

D\_  
PROGRAMME  
LISTINGS

DISS  
868  
COM

IDENTIFICATION DIVISION.  
PROGRAM-ID. MAIN-PROG.  
AUTHOR. MUHAMMAD SHAHID.

\*  
\* This program displays different menus systematically  
\* so that the desired procedure should be selected  
\* and accordingly load the corresponding routine.  
\*

ENVIRONMENT DIVISION.  
CONFIGURATION SECTION.  
SOURCE-COMPUTER. TENDY-1200.  
OBJECT-COMPUTER. TENDY-1200.  
INPUT-OUTPUT SECTION.  
FILE-CONTROL.

SELECT T-FILE ASSIGN TO RANDOM "TFILE"  
ORGANIZATION IS INDEXED  
ACCESS IS DYNAMIC  
RECORD KEY IS T-KEY.

DATA DIVISION.

FILE SECTION.

FD T-FILE LABEL RECORDS ARE STANDARD.  
01 T-REC.  
05 T-KEY PIC X.  
05 F-INDC PIC 9.  
05 F-NAME PIC X(20).  
05 C-STATUS PIC 9.  
05 R-STATUS PIC 9.

WORKING-STORAGE SECTION.

\*  
\* P-SWITCH and F-NAM carry file number and file name respectively  
\* to the called program  
\*

77 T-KEE PIC 9.  
77 E-O-LOOP PIC 9.  
77 P-WORD PIC X(10).  
77 F-NAM PIC X(20).  
77 LINE-NO PIC 99 VALUE 5.  
77 SUB-NAME PIC X(8).  
77 WASH PIC X(70) VALUE SPACES.  
01 CHK1 PIC 9.

01 CHK2 REDEFINES CHK1 PIC X.

01 P-SWITCH PIC 9.

88 VALID-NO VALUES ARE 1 THRU 9.

01 CHK PIC X.

88 VALID-1 VALUES ARE "A" "C" "M" "U" "H" "Q" "I".

88 VALID-2 VALUES ARE "N" "R" "D" "O".

PROCEDURE DIVISION.

\*

\* Display the main menu.

\*

1-MAIN-MENU.

DISPLAY " " ERASE.

2-MM-DISPLAY.

DISPLAY

"OPTIONS AVAILABLE ARE" LINE 7 POSITION 11

"-----" LINE 8 POSITION 11

"A...ACCESS" LINE 9 POSITION 13

"C...CREATION PROGRAM" LINE 10 POSITION 13

"M...MODIFICATION PROGRAM" LINE 11 POSITION 13

"U...INSERTION OF DATA" LINE 12 POSITION 13

"H...HELP AND INTRODUCTION" LINE 13 POSITION 13

"Q...QUIT PROGRAM" LINE 14 POSITION 13

"SPECIFY: A/U/C/M/Q/H: " LINE 15 POSITION 11.

\* Accept and edit the option selected

\*

3-MM-CHECK.

ACCEPT CHK LINE 15 POSITION 33 PROMPT.

DISPLAY WASH LINE 24 POSITION 1.

IF NOT VALID-1 DISPLAY " " LINE 15 POSITION 33

"Bad parameter" LINE 24 POSITION 1

GO TO 3-MM-CHECK.

IF CHK = "I" PERFORM 010-INITIALIZE

ELSE IF CHK = "C" GO TO 020-FCREATE

ELSE IF CHK = "M" GO TO 070-MODIFICATION

ELSE IF CHK = "A" OR CHK = "U"

PERFORM 050-READ

MOVE 0 TO E-O-LOOP

PERFORM 4-MM UNTIL E-O-LOOP = 1

ELSE IF CHK = "Q" GO TO END-PARA.

GO TO 1-MAIN-MENU.



\*  
\* Accept and edit file number to be accessed.  
\*

4-MM.

ACCEPT P-SWITCH LINE 15 POSITION 32 PROMPT.  
IF NOT VALID-NO DISPLAY "Bad parameter" LINE 24  
POSITION 1 " " LINE 15 POSITION 32 GO TO 4-MM.  
MOVE P-SWITCH TO T-KEY READ T-FILE.  
IF F-INDC = 0 DISPLAY "File not existing"  
LINE 24 POSITION 1 GO TO 4-MM.  
MOVE F-NAME TO F-NAM CLOSE T-FILE.  
IF (CHK = "A" OR CHK = "U") AND  
(R-STATUS = 0 OR C-STATUS = 0) DISPLAY  
"Code file not created" LINE 24 POSITION 1  
ERASE GO TO 2-MM-DISPLAY.  
IF CHK = "A" GO TO 060-OPTION.  
MOVE "UPDATE" TO SUB-NAME.  
CALL SUB-NAME USING P-SWITCH F-NAM.  
MOVE 1 TO E-O-LOOP.

END-PARA.

STOP RUN.

\* Installation procedure to initialize all files.

\*

010-INITIALIZE.

DISPLAY "ENTER THE PASS WORD FOR INITIALIZATION"  
LINE 5 POSITION 11.  
ACCEPT P-WORD LINE 7 POSITION 11 PROMPT.  
IF P-WORD = "INITIALIZE"  
OPEN OUTPUT T-FILE  
MOVE 0 TO T-KEE DISPLAY  
"INITIALIZATION" LINE 12 POSITION 35 ERASE  
PERFORM 011-INIT 9 TIMES  
CLOSE T-FILE  
MOVE P-WORD TO F-NAM  
CALL "CCODE" USING P-SWITCH F-NAM  
CALL "RCODE" USING P-SWITCH F-NAM.

011-INIT.

ADD 1 TO T-KEE.  
MOVE 0 TO F-INDC C-STATUS R-STATUS.  
MOVE "FILE NOT YET CREATED" TO F-NAME.

MOVE T-KEE TO T-KEY.

WRITE T-REC.

\*

\* Display menu for file creation.

\*

020-FCREATE.

DISPLAY " " ERASE.

021-F.

DISPLAY "OPTION AVAILABLE ARE"	LINE 7	POSITION 11
"-----"	LINE 8	POSITION 11
"N...CREATE A NEW FILE"	LINE 9	POSITION 15
"R...CREATE ROW CODE FILE"	LINE 10	POSITION 15
"C...CREATE COLMN CODE FILE"	LINE 11	POSITION 15
"Q...QUIT TO MAIN MENU"	LINE 12	POSITION 15
"SPECIFY: N,R,C,Q "	LINE 13	POSITION 15.

\*

\* Accept the option for file creation.

\*

022-F.

ACCEPT CHK LINE 13 POSITION 32 PROMPT.

IF NOT VALID-2 DISPLAY " " LINE 13 POSITION 32

"Bad parameter" LINE 24 POSITION 1 GO TO 022-F.

IF CHK = "Q" GO TO 1-MAIN-MENU.

IF CHK = "N" OPEN I-O T-FILE

MOVE Q TO E-O-LOOP

PERFORM 030-NFILE UNTIL E-O-LOOP = 1

CLOSE T-FILE

GO TO 021-F.

PERFORM 050-READ.

\*

\* Accept and edit file number to be created.

\*

024-F.

ACCEPT P-SWITCH LINE 15 POSITION 32 PROMPT.

IF NOT VALID-NO DISPLAY "bad parameter try again"

LINE 24 " " LINE 15 POSITION 32 GO TO 024-F.

MOVE P-SWITCH TO T-KEY READ T-FILE CLOSE T-FILE.

MOVE F-NAME TO F-NAM.

IF (CHK = "R" AND R-STATUS = 0) OR

(CHK = "C" AND C-STATUS = 0) NEXT SENTENCE



```
ELSE DISPLAY "File already created" LINE 24 POSITION 1
ERASE " go for modification" GO TO 1-MAIN-MENU.
OPEN I-O T-FILE.
IF CHK = "R" MOVE 1 TO F-INDC R-STATUS
                MOVE "RCODE" TO SUB-NAME
ELSE
                MOVE 1 TO F-INDC C-STATUS
                MOVE "CCODE" TO SUB-NAME.
MOVE F-NAM TO F-NAME.
MOVE P-SWITCH TO T-KEY.
REWRITE T-REC CLOSE T-FILE.
CALL SUB-NAME USING P-SWITCH F-NAM.
GO TO 020-FCREATE.
```

\*

\* Creation of a new file.

\*

030-NFILE.

```
READ T-FILE NEXT RECORD AT END
                MOVE 1 TO E-O-LOOP
                DISPLAY "No space for new file" LINE 24
                POSITION 1 ERASE.
IF F-INDC = 0
                DISPLAY "SPECIFY:FILE NAME OF UPTO 20 CHARACTERS"
                LINE 21 POSITION 11
                ACCEPT F-NAME LINE 22 POSITION 19 REVERSE
                PROMPT MOVE 1 TO F-INDC E-O-LOOP
                MOVE 0 TO R-STATUS C-STATUS
                REWRITE T-REC.
                DISPLAY "New file created arrange to enter"
                LINE 24 POSITION 1 ERASE " code file".
```

\*

\* To read and display the existing files.

\*

050-READ.

```
DISPLAY " " ERASE
                "DIRECTORY CONTAINS THE FOLLOWING FILES"
                LINE 3 POSITION 11
                "-----"
                LINE 4 POSITION 11
                "SPECIFY YOUR CHOICE" LINE 15 POSITION 11.
```

OPEN I-O T-FILE.  
PERFORM 051-READ VARYING LINE-NO FROM 5 BY 1  
UNTIL LINE-NO = 14.

051-READ.

READ T-FILE NEXT RECORD AT END MOVE 14 TO LINE-NO.  
DISPLAY T-KEY LINE LINE-NO POSITION 13  
F-NAME LINE LINE-NO POSITION 15.

\*

\* Display the menu for access.

\*

060-OPTION.

