN-CODE,
  EXHIBIT NAMED VSIO-VSAM-RETURN-CODE,
    VSIO-VSAM-FUNCTION-CODE,
    VSIO-VSAM-FEEDBACK-CODE
  MOVE +12 TO RETURN-CODE
  STOP RUN.
```

```
3699-EXIT.
EXIT.
```