

IDENTIFICATION DIVISION.

PROGRAM-ID. READ01N.

DATE-WRITTEN. JULY, 2025.

DATE-COMPILED.

REMARKS. READ VSAM KSDS CLUSTER VIA PRIMARY AND ALTERNATE KEY,
PRODUCE REPORT BASED UPON EXEC TIME PARAMETER.

ENVIRONMENT DIVISION.

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT STUDENT-MASTER-FILE

ASSIGN TO STMASTI

ORGANIZATION IS INDEXED

ACCESS IS SEQUENTIAL

RECORD KEY IS SMR-STUDENT-NUMBER

ALTERNATE RECORD KEY IS SMR-SORT-NAME WITH DUPLICATES

FILE STATUS IS STMASTI-STATUS.

SELECT REPORT-FILE

ASSIGN TO S-REPORT.

DATA DIVISION.

FILE SECTION.

FD STUDENT-MASTER-FILE

RECORD CONTAINS 150 CHARACTERS

DATA RECORD IS STUDENT-MASTER-RECORD.

01 STUDENT-MASTER-RECORD.

02 SMR-STUDENT-NUMBER PIC X(09).

02 FILLER PIC X(109).

02 SMR-SORT-NAME PIC X(30).

02 FILLER PIC X(02).

FD REPORT-FILE

LABEL RECORDS STANDARD

REPORTS ARE NUMBER-REPORT, NAME-REPORT.

WORKING-STORAGE SECTION.

01 STUDENT-MASTER-EOF-SW PIC X VALUE 'N'.

88 STUDENT-MASTER-EOF VALUE 'Y'.

88 STUDENT-MASTER-NOT-EOF VALUE 'N'.

01 STMASTI-STATUS PIC X(02).

01 Y2K-GETD-PARAMETERS.

02 Y2K-GETDP-DATE-G PIC 9(8).

IDENTIFICATION DIVISION.

PROGRAM-ID. READ01V.

DATE-WRITTEN. JULY, 2025.

DATE-COMPILED.

REMARKS. READ VSAM KSDS CLUSTER VIA PRIMARY AND ALTERNATE KEY,
PRODUCE REPORT BASED UPON EXEC TIME PARAMETER.

ENVIRONMENT DIVISION.

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT REPORT-FILE

ASSIGN TO UR-S-REPORT.

DATA DIVISION.

FILE SECTION.

FD REPORT-FILE

LABEL RECORDS OMITTED

REPORTS ARE NUMBER-REPORT, NAME-REPORT.

WORKING-STORAGE SECTION.

01 STUDENT-MASTER-EOF-SW PIC X VALUE 'N'.

88 STUDENT-MASTER-EOF VALUE 'Y'.

88 STUDENT-MASTER-NOT-EOF VALUE 'N'.

01 Y2K-GETD-PARAMETERS.

02 Y2K-GETDP-DATE-G PIC 9(8).

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02 Y2K-GETDP-DATE-J PIC 9(7).
02 Y2K-GETDP-ANUM PIC S9(7).
02 Y2K-GETDP-CLOCK PIC 9(8).
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 INPUT-COUNT PIC 9(5) VALUE 0.

COPY 'STMASTER'.

LINKAGE SECTION.

01 EXEC-PARM-BUFFER.
02 EXEC-PARM-LENGTH PIC S9(04) COMP.
02 EXEC-PARM-DATA PIC X(06).
88 REQUESTED-NUMBER VALUE 'NUMBER'.
02 FILLER REDEFINES EXEC-PARM-DATA.
03 EXEC-PARM-DATA-4 PIC X(04).
88 REQUESTED-NAME VALUE 'NAME'.
03 FILLER PIC X(02).

REPORT SECTION.

RD NUMBER-REPORT
CONTROL IS FINAL
PAGE LIMIT IS 66 LINES
HEADING 2
FIRST DETAIL 5
LAST DETAIL 60.

01 NUMBER-PAGE-HEAD 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 22 PIC X(07) VALUE 'Student'.
03 COLUMN 32 PIC X(06) VALUE 'Master'.
03 COLUMN 41 PIC X(04) VALUE 'List'.
03 COLUMN 48 PIC X(02) VALUE 'By'.
03 COLUMN 53 PIC X(06) VALUE 'Number'.
03 COLUMN 71 PIC X(04) VALUE 'Page'.
03 COLUMN 76 PIC Z,ZZ9 SOURCE PAGE-COUNTER

02 Y2K-GETDP-DATE-J PIC 9(7).
02 Y2K-GETDP-ANUM PIC S9(7).
02 Y2K-GETDP-CLOCK PIC 9(8).
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 INPUT-COUNT PIC 9(5) VALUE 0.