DISPLAY " " ERASE  
"OPTION AVAILABLE ARE" LINE 5 POSITION 11  
"\_PROGRAM TO PREPARE MONTHLY STATEMENT"  
LINE 6 POSITION 12  
"\_PROGRAM FOR BUDGET ANALYSIS AND COMPARISON"  
LINE 7 POSITION 12  
"\_PROGRAM FOR INDIVIDUAL TOTAL ROW-WISE COLUMN-WISE"  
LINE 8 POSITION 12  
"\_PROGRAM FOR GRAPHICAL ANALYSIS"  
LINE 9 POSITION 12  
"\_QUIT TO MAIN MENU" LINE 10 POSITION 12  
"Press space bar to skip" LINE 23 POSITION 55  
"Press ENTER to select" LINE 24 POSITION 55.  
MOVE 6 TO LINE-NO.

062-OP.

DISPLAY " " LINE LINE-NO POSITION 11.  
ACCEPT CHK1 LINE LINE-NO POSITION 11 PROMPT.  
DISPLAY " " LINE LINE-NO POSITION 11.  
IF CHK2 = " " PERFORM 064-OP  
ELSE IF CHK1 NOT = 0 GO TO 062-OP  
ELSE IF LINE-NO = 10 GO TO 1-MAIN-MENU  
ELSE IF LINE-NO = 6 MOVE "ACCESSP" TO SUB-NAME  
ELSE IF LINE-NO = 7 MOVE "ANALYSIS" TO SUB-NAME  
ELSE IF LINE-NO = 8 MOVE "TOTAL" TO SUB-NAME  
ELSE MOVE "GRAPH" TO SUB-NAME.  
CALL SUB-NAME USING P-SWITCH F-NAM.  
GO TO 060-OPTION.

064-OP.

ADD 1 TO LINE-NO.

IF LINE-NO > 10 MOVE 6 TO LINE-NO.  
GO TO 062-0P.

\*

\* Modification procedure

\* display menu accept and edit option selected

\* and load the corresponding routine.

\*

070-MODIFICATION.

DISPLAY " " ERASE.

072-DISPLAY.

DISPLAY "OPTION AVAILABLE ARE" LINE 11 POSITION 11  
"-----" LINE 12 POSITION 11  
"R...MODIFY ROW CODE FILE" LINE 13 POSITION 15  
"C...MODIFY COLUMN CODE FILE" LINE 14 POSITION 15  
"N...MODIFY FILE NAME" LINE 15 POSITION 15  
"Q...QUIT TO MAIN MENU" LINE 16 POSITION 15  
"SPECIFY: R,C,N,Q " LINE 17 POSITION 11.

ACCEPT CHK LINE 17 POSITION 28 PROMPT.

IF NOT VALID-2 DISPLAY "Bad parameter"

LINE 24 POSITION 1 ERASE GO TO 072-DISPLAY.

IF CHK = "Q" GO TO 1-MAIN-MENU.

DISPLAY "ENTER PASS WORD TO PERFORM MODIFICATION"

LINE 19 POSITION 11.

ACCEPT P-WORD LINE 20 POSITION 15 PROMPT.

IF P-WORD NOT = "PASSWORD-1" DISPLAY

"Pass word not correct retry"

LINE 24 POSITION 1 ERASE GO TO 072-DISPLAY.

IF CHK = "N" PERFORM 074-NAME.

PERFORM 050-READ.

073-M.

ACCEPT P-SWITCH LINE 15 POSITION 32 PROMPT.

IF NOT VALID-NO DISPLAY "Bad Parameter" LINE 24

POSITION 1 " " LINE 15 POSITION 32

GO TO 073-M.

MOVE P-SWITCH TO T-KEY.

READ T-FILE.

CLOSE T-FILE.

MOVE F-NAME TO F-NAM.

IF CHK = "R" MOVE "RCODE" TO SUB-NAME

ELSE MOVE "CCODE" TO SUB-NAME.



CALL SUB-NAME USING P-SWITCH F-NAM.  
GO TO 070-MODIFICATION.

074-NAME.

DISPLAY "ENTER: a. KEY....."  
LINE 22 POSITION 11  
"b. NEW FILE NAME....." LINE 23 POSITION 17.  
ACCEPT P-SWITCH LINE 22 POSITION 36.  
IF NOT VALID-NO DISPLAY "Key not correct"  
LINE 24 POSITION 1 ERASE GO TO 074-NAME.  
ACCEPT F-NAM LINE 22 POSITION 36.  
OPEN I-O T-FILE MOVE P-SWITCH TO T-KEY.  
READ T-FILE.  
MOVE F-NAM TO F-NAME.  
REWRITE T-REC CLOSE T-FILE.  
DISPLAY "File name changed" LINE 24 POSITION 1 ERASE  
GO TO 072-DISPLAY.

A?

IDENTIFICATION DIVISION.  
PROGRAM-ID. COLCODE.

- \*  
\* This program stores information about the columns  
\* and the header of each chart.

\*  
ENVIRONMENT DIVISION.  
CONFIGURATION SECTION.  
SOURCE-COMPUTER. TANDY-1200.  
OBJECT-COMPUTER. TANDY-1200.  
INPUT-OUTPUT SECTION.  
FILE-CONTROL.

SELECT C-FILE ASSIGN TO RANDOM "CFILE"  
ORGANIZATION IS INDEXED  
ACCESS IS DYNAMIC  
RECORD KEY IS C-KEY.  
SELECT H-FILE ASSIGN TO RANDOM "HFILE"  
ORGANIZATION IS INDEXED  
ACCESS IS DYNAMIC  
RECORD KEY IS H-KEY.

DATA DIVISION.  
FILE SECTION.

FD C-FILE  
LABEL RECORDS ARE STANDARD.

01 C-REC.  
05 C-KEY PIC XX.

05 NO-COL PIC 99.

05 COLMN OCCURS 13 TIMES.

10 C-HEAD PIC X(9).

10 C-LEVEL PIC 9.

10 C-TYPE PIC X.

10 C-NO PIC 9.

10 C-MODE PIC X.

FD H-FILE

LABEL RECORDS ARE STANDARD.

01 H-REC.

02 H-KEY PIC XX.

02 HD OCCURS 3 TIMES.

05 HEAD OCCURS 132 TIMES PIC X.

WORKING-STORAGE SECTION.

77 INT PIC X(23) VALUE "C-FILE INITIALIZE".

77 LINE-NO PIC 99 VALUE 6.

77 I PIC 99.

77 J PIC 99.

77 TC PIC 999.

77 B-LINE PIC X(40) VALUE SPACES.

77 HHH PIC X(8).

77 RULE PIC X(35) VALUE  
"RULE FOR THIS TYPE OF COLUMN HEADS".

77 K PIC 99.

01 C-TYP PIC 9.

88 VALID-NO VALUES ARE 1, 2.

01 CHK PIC X.

88 VALID-CODE VALUES ARE "Y" "N" "Q".

LINKAGE SECTION.

01 P-SWITCH PIC 9.

01 F-NAM PIC X(20).

PROCEDURE DIVISION USING P-SWITCH F-NAM.

\*

\* initialization of c-file and h-file.

\*

BEGIN-1-INITIALIZE.

IF F-NAM NOT = "INITIALIZE" GO TO BEGIN-2-ACCEPT-DATA.

OPEN OUTPUT C-FILE H-FILE.

MOVE SPACES TO C-REC H-REC.

MOVE "99" TO C-KEY H-KEY.

WRITE C-REC.

WRITE H-REC.

CLOSE C-FILE H-FILE.

END-1.



EXIT PROGRAM.

BEGIN-2-ACCEPT-DATA.

\*  
\* Key computation procedure.  
\*

OPEN I-O C-FILE H-FILE.  
MOVE ZEROS TO C-REC.  
PERFORM 01-RULES.  
COMPUTE K = P-SWITCH + (P-SWITCH \* 10).  
MOVE K TO C-KEY H-KEY.  
MOVE 0 TO TC.

BEGIN-30-NO-COL.

\*  
\* Accept and edit number of column.  
\*

ACCEPT NO-COL                    LINE 4   POSITION 35.  
IF NO-COL = 0 READ C-FILE PERFORM 03-NO-OF-COL  
    VARYING I FROM 1 BY 1 UNTIL HHH = "FINISH"  
    GO TO BEGIN-50-HEADER.  
IF NO-COL > 10 DISPLAY "   " LINE 4   POSITION 35  
    GO TO BEGIN-30-NO-COL.  
DISPLAY C-KEY                    LINE 3 POSITION 22.

\*  
\* Accept column name.  
\*

BEGIN-31-NAME.

DISPLAY I                    LINE LINE-NO POSITION 16  
    " . "                    LINE LINE-NO POSITION 18.  
ACCEPT C-HEAD (I)            LINE LINE-NO POSITION 20.  
IF C-HEAD (I) = "FINISH"  
    MOVE "S" TO C-TYPE (I)  
    GO TO BEGIN-40-WRITE.

\*  
\* Accept column mode A if accumulated result needed else N.  
\*

BEGIN-32-MODE.

ACCEPT C-MODE (I)            LINE LINE-NO POSITION 29.  
IF C-MODE (I) = "A" OR C-MODE (I) = "N"  
    NEXT SENTENCE ELSE DISPLAY "   "  
    LINE LINE-NO POSITION 29  
    GO TO BEGIN-32-MODE.

\*  
\* Accept column type according to the rules defined  
\*

BEGIN-33-TYPE.

ACCEPT C-TYP                    LINE LINE-NO POSITION 32.  
IF NOT VALID-NO DISPLAY " " LINE LINE-NO POSITION 32  
GO TO BEGIN-33-TYPE.  
MOVE C-TYP TO C-LEVEL (I).  
ACCEPT C-TYPE (I)                LINE LINE-NO POSITION 33.  
IF C-TYPE (I) NOT = "S" ADD 1 TO TC.

\*  
\* Accept column number i.e. position of column in master file.

BEGIN-34-NUM.

ACCEPT C-NO (I)                  LINE LINE-NO POSITION 36.  
IF (C-NO (I) NOT NUMERIC) OR (C-NO (I) > 10)  
DISPLAY " "                    LINE LINE-NO POSITION 36  
GO TO BEGIN-34-NUM.  
DISPLAY B-LINE                    LINE 17 POSITION 1  
"COMMENT: ANY MISTAKE Y/N "  
LINE 20 POSITION 2 REVERSE.

\*  
\* Prompt for any correction

BEGIN-35-CHECK.

ACCEPT CHK                      LINE 20 POSITION 27 REVERSE.  
IF NOT VALID-CODE DISPLAY " " LINE 20 POSITION 27  
GO TO BEGIN-35-CHECK.  
IF CHK = "Q" CLOSE C-FILE H-FILE GO TO END-2.  
IF CHK = "N"                    ADD 1 TO I  
                                  ADD 1 TO LINE-NO  
ELSE DISPLAY B-LINE              LINE LINE-NO POSITION 1.  
GO TO BEGIN-31-NAME.

BEGIN-40-WRITE.

WRITE C-REC INVALID KEY REWRITE C-REC.

BEGIN-50-HEADER.

COMPUTE TC = TC \* 9 + 35 DISPLAY " " ERASE.  
DISPLAY "ARRANGE HEADING IN A LINE OF        CHARACTERS"  
                                  LINE 11 POSITION 10  
TC                                LINE 11 POSITION 39  
"NUMBER OF LINE AVAILABLE ARE; 3"  
                                  LINE 12 POSITION 10  
"PRESS C TO CONTINUE, A TO ABORT"  
                                  LINE 13 POSITION 10.  
ACCEPT    CHK                    LINE 13 POSITION 40.  
IF CHK = "C"                    MOVE SPACES TO H-REC  
                                  MOVE 15 TO K





IF CHK = "Y" MOVE SPACES TO HD (I)

DISPLAY HD (I) LINE K POSITION 1

GO TO 020-HEADER.

ADD 1 TO I.

ADD 2 TO K.

022-HEAD.

ACCEPT HEAD (I, J)

LINE \* POSITION J.

\*

\* Count number of columns.

\*

03-NO-OF-COL.

IF C-TYPE (I) NOT = "S" ADD 1 TO TC.

MOVE C-HEAD (I) TO HHH.

A>

IDENTIFICATION DIVISION.

PROGRAM-ID. ROWCODE.

\*  
\* THIS PROGRAM ACCEPT, MODIFY AND STORE  
\* DETAIL INFORMATION ABOUT EACH ROW.  
\*

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.

SOURCE-COMPUTER. TANDY-1200.

OBJECT-COMPUTER. TANDY-1200.

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT R-FILE ASSIGN TO RANDOM "RFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS R-KEY.

SELECT M-FILE ASSIGN TO RANDOM "MFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS M-KEY.

DATA DIVISION.

FILE SECTION.

FD R-FILE

LABEL RECORDS ARE STANDARD.

01 R-REC.

05 R-KEY PIC X(5).

05 R-HEAD PIC X(35).

05 R-LEVEL PIC 9.

05 R-TYPE PIC X.

05 T-UNIT PIC X.

FD M-FILE

LABEL RECORDS ARE STANDARD.

01 M-REC.

05 M-KEY PIC X(5).

05 MTH OCCURS 12 TIMES.

10 COL-HEAD OCCURS 10 TIMES PIC 9(6)V9.

05 B-E PIC 9(6)V9.

WORKING-STORAGE SECTION.

77 B-LINE PIC X(78) VALUE SPACES.

77 COMNT PIC X(26) VALUE "COMMENT: ANY MISTAKE Y/N".

77 OPTION PIC X(26) VALUE " SPECIFY (I/M/D/C/Q):".

77 WASH PIC X(40) VALUE SPACES.

\* N IS THE COUNTER K AND KEY-9 ARE USED TO COMPUTE  
\* KEY ENDKEY MARKS THE UPPER LIMIT OF R-FILE.

\*

```
77 N          PIC 99.
77 K          PIC 9(5).
77 FIN        PIC X(33) VALUE 'FINISH'.
77 CFS        PIC X(15).
77 INT        PIC X(22).
77 END-KEY    PIC X(5).
01 KEE.
    05 KEY-9   PIC 9(5).
    05 KEY-X   REDEFINES KEY-9 PIC X(5).
01 CHK        PIC X.
    88 VALID-CODE VALUES ARE "I" "M" "D" "C" "Q".
LINKAGE SECTION.
```

\* THIS SECTION BRINGS INFORMATION FROM SVS (Calling program).

\*

```
01 P-SWITCH   PIC 9.
01 F-NAM      PIC X(20).
PROCEDURE DIVISION USING P-SWITCH F-NAM.
```

\*

\* INITIALIZATION OF M-FILE, R-FILE.

\*

```
BEGIN-0.
    IF F-NAM NOT = "INITIALIZE" GO TO BEGIN-1.
    OPEN OUTPUT M-FILE R-FILE.
    MOVE SPACES TO R-REC M-REC.
    MOVE "30000" TO R-KEY.
    MOVE "00010" TO M-KEY.
    WRITE R-REC.
    WRITE M-REC.
    CLOSE R-FILE M-FILE.
```

END-1.

EXIT PROGRAM.

\*

\* RANGE FOR THE CORRESPONDING STATEMENT IS CALCULATED  
\* IN R-FILE.

\*

```
BEGIN-1.
    OPEN I-O R-FILE M-FILE.
    PERFORM 01-RULES THRU 01-RULES-EXIT.
    COMPUTE K = (P-SWITCH - 1) * 3000.
```



MOVE K TO R-KEY KEY-9.

ADD 1000 TO K.

MOVE K TO END-KEY.

START R-FILE KEY IS > R-KEY INVALID KEY

DISPLAY "RECORD NOT FOUND" LINE 23 POSITION 60.

PERFORM 060-READ-N-DISPLAY THRU 063-READ-N-DISPLAY-EXIT.

SUBTRACT 1 FROM N.

BEGIN-2.

\*

\* START TO ACCEPT NEW DATA.

\*

IF N = 22 PERFORM 01-RULES THRU 01-RULES-EXIT.

DISPLAY B-LINE LINE 24 POSITION 1.

ADD 1 TO N.

ADD 10 TO KEY-9.

MOVE KEY-9 TO K R-KEY.

DISPLAY K LINE N POSITION 1.

BEGIN-3.

. ACCEPT R-HEAD LINE N POSITION 7.

DISPLAY B-LINE LINE 23 POSITION 1.

IF R-HEAD = FIN GO TO BEGIN-4.

ACCEPT R-LEVEL LINE N POSITION 43

R-TYPE LINE N POSITION 44

T-UNIT LINE N POSITION 46.

DISPLAY COMNT LINE 23 POSITION 2 REVERSE.

\*

\* EDITING OF DATA ACCEPTED.

\*

BEGIN-31.

ACCEPT CHK LINE 23 POSITION 28 REVERSE.

IF CHK = "Y" OR CHK = "N" NEXT SENTENCE ELSE DISPLAY

" " LINE 23 POSITION 28 GO TO BEGIN-31.

IF CHK = "N" PERFORM 03-WRITEDISK THRU 03-WRITEDISK-EXIT

ELSE

DISPLAY WASH LINE N POSITION 7

" WRITE AGAIN " LINE 23 POSITION 29 REVERSE

GO TO BEGIN-3.

BEGIN-32.

GO TO BEGIN-2.

BEGIN-4.

CLOSE R-FILE M-FILE.

ENG-PARA.

EXIT PROGRAM.