01 VSIO-PARAMETER-VALUES COPY VSAMIO.
01 KSDSF01 COPY VSAMIOFB.
01 STUDENT-MASTER-INFORMATION COPY 'STMASTER'.

LINKAGE SECTION.

01 EXEC-PARM-BUFFER.
02 EXEC-PARM-LENGTH PIC S9(04) COMP.
02 EXEC-PARM-DATA PIC X(06).
88 REQUESTED-NUMBER VALUE 'NUMBER'.
02 FILLER REDEFINES EXEC-PARM-DATA.
03 EXEC-PARM-DATA-4 PIC X(04).
88 REQUESTED-NAME VALUE 'NAME'.
03 FILLER PIC X(02).

REPORT SECTION.

RD NUMBER-REPORT
CONTROL IS FINAL
PAGE LIMIT IS 66 LINES
HEADING 2
FIRST DETAIL 5
LAST DETAIL 60.

01 NUMBER-PAGE-HEAD 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 22 PIC X(07) VALUE 'Student'.
03 COLUMN 32 PIC X(06) VALUE 'Master'.
03 COLUMN 41 PIC X(04) VALUE 'List'.
03 COLUMN 48 PIC X(02) VALUE 'By'.
03 COLUMN 53 PIC X(06) VALUE 'Number'.
03 COLUMN 71 PIC X(04) VALUE 'Page'.
03 COLUMN 76 PIC Z,ZZ9 SOURCE PAGE-COUNTER

OF NUMBER-REPORT.

```

02 LINE 3.
03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.

01 NUMBER-DETAIL TYPE DETAIL.
02 LINE PLUS 1.
03 COLUMN 15 PIC 9(09) SOURCE SI-STUDENT-NUMBER.
03 COLUMN 26 PIC X(11) SOURCE SI-FIRST-NAME.
03 COLUMN 39 PIC X(01) SOURCE SI-MINITIAL.
03 COLUMN 41 PIC X(10) SOURCE SI-LAST-NAME.

02 LINE PLUS 1.

01 NUMBER-SUMMARY TYPE CONTROL FOOTING FINAL.
02 LINE PLUS 2.
03 COLUMN 20 PIC X(03) VALUE '***'.
03 COLUMN 24 PIC ZZ,ZZ9 SOURCE INPUT-COUNT.
03 COLUMN 31 PIC X(15) VALUE 'Students ***'.

RD NAME-REPORT
CONTROL IS FINAL
PAGE LIMIT IS 66 LINES
HEADING 2
FIRST DETAIL 5
LAST DETAIL 60.

01 NAME-PAGE-HEAD 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 24 PIC X(07) VALUE 'Student'.
03 COLUMN 34 PIC X(06) VALUE 'Master'.
03 COLUMN 43 PIC X(04) VALUE 'List'.
03 COLUMN 50 PIC X(02) VALUE 'By'.
03 COLUMN 55 PIC X(04) VALUE 'Name'.
03 COLUMN 71 PIC X(04) VALUE 'Page'.
03 COLUMN 76 PIC Z,ZZ9 SOURCE PAGE-COUNTER
OF NAME-REPORT.

02 LINE 3.
03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.

01 NAME-DETAIL TYPE DETAIL.
02 LINE PLUS 1.
03 COLUMN 15 PIC X(10) SOURCE SI-LAST-NAME.
03 COLUMN 26 PIC X(11) SOURCE SI-FIRST-NAME.
03 COLUMN 38 PIC X(01) SOURCE SI-MINITIAL.
03 COLUMN 42 PIC 9(09) SOURCE SI-STUDENT-NUMBER.

02 LINE PLUS 1.