\*

\*

## 01-RULES.

```

DISPLAY " " ERASE
"CODE FILE FOR " LINE 2 POSITION 24
REVERSE
F-NAM LINE 2 POSITION 38 REVERSE
" KEY " LINE 4 POSITION 1 REVERSE
" ROW HEADS "
LINE 4 POSITION 4 REVERSE
"LH" LINE 4 POSITION 43 REVERSE
"U" LINE 4 POSITION 46 REVERSE
" RULES "
LINE 4 POSITION 49 REVERSE
"LEVEL OF R-HEAD" LINE 5 POSITION 50 REVERSE
"1S:1st LEVEL WITH SUBDIVISION"
LINE 6 POSITION 51
"1N:2nd LEVEL NO SUBDIVISION"
LINE 7 POSITION 51
"2S:2nd LEVEL WITH SUBDIVISION"
LINE 8 POSITION 51
"SIMILARLY 2N,3S,3N,4S,4N & 5N"
LINE 9 POSITION 51
"xG:GROSS COLLECTION."
LINE 10 POSITION 51
"xR:REFUNDS & REBATES"
LINE 11 POSITION 51
"XT:NET COLLECTION OR TOTALS"
LINE 12 POSITION 51
"xP:PARTS NOT TO BE ADDED"
LINE 13 POSITION 51
REVERSE
"U:UNITS OF R-HEAD"
LINE 14 POSITION 50
"R:RS IN MILLIONS, T:TONES"
LINE 15 POSITION 51
"C:'000' CONTAINERS, K:Kgs"
LINE 16 POSITION 51
"N:NO IN MILLIONS, X:NO '000'"
LINE 17 POSITION 51
"L:'000' LITERS, S:S.METERS"
LINE 18 POSITION 51
"A:'000' SQ.METERS, D:METERS"
LINE 19 POSITION 51

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"Q: '000' METERS, P: '000' PCS"

LINE 20 POSITION 51

"B: '100 BOXES" LINE 21 POSITION 50

"AT END TYPE FINISH IN ROW HEAD"

LINE 22 POSITION 50 REVERSE

"OPTIONS: M=MODIFY, I=INSERT, D=DELETE, C=CONTINUE, Q=QUIT"

LINE 24 POSITION 2 REVERSE.

PERFORM 02-LINE VARYING N FROM 4 BY 1 UNTIL N > 22.

MOVE 4 TO N.

01-RULES-EXIT.

EXIT.

02-LINE.

DISPLAY " " LINE N POSITION 48 REVERSE.

\*

\* WRITE ON DISK THE DATA ACCEPTED IN R-FILE.

\*

03-WRITEDISK.

MOVE " REC WRITTEN" TO CFS.

WRITE R-REC INVALID KEY MOVE " REC WRITTEN" TO CFS  
REWRITE R-REC.

DISPLAY CFS LINE 23 POSITION 29 REVERSE.

IF CFS = " REC WRITTEN" PERFORM 04-MDISK-INIL  
THRU 04-MDISK-INIL-EXIT 3 TIMES.

03-WRITEDISK-EXIT.

EXIT.

\*

\* CREATE SPACE ON DISK, IN M-FILE FOR THE RESPECTIVE ROW.

\*

04-MDISK-INIL.

IF R-TYPE = "N" OR R-TYPE = "P" OR R-TYPE = "R"  
NEXT SENTENCE ELSE GO TO 04-MDISK-INIL-EXIT.

MOVE ZEROS TO M-REC.

MOVE K TO M-KEY.

WRITE M-REC INVALID KEY REWRITE M-REC.

DISPLAY M-KEY LINE 23 POSITION 44 REVERSE

" " LINE 23 POSITION 49 REVERSE

ADD 1000 TO K.

04-MDISK-INIL-EXIT.

EXIT.

\*

\* MODIFICATION PROCEDURE

\* READ AND DISPLAY ONE ROW AT A TIME.

\*

060-READ-N-DISPLAY.



ADD 1 TO N.

IF N = 22 PERFORM 01-RULES THRU 01-RULES-EXIT.

READ R-FILE NEXT RECORD AT END

GO TO 063-READ-N-DISPLAY-EXIT.

060-RRR.

IF R-KEY > END-KEY GO TO 063-READ-N-DISPLAY-EXIT.

MOVE R-KEY TO KEY-X.

MOVE KEY-X TO KEY-9.

MOVE KEY-9 TO K.

DISPLAY B-LINE LINE 23 POSITION 1

R-KEY LINE N POSITION 1

R-HEAD LINE N POSITION 7

R-LEVEL LINE N POSITION 43

R-TYPE LINE N POSITION 44

T-UNIT LINE N POSITION 46

COMNT LINE N POSITION 2 REVERSE.

\*

\* PROMPT AND CHECK FOR THE MODIFICATION PROCEDURE.

\*

062-CHECK.

ACCEPT CHK LINE 23 POSITION 28 REVERSE

IF VALID-CODE NEXT SENTENCE

ELSE DISPLAY " " LINE 23 POSITION 28

GO TO 062-CHECK.

IF CHK = "Q" GO TO BEGIN-4

ELSE IF CHK = "M" PERFORM BEGIN-3 THRU BEGIN-31

DISPLAY "MODIFIED" LINE 23 POSITION 59

ELSE IF CHK = "D" DELETE R-FILE

PERFORM 07-DELETE THRU 07-DELETE-EXIT 3 TIMES

DISPLAY "DELETED" LINE 23 POSITION 59

ELSE IF CHK = "I" ADD 1 TO N

ACCEPT KEY-9 LINE N POSITION 1

MOVE KEY-9 TO R-KEY, K

PERFORM BEGIN-3 THRU BEGIN-31

DISPLAY "INSERTED" LINE 23 POSITION 59.

GO TO 060-READ-N-DISPLAY.

063-READ-N-DISPLAY-EXIT.

EXIT.

\*

\* DELETION PROCEDURE

\*

07-DELETE.

MOVE K TO M-KEY.

DELETE M-FILE INVALID KEY

DISPLAY "REC NOT FOUND" LINE 23 POSITION 59.

ADD 1000 TO K.

07-DELETE-EXIT.

EXIT.

A>

IDENTIFICATION DIVISION.  
PROGRAM-ID. UPDATE.

\*  
\* This program help to keep the records of the  
\* master file (M-FILE) up to date.  
\*

AUTHOR.

ENVIRONMENT DIVISION.  
CONFIGURATION SECTION.  
SOURCE-COMPUTER. TANDY-1200.  
OBJECT-COMPUTER. TANDY-1200.  
INPUT-OUTPUT SECTION.  
FILE-CONTROL.

SELECT R-FILE ASSIGN TO RANDOM "RFILE"  
ORGANIZATION IS INDEXED  
ACCESS IS DYNAMIC  
RECORD KEY IS R-KEY.  
SELECT M-FILE ASSIGN TO RANDOM "MFILE"  
ORGANIZATION IS INDEXED  
ACCESS IS DYNAMIC  
RECORD KEY IS M-KEY.  
SELECT C-FILE ASSIGN TO RANDOM "CFILE"  
ORGANIZATION IS INDEXED  
ACCESS IS DYNAMIC  
RECORD KEY IS C-KEY.  
SELECT P-FILE ASSIGN TO PRINT "PRINTER".

DATA DIVISION.

FILE SECTION.

FD R-FILE

LABEL RECORDS ARE STANDARD.

01 R-REC.

05 R-KEY PIC X(5).

05 R-HEAD PIC X(35).

05 R-LEVEL PIC 9.

05 R-TYPE PIC X.

05 T-UNIT PIC X.

FD M-FILE

LABEL RECORDS ARE STANDARD.

01 M-REC.

05 M-KEY PIC X(5).

05 MTH OCCURS 12 TIMES.

10 COL-HEAD OCCURS 10 TIMES PIC 9(6)V9.



05 B E PIC 9(6)V9.

FD C-FILE

LABEL RECORDS ARE STANDARD.

01 C-REC.

05 C-KEY PIC XX.

05 NO-C PIC 99.

05 COLUMN OCCURS 13 TIMES.

10 C-HEAD PIC X(9).

10 C-LEVEL PIC 9.

10 C-TYPE PIC X.

10 C-NO PIC 9.

10 C-MODE PIC X.

FD P-FILE

LABEL RECORDS ARE OMITTED.

01 P-REC.

05 FILLER PIC X(132).

WORKING-STORAGE SECTION.

77 YY PIC 99.

77 YYY PIC 9999.

77 K9 PIC 99.

77 MMM PIC 99.

77 M PIC 999.

77 NOC PIC 99.

77 NO-ROWS PIC 999.

77 N PIC 99.

77 TEMP PIC 9(6)V9.

77 R-H PIC X(35).

77 POS PIC 99.

77 KOUNT PIC 99.

01 HEAD-1.

05 FILLER PIC X(40) VALUE SPACES.

05 FILLER PIC X(8) VALUE "DATA OF ".

05 H1 PIC X(20).

05 FILLER PIC X(15) VALUE " FOR THE MONTH ".

\*

\* YY and MM are data names for year and month

\* I, J and K are used as subscripts

\* POS determine the position on the screen

\* HEAD-1 -2 -3 are different headers for output

\* ENDKEY marks the boundry in row code file (R-FILE).

\*

05 H2 PIC XX.

05 FILLER PIC XXX VALUE ",19".

05 H3 PIC XX.

```

05 FILLER          PIC X(42) VALUE SPACES.
01 HEAD-2.
    05 FILLER      PIC X(6) VALUE " KEY ".
    05 FILLER      PIC X(35) VALUE " HEADS".
    05 F1          OCCURS 10 TIMES PIC X(9).
01 HEAD-3.
    05 FILLER      PIC X VALUE SPACES.
    05 K1          PIC XXXXX.
    05 K2          PIC X(35).
    05 K3          OCCURS 10 TIMES PIC Z(6).Z.
01 I              PIC 999.
01 J              PIC 999.
01 DATA-TABLE.
    05 DATA-REC OCCURS 80 TIMES.
        10 M-KEE          PIC 999999.
        10 TYPES          PIC X.
        10 HEAD           PIC X(35).
        10 DATA1 OCCURS 10 TIMES PIC 9(6)V9.
01 END-KEY        PIC X(5).
01 TKEY           PIC 999999.
01 CKEY-X         PIC XXXXX.
01 CKEY-9         REDEFINES CKEY-X PIC 999999.
01 MM            PIC 99.
        88 VALID-MNTH VALUES ARE 1 THRU 12.
01 CHK           PIC X.
        88 VALID-CODE VALUES ARE "E" "D" "Q" "B" "P".
        88 VALID-COD  VALUES ARE "Y" "N" "Q".

```

LINKAGE SECTION.

```

01 P-SWITCH      PIC 9.
01 F-NAM         PIC X(20).

```

PROCEDURE DIVISION USING P-SWITCH F-NAM.

\*  
\*  
\*

BEGIN-10-MENU.

DISPLAY " " ERASE

"P. NEED PRINTOUT OF DATA ENTERED." LINE 10 POSITION 22

"E. NEED EDITING." LINE 11 POSITION 22

"SPECIFY: D. NEED DATA ENTRY." LINE 12 POSITION 11

"B. NEED BUDGET ESTIMATE ENTRY." LINE 13 POSITION 22

"Q. QUIT" LINE 14 POSITION 22.

\*  
\*  
\*

\* Accept option and display month ,year required.

BEGIN-12-CHK.

ACCEPT CHK           LINE 12 POSITION 20 PROMPT "." BLINK  
IF VALID-CODE NEXT SENTENCE ELSE  
DISPLAY " "           LINE 12 POSITION 20  
GO TO BEGIN-12-CHK.  
IF CHK = "Q" GO TO END-EXIT.  
IF CHK = "B" GO TO 070-BESTIMATE.  
DISPLAY "SPECIFY: 1. YEAR 19"   LINE 16 POSITION 11  
                                  "2. MONTH "   LINE 17 POSITION 20.  
ACCEPT YY            LINE 16 POSITION 30 PROMPT "." BLINK.

BEGIN-14.

ACCEPT MM LINE 17 POSITION 30 PROMPT "." BLINK.  
IF VALID-MNTH NEXT SENTENCE ELSE  
DISPLAY " " LINE 17 POSITION 30  
GO TO BEGIN-14.  
IF MM < 7 COMPUTE MMM = 6 + MM COMPUTE YYY = YY + 1  
ELSE COMPUTE MMM = MM - 6 MOVE YY TO YYY.  
IF CHK = "E" GO TO 060-EDITING.

\*

\* Calculate the key.

\*

BEGIN-16.

DIVIDE YYY BY 3 GIVING CKEY-9.  
COMPUTE YYY = (YYY - (CKEY-9 \* 3)) \* 1000.  
COMPUTE CKEY-9 = (P-SWITCH - 1) \* 3000.  
MOVE CKEY-9 TO R-KEY.  
COMPUTE CKEY-9 = CKEY-9 + 1000.  
MOVE CKEY-9 TO END-KEY.  
COMPUTE CKEY-9 = CKEY-9 - 1005 + YYY  
MOVE CKEY-9 TO TKEY.

\*

\* Check if printout is required.

\*

BEGIN-18.

IF CHK = "P" PERFORM 090-READ-PRINT.  
PERFORM 020-COLMNCODE THRU 022-ROWCODE  
PERFORM 030-HEADING.  
CLOSE R-FILE C-FILE.  
PERFORM 013-LOOP VARYING J FROM 1 BY 1 UNTIL J > NO-C.  
PERFORM 040-DATA-ENTRY VARYING M FROM 1 BY 1 UNTIL  
                                  M = NO-ROWS.  
OPEN I-O M-FILE.  
PERFORM 010-WRITEDISK VARYING I FROM 1 BY 1 UNTIL  
                                  I > NO-ROWS.



CLOSE M-FILE.  
OPEN OUTPUT P-FILE.  
DISPLAY " " ERASE  
"SPECIFY:NEED A HARD COPY Y/N" LINE 5 POSITION 11  
ACCEPT CHK LINE 6 POSITION 13 PROMPT BLINK.  
IF CHK = "Y" PERFORM 050-PRINT.  
CLOSE P-FILE.  
GO TO BEGIN-10-MENU.

END-EXIT.

EXIT PROGRAM.

\*  
\* Write data on the disk.  
\*  
010-WRITEDISK.  
MOVE M-KEY (I) TO M-KEY.  
READ M-FILE INVALID KEY WRITE M-REC.  
PERFORM 012-LOOP VARYING J FROM 1 BY 1 UNTIL J > NO-C.  
REWRITE M-REC.

012-LOOP.

MOVE DATA1 (I, J) TO COL-HEAD (MMM, J).

013-LOOP.

MOVE ZEROS TO DATA1 (NO-ROWS, J).

\*  
\* Read the column file.  
\*

020-COLMNCODE.

OPEN I-O C-FILE , R-FILE.  
COMPUTE K9 = P-SWITCH + P-SWITCH \* 10.  
MOVE K9 TO C-KEY.  
READ C-FILE.

\*  
\* READ THE ROW FILE  
\*

022-ROWCODE.

START R-FILE KEY IS > R-KEY INVALID KEY  
DISPLAY "RECORD NOT FOUND" LINE 19 POSITION 20.  
READ R-FILE NEXT RECORD AT END MOVE "99999" TO R-KEY.  
MOVE 1 TO I PERFORM 024-READ-LOOP UNTIL R-KEY > END-KEY  
MOVE I TO NO-ROWS MOVE TKEY TO M-KEY (I)  
MOVE "GRAND TOTAL " TO HEAD (I).

024-READ-LOOP.

IF R-TYPE = "N" OR R-TYPE = "R" OR R-TYPE = "P"  
MOVE R-KEY TO CKEY-X  
MOVE CKEY-X TO CKEY-9

COMPUTE M-KEY (I) = CKEY-9 + YYY

MOVE R-HEAD TO HEAD (I)

MOVE R-TYPE TO TYPES (I)

ADD 1 TO I.

READ R-FILE NEXT RECORD AT END MOVE "99999" TO R-KEY.

030-HEADING.

\*

\* Display the heading for chart.

\*

MOVE 6 TO N.

DISPLAY " " ERASE

"DATA ENTRY FORM FOR " LINE 2 POSITION 20

F-NAM LINE 2 POSITION 41

MM LINE 3 POSITION 48

",19" LINE 3 POSITION 70

YY LINE 3 POSITION 73.

PERFORM 036-H VARYING I FROM 5 BY 1 UNTIL I = 24.

MOVE 4 TO J MOVE 1 TO KOUNT POS.

PERFORM 032-LOOP VARYING I FROM 1 BY 1

UNTIL KOUNT > NO-C.

032-LOOP.

IF C-NO (I) NOT = 0 MOVE C-HEAD (I) TO F1 (KOUNT)

DISPLAY C-HEAD (I) LINE 4 POSITION POS REVERSE

C-NO (I) LINE 5 POSITION J

ADD 8 TO J ADD 8 TO POS ADD 1 TO KOUNT.

036-H.

DISPLAY " " REVERSE LINE I POSITION B " " "

REVERSE " " " REVERSE " " " REVERSE

" " " REVERSE " " " REVERSE " "

" " REVERSE " " " REVERSE " " " REVERSE.

\*

\* Paragraph for data entry.

\*

040-DATA-ENTRY.

MOVE 1 TO POS.

IF N = 24 PERFORM 030-HEADING.

DISPLAY HEAD (M) LINE 3 POSITION 3.

PERFORM 044-DATA-LOOP THRU 048-EXIT VARYING J FROM 1 BY  
1 UNTIL J > NO-C.

ADD 1 TO N.

044-DATA-LOOP.

046-D.

ACCEPT DATA1 (M, J) LINE N POSITION POS PROMPT ECHO.

IF DATA1 (M, J) NOT NUMERIC DISPLAY " "

LINE POSITION POS GO TO 046-D.

IF TYPES (M) = "N" ADD DATA1 (M, J) TO

DATA1 (NO-ROWS, J) ELSE

IF TYPES (M) = "R"

SUBTRACT DATA1 (M, J) FROM DATA1 (NO-ROWS, J).

ADD 8 TO POS.

048-EXIT.

EXIT.

\*

\* Paragraph for printing of header.

\*

050-PRINT.

MOVE F-NAM TO H1.

MOVE MM TO H2.

MOVE YY TO H3.

COMPUTE NOC = NO-C + 1.

WRITE P-REC FROM HEAD-1 AFTER 2 LINES.

PERFORM 056-P VARYING J FROM NOC BY 1 UNTIL J > 10.

WRITE P-REC FROM HEAD-2 AFTER 2 LINES.

PERFORM 052-P VARYING I FROM 1 BY 1 UNTIL I > NO-ROWS.

052-P.

MOVE M-KEY (I) TO K1.

MOVE HEAD (I) TO K2.

PERFORM 054-P VARYING J FROM 1 BY 1 UNTIL J > NO-C.

PERFORM 056-P VARYING J FROM NOC BY 1 UNTIL J > 10.

WRITE P-REC FROM HEAD-3.

054-P.

MOVE DATA1 (I, J) TO K3 (J).

056-P.

MOVE SPACES TO F1 (J).

MOVE ZEROES TO K3 (J).

060-EDITING.

DISPLAY " " ERASE

"SPECIFY: KEY" LINE 5 POSITION 11

": COLMN #" LINE 6 POSITION 18

": VALUE" LINE 7 POSITION 18.

OPEN I-O M-FILE.

ACCEPT M-KEY LINE 5 POSITION 29

I LINE 6 POSITION 29

TEMP LINE 7 POSITION 29.

READ M-FILE INVALID KEY GO TO 060-EDITING.

MOVE TEMP TO COL-HEAD (MMM, I).

REWRITE M-REC.

CLOSE M-FILE.



DISPLAY " MORE CORRECTION (Y/N)" LINE 8 POSITION 11.  
ACCEPT CHK LINE 8 POSITION 33.  
IF CHK = "Y" GO TO 060-EDITING.  
ELSE GO TO BEGIN-10-MENU.

062-E-EXIT.

EXIT.

070-BESTIMATE.

DISPLAY "SPECIFY: YEAR 19 -19 ." LINE 16 POSITION 11.  
ACCEPT YY LINE 16 POSITION 27  
MM LINE 16 POSITION 32.  
MOVE YY TO YYY.  
PERFORM BEGIN-16.  
OPEN I-O R-FILE.  
PERFORM 022-ROWCODE.  
CLOSE R-FILE.

072-BE.

DISPLAY " " ERASE.  
DISPLAY "BUDGET ESTIMATE FOR " LINE 2 POSITION 5  
REVERSE  
F-NAM LINE 2 POSITION 25 REVERSE  
R-H LINE 4 POSITION 1 REVERSE  
" VALUE " LINE 4 POSITION 37 REVERSE.  
MOVE 5 TO J.

074-BE.

PERFORM 076-BE VARYING I FROM 1 BY 1  
UNTIL I > NO-ROWS.  
OPEN I-O M-FILE.  
PERFORM 078-WRITEBE VARYING I FROM 1 BY 1  
UNTIL I > NO-ROWS.  
CLOSE M-FILE.  
GO TO BEGIN-10-MENU.

076-BE.

DISPLAY HEAD (I) LINE J POSITION 1.  
ACCEPT DATA1 (I, 1) LINE J POSITION 37 PROMPT ECHO.  
ADD 1 TO J.  
IF J = 25 PERFORM 072-BE.

078-WRITEBE.

MOVE M-KEY (I) TO M-KEY.  
READ M-FILE INVALID KEY WRITE M-REC.  
MOVE DATA1 (I, 1) TO B-E.  
REWRITE M-REC.

070-BE-EXIT.

EXIT.

090-READ-PRINT.

PERFORM 020-COLMNCODE THRU 022-ROWCODE.

OPEN I-O M-FILE.

PERFORM 094-RP VARYING I FROM 1 BY 1 UNTIL I = NO-ROWS.

CLOSE M-FILE.

OPEN OUTPUT P-FILE.

PERFORM 050-PRINT.

CLOSE P-FILE.

GO TO BEGIN-10-MENU.

094-RP.

MOVE M-KEE (I) TO M-KEY.

READ M-FILE.

PERFORM 096-RP VARYING J FROM 1 BY 1 UNTIL J > NO-C.

096-RP.

MOVE COL-HEAD (MMM, J) TO DATA1 (I, J).

A>

IDENTIFICATION DIVISION.

PROGRAM-ID. ACCESSP.

AUTHOR.

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.

SOURCE-COMPUTER. TANDY-1200.

OBJECT-COMPUTER. TANDY-1200.

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT R-FILE ASSIGN TO RANDOM "RFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS R-KEY.

SELECT M-FILE ASSIGN TO RANDOM "MFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS M-KEY.

SELECT C-FILE ASSIGN TO RANDOM "CFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS C-KEY.

SELECT H-FILE ASSIGN TO RANDOM "HFILE"

ACCESS IS DYNAMIC

ORGANIZATION IS INDEXED

RECORD KEY IS H-KEY.

SELECT P-FILE ASSIGN TO PRINT "PRINTER".

DATA DIVISION.

FILE SECTION.

FD R-FILE

LABEL RECORDS ARE STANDARD.

01 R-REC.

05 R-KEY PIC X(5).

05 R-HEAD PIC X(35).

05 R-LEVEL PIC 9.

05 R-TYPE PIC X.

05 T-UNIT PIC X.

FD M-FILE

LABEL RECORDS ARE STANDARD.

01 M-REC.

05 M-KEY PIC X(5).

05 MTH OCCURS 12 TIMES.



10 COL-HEAD OCCURS 10 TIMES PIC 9(6)V9.

05 B-E PIC 9(6)V9.

FD C-FILE

LABEL RECORDS ARE STANDARD.

01 C-REC.

05 C-KEY PIC XX.

05 NO-C PIC 99.

05 COLMN OCCURS 13 TIMES.

10 C-HEAD PIC X(9).

10 C-LEVEL PIC 9.

10 C-TYPE PIC X.

10 C-NO PIC 9.

10 C-MODE PIC X.

FD H-FILE

LABEL RECORDS ARE STANDARD.

01 H-REC.

05 H-KEY PIC XX.

05 HD OCCURS 3 TIMES.

10 HEAD OCCURS 132 TIMES PIC X.

FD P-FILE LABEL RECORDS ARE OMITTED.

01 P-REC.

05 FILLER PIC X(132).

WORKING-STORAGE SECTION.

77 MMM PIC 9999.

77 YY PIC 99.

77 YYY PIC 9999.

77 R PIC 999.

77 C PIC 99.

77 I PIC 999.

77 J PIC 999.

77 K PIC 999.

77 S PIC 9.

77 L PIC 999.

77 M PIC 999.

77 O PIC 999.

77 P PIC 999.

77 N PIC 999.

77 LEV PIC 999.

77 TC PIC 99 VALUE ZEROS.

77 TR PIC 999 VALUE ZEROS.

77 POS PIC 999.

77 POS1 PIC 99.

77 POS2 PIC 99.

77 POS3 PIC 99.

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01 H-HEAD1.
05 H1 PIC X(22) VALUE "GOVERNMENT OF PAKISTAN".
01 P-HEAD1 REDEFINES H-HEAD1.
05 P1 OCCURS 22 TIMES PIC X.
01 H-HEAD2.
05 H2 PIC X(25) VALUE "CENTRAL BOARD OF REVENUE".
01 P-HEAD2 REDEFINES H-HEAD2.
05 P2 OCCURS 25 TIMES PIC X.
01 H-HEAD3.
05 H3 PIC X(38) VALUE
      "(DIRECTORATE OF RESEARCH & STATISTICS)".
01 P-HEAD3 REDEFINES H-HEAD3.
05 P3 OCCURS 38 TIMES PIC X.
01 M-HEAD.
05 M OCCURS 132 TIMES PIC X.
01 ST PIC 999.
01 WASH PIC X(78) VALUE SPACES.
01 OPTION.
05 FILLER PIC X(41) VALUE
      "OPTION: U.UP D.DOWN L.LEFT R.RIGHT Q.QUIT".
05 FILLER PIC X(20) VALUE " P.PRINT N.NEW PAGE".
01 TOTAL-ROW.
10 A OCCURS 10 TIMES PIC 9(10)9.
01 KEY-X PIC X(5).
01 KEY-9 REDEFINES KEY-X PIC 9(5).
01 CKEY PIC 99.
01 ENDKEY PIC X(5).
01 MM PIC 99.
05 B9 VALID-M VALUES ARE 1 THRU 12.
01 CHART.
05 RL OCCURS 100 TIMES PIC 9.
05 RT OCCURS 100 TIMES PIC X.
05 RH1 OCCURS 100 TIMES PIC X(35).
05 CM OCCURS 10 TIMES PIC X.
05 CN OCCURS 10 TIMES PIC 99.
05 CL OCCURS 10 TIMES PIC 9.
05 CT OCCURS 10 TIMES PIC X.
01 C-CHART.
05 CH1 OCCURS 10 TIMES PIC X(8).
01 ABC.
05 A1 PIC X(35).
05 A2 PIC X(3).
05 A3 OCCURS 10 TIMES PIC X(9).
01 XY.

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05 FILLER PIC X(14) VALUE "FOR THE MONTH".
05 XY1 PIC XXX.
05 FILLER PIC XXXX VALUE " 19".
05 XY2 PIC 99.
01 CHART1.
05 ROW OCCURS 70 TIMES.
    10 COL OCCURS 8 TIMES PIC 99.99.
01 CHART2.
05 D OCCURS 70 TIMES.
    10 B OCCURS 8 TIMES PIC -----,.
01 CHK PIC X.
88 VALID-C VALUES ARE "U" "D" "L" "R" "Q" "P" "N".
01 M-TABLE.
05 FILLER PIC X(18) VALUE "JUL AUG SEP OCT NOV DEC".
05 FILLER PIC X(18) VALUE "JAN FEB MAR APR MAY JUN".
01 M-TAB REDEFINES M-TABLE.
05 MN OCCURS 12 TIMES PIC XXX.
LINKAGE SECTION.
01 P-SWITCH PIC 9.
01 F-NAM PIC X(20).
PROCEDURE DIVISION USING P-SWITCH F-NAM.
BEGIN-1.
    DISPLAY " " ERASE
        "SPECIFY:YEA? 19" LINE 11 POSITION 11
        "MONTH" LINE 12 POSITION 19.
BEGIN-2.
    ACCEPT YY LINE 11 POSITION 26 PROMPT BLINK.
*
* Compute key and move data to memory.
*
BEGIN-3.
    ACCEPT MM LINE 12 POSITION 26 PROMPT.
    IF VALID-M NEXT SENTENCE ELSE
        DISPLAY " " LINE 12 POSITION 26
        GO TO BEGIN-3.
    OPEN I-O R-FILE C-FILE M-FILE H-FILE.
    IF MM < 7 COMPUTE MMM = MM + 6
        COMPUTE YYY = YY - 1
    ELSE COMPUTE MMM = MM - 6
        MOVE YY TO YYY.
    DIVIDE YYY BY 3 GIVING CKEY.
    COMPUTE YYY = (YYY - (CKEY * 3) ) * 1000.
    COMPUTE CKEY = P-SWITCH + P-SWITCH * 10.
    MOVE CKEY TO C-KEY H-KEY.