```

OF NUMBER-REPORT.

```

02 LINE 3.
03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.

01 NUMBER-DETAIL TYPE DETAIL.
02 LINE PLUS 1.
03 COLUMN 15 PIC 9(09) SOURCE SI-STUDENT-NUMBER.
03 COLUMN 26 PIC X(11) SOURCE SI-FIRST-NAME.
03 COLUMN 39 PIC X(01) SOURCE SI-MINITIAL.
03 COLUMN 41 PIC X(10) SOURCE SI-LAST-NAME.

02 LINE PLUS 1.

01 NUMBER-SUMMARY TYPE CONTROL FOOTING FINAL.
02 LINE PLUS 2.
03 COLUMN 20 PIC X(03) VALUE '***'.
03 COLUMN 24 PIC ZZ,ZZ9 SOURCE INPUT-COUNT.
03 COLUMN 31 PIC X(15) VALUE 'Students ***'.

RD NAME-REPORT
CONTROL IS FINAL
PAGE LIMIT IS 66 LINES
HEADING 2
FIRST DETAIL 5
LAST DETAIL 60.

01 NAME-PAGE-HEAD 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 24 PIC X(07) VALUE 'Student'.
03 COLUMN 34 PIC X(06) VALUE 'Master'.
03 COLUMN 43 PIC X(04) VALUE 'List'.
03 COLUMN 50 PIC X(02) VALUE 'By'.
03 COLUMN 55 PIC X(04) VALUE 'Name'.
03 COLUMN 71 PIC X(04) VALUE 'Page'.
03 COLUMN 76 PIC Z,ZZ9 SOURCE PAGE-COUNTER
OF NAME-REPORT.

02 LINE 3.
03 COLUMN 01 PIC X(11) SOURCE Y2K-GETDP-CLOCK12.

01 NAME-DETAIL TYPE DETAIL.
02 LINE PLUS 1.
03 COLUMN 15 PIC X(10) SOURCE SI-LAST-NAME.
03 COLUMN 26 PIC X(11) SOURCE SI-FIRST-NAME.
03 COLUMN 38 PIC X(01) SOURCE SI-MINITIAL.
03 COLUMN 42 PIC 9(09) SOURCE SI-STUDENT-NUMBER.

02 LINE PLUS 1.

```

```

01 NAME-SUMMARY TYPE CONTROL FOOTING FINAL.
02 LINE PLUS 2.
03 COLUMN 20 PIC X(03) VALUE '***'.
03 COLUMN 24 PIC ZZ,ZZ9 SOURCE INPUT-COUNT.
03 COLUMN 31 PIC X(15) VALUE 'Students ***'.

```

PROCEDURE DIVISION USING EXEC-PARM-BUFFER.

0000-MAIN SECTION.

0000-INITIALIZATION.

```

CALL 'Y2KGETD' USING Y2K-GETD-PARAMETERS.
MOVE Y2K-GETDP-DATE-G TO Y2K-DFMTP-DATEIN.
MOVE '1' TO Y2K-DFMTP-MAJOR.
MOVE '3' TO Y2K-DFMTP-MINOR.
CALL 'Y2KDFMT' USING Y2K-DFMT-PARAMETERS.

```

```

IF EXEC-PARM-LENGTH = 4
OR EXEC-PARM-LENGTH = 6
  IF REQUESTED-NUMBER
  OR REQUESTED-NAME
    PERFORM 1100-PRODUCE-REPORT

```

ELSE

```

  DISPLAY '*** EXEC PARM LENGTH=' EXEC-PARM-LENGTH
  ' ***'

```

```

  DISPLAY '*** EXEC PARM=' EXEC-PARM-DATA '= ***'
  MOVE +12 TO RETURN-CODE

```

ELSE

```

  DISPLAY '*** EXEC PARM LENGTH=' EXEC-PARM-LENGTH ' ***'
  DISPLAY '*** EXEC PARM=' EXEC-PARM-DATA '= ***'
  UPON SYSOUT
  MOVE +12 TO RETURN-CODE.

```

GOBACK.

1000-LEVEL-1-ROUTINES SECTION.

1100-PRODUCE-REPORT.

```

OPEN INPUT STUDENT-MASTER-FILE
      OUTPUT REPORT-FILE.

```

```

01 NAME-SUMMARY TYPE CONTROL FOOTING FINAL.
02 LINE PLUS 2.
03 COLUMN 20 PIC X(03) VALUE '***'.
03 COLUMN 24 PIC ZZ,ZZ9 SOURCE INPUT-COUNT.
03 COLUMN 31 PIC X(15) VALUE 'Students ***'.

```

PROCEDURE DIVISION USING EXEC-PARM-BUFFER.

0000-MAIN SECTION.

0000-INITIALIZATION.

```

CALL 'Y2KGETD' USING Y2K-GETD-PARAMETERS.
MOVE Y2K-GETDP-DATE-G TO Y2K-DFMTP-DATEIN.
MOVE '1' TO Y2K-DFMTP-MAJOR.
MOVE '3' TO Y2K-DFMTP-MINOR.
CALL 'Y2KDFMT' USING Y2K-DFMT-PARAMETERS.

```

```

IF EXEC-PARM-LENGTH = 4
OR EXEC-PARM-LENGTH = 6
  IF REQUESTED-NUMBER
  OR REQUESTED-NAME
    PERFORM 1100-PRODUCE-REPORT

```

THRU 1199-EXIT

ELSE

```

  DISPLAY '*** EXEC PARM LENGTH=' EXEC-PARM-LENGTH
  ' ***'

```

```

  DISPLAY '*** EXEC PARM=' EXEC-PARM-DATA '= ***'
  MOVE +12 TO RETURN-CODE

```

ELSE

```

  DISPLAY '*** EXEC PARM LENGTH=' EXEC-PARM-LENGTH ' ***'
  DISPLAY '*** EXEC PARM=' EXEC-PARM-DATA '= ***'
  UPON SYSOUT
  MOVE +12 TO RETURN-CODE.