```



COMPUTE KEY-9 = (P-SWITCH - 1) \* 3000.  
MOVE KEY-9 TO KEY-X.  
MOVE KEY-X TO R-KEY.  
ADD 1000 TO KEY-9.  
MOVE KEY-9 TO KEY-X.  
MOVE KEY-X TO ENDKEY.  
READ C-FILE.  
MOVE 1 TO I J.  
PERFORM 010-CODE THRU 012-EXIT.  
START R-FILE KEY IS > R-KEY INVALID KEY  
DISPLAY "RECORD NOT FOUND".  
MOVE 1 TO I MOVE 2 TO K.  
PERFORM 020-RCODE THRU 023-RCODE-EXIT.  
MOVE K TO R SUBTRACT 2 FROM R.  
MOVE 2 TO LEV.  
MOVE 1 TO ST.  
PERFORM 030-COL-SUM VARYING J FROM 1 BY 1 UNTIL J > C.  
MOVE 1 TO ST-LEV.  
PERFORM 030-COL-SUM VARYING J FROM 1 BY 1 UNTIL J > C.  
MOVE 6 TO LEV.  
MOVE ZEROS TO TOTAL-ROW.  
PERFORM 040-ROW-SUM 5 TIMES.  
CLOSE R-FILE C-FILE M-FILE.  
PERFORM 050-TRANSFER VARYING I FROM 1 BY 1 UNTIL I > R  
AFTER J FROM 1 BY 1 UNTIL J > C.  
MOVE 1 TO I MOVE 2 TO J MOVE 3 TO K.  
MOVE 1 TO M MOVE 17 TO N MOVE 4 TO L.  
PERFORM D1.

\*  
\* paragraph for checking the option for screen manipulation.  
\*

D0.

DISPLAY " " LINE 24 POSITION 61.  
ACCEPT CHK LINE 24 POSITION 61 PROMPT BLINK.  
IF VALID-C NEXT SENTENCE ELSE GO TO D0.  
IF CHK = "Q" GO TO D-EXIT.  
IF CHK = "P" PERFORM 010-PRINT.  
IF CHK = "N" GO TO D4.  
IF CHK = "U" ADD 1 TO N ADD 1 TO M  
ELSE IF CHK = "D" SUBTRACT 1 FROM N SUBTRACT 1 FROM M  
ELSE IF CHK = "L" ADD 1 TO K ADD 1 TO L ADD 1 TO I  
ADD 1 TO J  
ELSE IF CHK = "R" SUBTRACT 1 FROM K SUBTRACT 1 FROM I  
SUBTRACT 1 FROM L SUBTRACT 1 FROM J.

IF L C OR M = 0 OR I = 0 OR N > R PERFORM D3.

\*  
\* Displays header for chart and gives procedure for scrolling.  
\*

D1.

DISPLAY "A STATEMENT SHOWING MONTHLY COLLECTION OF "  
LINE 1 POSITION 13 F-ROW "FOR " LINE 2 POSITION 42  
MN (MMM) " 19" YY "ROW HEADS" LINE 5 POSITION 13  
" " LINE 5 POSITION 36 REVERSE " " CH1 (I)  
" " " REVERSE " " CH1 (J) " " REVERSE " " CH1 (K)  
" " REVERSE " " CH1 (L) WASH LINE 6 POSITION 1 REVERSE  
I LINE 6 POSITION 42 J LINE 6 POSITION 52  
K LINE 6 POSITION 62 L LINE 6 POSITION 72  
OPTION LINE 24 POSITION 1 REVERSE.  
MOVE 7 TO ST.  
PERFORM D2 VARYING 0 FROM M BY 1 UNTIL 0 > N.  
GO TO D2.

D2.

DISPLAY  
RH1 (0) LINE ST POSITION 1 0 REVERSE " " B (0, I)  
" " " REVERSE B (0, J) " " " REVERSE B (0, K)  
" " " REVERSE B (0, L).  
ADD 1 TO ST.

D3.

IF CHK = "U" SUBTRACT 1 FROM M SUBTRACT 1 FROM N  
ELSE IF CHK = "D" ADD 1 TO N  
ADD 1 TO L ELSE IF CHK = "L" SUBTRACT 1 FROM I  
SUBTRACT 1 FROM K SUBTRACT 1 FROM L SUBTRACT 1 FROM J  
ELSE IF CHK = "R" ADD 1 TO I ADD 1 TO J ADD 1 TO K  
ADD 1 TO L.  
GO TO D2.

D4.

IF N = R MOVE 1 TO M MOVE 17 TO N PERFORM D1.  
ADD 17 TO M ADD 17 TO N.  
IF N > R MOVE R TO N DISPLAY " " ERASE.  
PERFORM D1.

D-EXIT.

EXIT PROGRAM.

\*  
\* Read the column code file.  
\*

010-CCODE.

IF C-HEAD (I) = "FINISH" GO TO 012-EXIT.  
IF C-TYPE (I) = "S" ADD 1 TO I GO TO 010-CCODE.

MOVE C-NO (I) TO CN (J).  
MOVE C-MODE (I) TO CM (J).  
MOVE C-LEVEL (I) TO CL (J).  
MOVE C-HEAD (I) TO CH1 (J).  
MOVE C-TYPE (I) TO CT (J).  
MOVE J TO C.  
ADD 1 TO I ADD 1 TO J.  
IF J > 12 GO TO Ø12-EXIT.  
GO TO Ø1Ø-CCODE.

Ø12-EXIT.

EXIT.

\*  
\* Read the row code file.

\*  
Ø2Ø-RCODE.

READ R-FILE NEXT RECORD AT END GO TO Ø2Ø-RCODE-EXIT.  
IF R-KEY > ENDKEY GO TO Ø2Ø-RCODE-EXIT.  
MOVE ZEROS TO ROW (I) ROW (K).  
MOVE R-LEVEL TO RL (I) RL (K).  
MOVE R-TYPE TO RT (I) RT (K).  
MOVE R-HEAD TO RH1 (I).  
MOVE " " UPTO THE MONTH TO RH1 (K).  
IF R-TYPE = "B" MOVE WASH TO RH1 (K).  
IF R-TYPE = "S" OR R-TYPE = "G" OR R-TYPE = "T"  
NEXT SENTENCE ELSE  
MOVE R-KEY TO KEY-X MOVE KEY-X TO KEY-9  
ADD YYY TO KEY-9 MOVE KEY-9 TO R-KEY READ M-FILE  
PERFORM Ø24-RC THRU Ø26-RC VARYING J FROM 1 BY 1  
UNTIL J > C.  
ADD 2 TO I ADD 2 TO K.  
GO TO Ø2Ø-RCODE.

Ø2Ø-RCODE-EXIT.

EXIT.

Ø24-RC.

IF CN (J) = Ø GO TO Ø26-RC.  
MOVE CN (J) TO N.  
MOVE COL-HEAD (MMM, N) TO COL (I, J).  
IF CM (J) = "A"  
PERFORM Ø28-RC VARYING M FROM 1 BY 1 UNTIL M > MMM.

Ø26-RC.

EXIT.

Ø28-RC.

ADD COL-HEAD (M, N) TO COL (K, J).

Ø3Ø-COL-SUM.



IF CL (J) = LEV AND CT (J) = "T" PERFORM 032-CS  
THRU 032-EXIT VARYING N FROM ST BY 1 UNTIL N = J  
SUBTRACT 1 FROM CL (J) MOVE "N" TO CT (J)  
MOVE J TO ST ADD 1 TO ST.

032-CS.

IF CL (N) NOT = LEV GO TO 032-EXIT.  
IF CT (N) = "N" PERFORM 033-CS.  
IF CT (N) = "R"  
PERFORM 033-CS VARYING I FROM 1 BY 2 UNTIL I > R.  
ELSE IF CT (N) = "R"  
PERFORM 034-CS VARYING I FROM 1 BY 2 UNTIL I > R.  
ELSE IF CT (N) = "G"  
PERFORM 035-CS VARYING I FROM 1 BY 2 UNTIL I > R.

032-EXIT.

EXIT.

033-CS.

ADD COL (I, N) TO COL (I, J).

034-CS.

SUBTRACT COL (I, N) FROM COL (I, J).

035-CS.

MOVE COL (I, J) TO COL (I, N).

036-CS.

IF CT (N) = "N"  
PERFORM 033-CS VARYING I FROM 2 BY 2 UNTIL I > R.  
ELSE IF CT (N) = "R"  
PERFORM 034-CS VARYING I FROM 2 BY 2 UNTIL I > R.  
ELSE IF CT (N) = "G"  
PERFORM 035-CS VARYING I FROM 2 BY 2 UNTIL I > R.

040-ROW-SUM.

SUBTRACT 1 FROM LEV.  
PERFORM 042-RS VARYING I FROM 2 BY 2 UNTIL I > R.  
PERFORM 042-RS VARYING I FROM 1 BY 2 UNTIL I > R.

042-RS.

IF RL (I) = LEV PERFORM 044-RS  
ELSE IF RL (I) < LEV MOVE ZEROS TO TOTAL-ROW.

044-RS.

IF RT (I) = "N" PERFORM 046-RS  
VARYING J FROM 1 BY 1 UNTIL J > C  
ELSE IF RT (I) = "R" PERFORM 047-RS  
VARYING J FROM 1 BY 1 UNTIL J > C  
ELSE IF RT (I) = "G" PERFORM 048-RS  
VARYING J FROM 1 BY 1 UNTIL J > C  
ELSE IF RT (I) = "T" PERFORM 048-RS  
VARYING J FROM 1 BY 1 UNTIL J > C

001-ADD 1 FROM RE (1)

MOVE "N" TO RT (I)

MOVE ZEROS TO TOTAL-ROW.

046-RS.

ADD COL (I, J) TO A (J).

047-RS.

SUBTRACT COL (I, J) FROM A (J).

048-RS.

MOVE A (J) TO COL (I, J).

050-TRANSFER.

MOVE COL (I, J) TO B (I, J).

010-PRINT.

COMPUTE POS = (C \* 9) + 40.

OPEN OUTPUT P-FILE.

COMPUTE POS1 = ( POS - 22 ) / 2.

COMPUTE POS2 = ( POS - 25 ) / 2.

COMPUTE POS3 = ( POS - 38 ) / 2.

MOVE SPACES TO M-HEAD.

PERFORM PARA-M VARYING 0 FROM 1 BY 1 UNTIL 0 > 22.

WRITE P-REC FROM M-HEAD AFTER PAGE.

MOVE SPACES TO M-HEAD.

PERFORM PARA-N VARYING 0 FROM 1 BY 1 UNTIL 0 > 25.

WRITE P-REC FROM M-HEAD.

MOVE SPACES TO P-REC.

PERFORM PARA-O VARYING 0 FROM 1 BY 1 UNTIL 0 > 38

WRITE P-REC FROM M-HEAD AFTER 1.

READ H-FILE MOVE SPACES TO ABC.

MOVE SPACES TO P-REC WRITE P-REC FROM HD (1) AFTER 2.

MOVE SPACES TO P-REC WRITE P-REC FROM HD (2).

MOVE MN (MMM) TO XY1 MOVE YY TO XY2 MOVE XY TO A1.

MOVE "MILLION" TO A3 (C) COMPUTE S = C - 1.