```

GOBACK.

1000-LEVEL-1-ROUTINES SECTION.

1100-PRODUCE-REPORT.

```

MOVE VSIO-KSDS TO VSIO-ORGANIZATION.
MOVE VSIO-SEQUENTIAL TO VSIO-ACCESS.
MOVE VSIO-INPUT TO VSIO-MODE.
MOVE +150 TO VSIO-RECORD-LENGTH.
MOVE VSIO-OPEN TO VSIO-COMMAND.
IF REQUESTED-NUMBER
  MOVE 'STMASTI' TO VSIO-DDNAME

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```
MOVE +0 TO VSIO-KEY-POSITION
MOVE +9 TO VSIO-KEY-LENGTH
ELSE
MOVE 'STMASTI1' TO VSIO-DDNAME
MOVE +118 TO VSIO-KEY-POSITION
MOVE +30 TO VSIO-KEY-LENGTH.
CALL 'VSAMIO' USING VSIO-PARAMETER-BLOCK, KSDSF01,
STUDENT-MASTER-INFORMATION.
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.
```

OPEN OUTPUT REPORT-FILE.

```
IF REQUESTED-NUMBER
INITIATE NUMBER-REPORT
MOVE LOW-VALUES TO SMR-STUDENT-NUMBER
START STUDENT-MASTER-FILE
KEY IS NOT LESS THAN SMR-STUDENT-NUMBER
```

```
ELSE
INITIATE NAME-REPORT
MOVE LOW-VALUES TO SMR-STUDENT-NUMBER
START STUDENT-MASTER-FILE
KEY IS NOT LESS THAN SMR-SORT-NAME.
```

PERFORM 2100-READ-STUDENT-MASTER

UNTIL STUDENT-MASTER-EOF.

```
IF REQUESTED-NUMBER
TERMINATE NUMBER-REPORT
ELSE
```

```
IF REQUESTED-NUMBER
INITIATE NUMBER-REPORT
MOVE ZERO TO SI-STUDENT-NUMBER
```

```
ELSE
INITIATE NAME-REPORT
MOVE LOW-VALUES TO SI-SORT-NAME.
```

```
MOVE VSIO-START-KEY-NOTLESS TO VSIO-COMMAND.
CALL 'VSAMIO' USING VSIO-PARAMETER-BLOCK, KSDSF01,
STUDENT-MASTER-INFORMATION
```

```
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.
```

PERFORM 2100-READ-STUDENT-MASTER

THRU 2199-EXIT

UNTIL STUDENT-MASTER-EOF.

```
IF REQUESTED-NUMBER
TERMINATE NUMBER-REPORT
ELSE
```

TERMINATE NAME-REPORT.

CLOSE STUDENT-MASTER-FILE,
REPORT-FILE.

TERMINATE NAME-REPORT.

MOVE VSIO-CLOSE TO VSIO-COMMAND.

CALL 'VSAMIO' USING VSIO-PARAMETER-BLOCK, KSDSF01,
STUDENT-MASTER-INFORMATION.

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.

CLOSE REPORT-FILE.

1199-EXIT.

EXIT.

2000-LEVEL-2-ROUTINES SECTION.

2000-LEVEL-2-ROUTINES SECTION.

2100-READ-STUDENT-MASTER.

2100-READ-STUDENT-MASTER.

READ STUDENT-MASTER-FILE NEXT RECORD

INTO SI-MASTER-RECORD

AT END MOVE 'Y' TO STUDENT-MASTER-EOF-SW.

MOVE VSIO-READ TO VSIO-COMMAND.

CALL 'VSAMIO' USING VSIO-PARAMETER-BLOCK, KSDSF01,
STUDENT-MASTER-INFORMATION.

IF NOT VSIO-SUCCESS

IF VSIO-END-OF-FILE

MOVE 'Y' TO STUDENT-MASTER-EOF-SW

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

MOVE 'Y' TO STUDENT-MASTER-EOF-SW.

IF STUDENT-MASTER-NOT-EOF

ADD 1 TO INPUT-COUNT

IF REQUESTED-NUMBER

GENERATE NUMBER-DETAIL

ELSE

GENERATE NAME-DETAIL.

IF STUDENT-MASTER-NOT-EOF

ADD 1 TO INPUT-COUNT

IF REQUESTED-NUMBER

GENERATE NUMBER-DETAIL

ELSE

GENERATE NAME-DETAIL.

2199-EXIT.

EXIT.