MOVE " RS IN" TO A3 (S) WRITE P-REC FROM ABC.

MOVE SPACES TO M-HEAD PERFORM PARA-P VARYING 0 FROM 1

BY 1 UNTIL 0 > POS WRITE P-REC FROM M-HEAD.

MOVE SPACES TO P-REC WRITE P-REC FROM HD (3).

MOVE SPACES TO M-HEAD.

PERFORM PARA-P VARYING 0 FROM 1 BY 1 UNTIL 0 > POS.

WRITE P-REC FROM M-HEAD.

MOVE SPACES TO M-HEAD ABC MOVE " ROW-HEADS"

TO A1.

PERFORM PARA-Q VARYING 0 FROM 1 BY 1 UNTIL 0 > C.

WRITE P-REC FROM ABC.

PERFORM PARA-P VARYING 0 FROM 1 BY 1 UNTIL 0 > POS.

WRITE P-REC FROM M-HEAD MOVE 45 TO TC.

MOVE SPACES TO M-HEAD

PERFORM PARA-R VARYING S FROM 1 BY 1 UNTIL 0 > POS.  
WRITE P-REC FROM M-HEAD MOVE SPACES TO ABC.  
PERFORM PARA-S VARYING TC FROM 1 BY 1 UNTIL TC > R.

PARA-M.

MOVE P1 (0) TO H (POS1).  
ADD 1 TO POS1.

PARA-N.

MOVE P2 (0) TO H (POS2).  
ADD 1 TO POS2.

PARA-O.

MOVE P3 (0) TO H (POS3).  
ADD 1 TO POS3.

PARA-P.

MOVE "-" TO H (0).

PARA-Q.

MOVE CH1 (0) TO A3 (0).

PARA-R.

MOVE S TO H (TC) ADD 9 TO TC.

PARA-S.

MOVE RH1 (TC) TO A1.

MOVE TC TO A2.

PERFORM PARA-T VARYING G FROM 1 BY 1 UNTIL 0 > C.

WRITE P-REC FROM ABC.

PARA-T. MOVE B (TC, 0) TO A3 (0).



IDENTIFICATION DIVISION.

PROGRAM-ID. BUDGET.

AUTHOR.

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.

SOURCE-COMPUTER. TANDY-1200.

OBJECT-COMPUTER. TANDY-1200.

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT R-FILE ASSIGN TO RANDOM "RFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS R-KEY.

SELECT M-FILE ASSIGN TO RANDOM "MFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS M-KEY.

SELECT C-FILE ASSIGN TO RANDOM "CFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS C-KEY.

SELECT P-FILE ASSIGN TO PRINT "PRINTER".

DATA DIVISION.

FILE SECTION.

FD R-FILE

LABEL RECORDS ARE STANDARD.

01 R-REC.

05 R-KEY R-KEY

05 R-HEAD PIC X(35).  
 05 R-LEVEL PIC 9.  
 05 R-TYPE PIC X.  
 05 T-UNIT PIC X.  
 FD M-FILE  
 LABEL RECORDS ARE STANDARD.  
 01 M-REC.  
 05 M-KEY PIC X(5).  
 05 MTH OCCURS 12 TIMES.  
     10 COL-HEAD OCCURS 10 TIMES PIC 9(6)V9.  
 05 B-E PIC 99(6)V9.  
 FD C-FILE  
 LABEL RECORDS ARE STANDARD.  
 01 C-REC.  
 05 C-KEY PIC XX.  
 05 NO-C PIC 99.  
 05 COLMN OCCURS 13 TIMES.  
     10 C-HEAD PIC X(9).  
     10 C-LEVEL PIC 9.  
     10 C-TYPE PIC X.  
     10 C-NO PIC 9.  
     10 C-PRCE PIC X.  
 FD F-FILE LABEL RECORDS ARE OMITTED.  
 01 F-REC.  
 05 FILLER PIC X(132).

WORKING-STORAGE SECTION.

77 MMM PIC 9999.  
 77 YYYY PIC 99.  
 77 YYP PIC 99999.  
 77 YY PIC 99.  
 77 YYY PIC 9999.  
 77 R PIC 999.  
 77 C PIC 99.  
 77 I PIC 999.  
 77 J PIC 999.  
 77 K PIC 999.  
 77 L PIC 999.  
 77 M PIC 999.  
 77 O PIC 999.  
 77 P PIC 999.  
 77 N PIC 999.  
 77 LEV PIC 999.  
 01 ST PIC 999.

01 WASH PIC X(79) VALUE SPACES

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01 OPTION.
05 FILLER PIC X(41) VALUE
    "OPTION: U.UP D.DOWN L.LEFT R.RIGHT Q.QUIT".
05 FILLER PIC X(20) VALUE " P.PRINT N.NEW PAGE".
01 TOTAL-ROW.
10 A OCCURS 12 TIMES PIC 9(14).
01 KEY-X PIC X(5).
01 KEY-9 REDEFINES KEY-X PIC 9(5).
01 CKEY PIC 99.
01 ENDKEY PIC X(5).
01 NM PIC 99.
08 VALID-M VALUES ARE 1 THRU 12.
01 CHART.
05 RL OCCURS 100 TIMES PIC 9.
05 RT OCCURS 100 TIMES PIC X.
05 RH1 OCCURS 100 TIMES PIC X(35).
05 CM OCCURS 10 TIMES PIC X.
05 CN OCCURS 10 TIMES PIC 99.
05 CL OCCURS 10 TIMES PIC 9.
05 CT OCCURS 10 TIMES PIC X.
05 C-CHART.
05 CH1 OCCURS 10 TIMES.
    10 C1 PIC XXXX.
    10 C2 PIC XXXX.
05 CH2 OCCURS 10 TIMES.
    10 D1 PIC XXXX.
    10 D2 PIC XXXX.
01 HD7.
05 FILLER PIC X(36) VALUE " ROW " HEADS".
05 FILLER PIC X(5) VALUE " FOR ".
05 M1 PIC X(3) VALUE SPACES.
05 Y1 PIC 99.
05 FILLER PIC X(7) VALUE " UPTO ".
05 M2 PIC X(3) VALUE SPACES.
05 Y2 PIC 99.
05 FILLER PIC X(6) VALUE " FOR ".
05 M3 PIC X(4) VALUE SPACES.
05 Y3 PIC 99.
05 FILLER PIC X(7) VALUE " UPTO ".
05 M4 PIC X(3) VALUE SPACES.
05 Y4 PIC 99.
05 FILLER PIC X(8) VALUE " B.E.19".
05 Y5 PIC 99.
05 FILLER PIC X( ) VALUE " "

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05 Y6 PIC 99.
05 FILLER PIC X(9) VALUE " B.E FOR ".
05 M5 PIC XXX.
05 FILLER PIC X(25) VALUE
" DIFFERENCE % COLLECTED".

01 Q PIC 9(7).
01 Q1 REDEFINES Q PIC 2(7).
01 PD1.
05 FILLER PIC X(55) VALUE SPACES.
05 H1 PIC X(22) VALUE
"GOVERNMENT OF PAKISTAN".

01 HD2.
05 FILLER PIC X(54) VALUE SPACES.
05 H2 PIC X(26) VALUE
"CENTRAL BOARD OF REVENUE".

01 HD3.
05 FILLER PIC X(46).
05 H3 PIC X(40) VALUE
"(DIRECTORATE OF RESEARCH & STATISTICS)".

01 HD4.
05 FILLER PIC X(25) VALUE SPACES.
05 FILLER PIC X(29) VALUE
"COMPARISON STATEMENT SHOWING ".

05 NAM1 PIC X(15).
05 FILLER PIC X(12) VALUE " FOR & UPTO".
05 M11 PIC X(4).
05 FILLER PIC XX VALUE "19".
05 M22 PIC 99.
05 FILLER PIC X(22) VALUE "WITH BUDGET ESTIMATE".

01 HD6.
05 X1 PIC X(36).
05 X2 OCCURS 8 TIMES PIC X(12).

01 HD8.
05 FILLER PIC X(132) VALUE ALL "-".

01 ABC.
05 A1 PIC X(35).
05 A2 PIC X(97).

01 CHART-1.
05 ROW OCCURS 70 TIMES.
10 COL OCCURS 8 TIMES PIC 99(6)V9.

01 CHART-2 REDEFINES CHART-1.
05 D OCCURS 70 TIMES.
10 B OCCURS 8 TIMES PIC -----.

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05 FILLER PIC X(14) VALUE "FOR THE MONTH".
05 XY1 PIC XXX.
05 FILLER PIC XXXX VALUE " 19".
01 CHK PIC X.
08 VALID=C VALUES ARE "01" "02" "03" "04" "05" "06" "07" "08".
01 M-TABLE.
03 FILLER PIC X(18) VALUE "00000000000000000000".
05 FILLER PIC X(18) VALUE "00000000000000000000".
01 M-TAB REDEFINES M-TABLE.
05 MM OCCURS 12 TIMES PIC XX.

LINKAGE SECTION.
01 P-SWITCH PIC 9.
01 F-NAM PIC X(22).

PROCEDURE DIVISION USING P-SWITCH F-NAM.
BEGIN-1.
    DISPLAY " " ERASE
        "SPECIFY: YEAR 19" LINE 11 POSITION 11
        "MONTH" LINE 12 POSITION 19.
BEGIN-2.
    ACCEPT YY LINE 11 POSITION 28.
*
* COMPUTE THE MONTH NUMBER TO BE PRINTED.
*
BEGIN-3.
    ACCEPT MM LINE 12 POSITION 25.
    IF VALID=M NEXT SENTENCE ELSE
        DISPLAY " " LINE 12 POSITION 25.
    GO TO BEGIN-3.
    OPEN I-O R-FILE C-FILE X-FILE.
    IF MM < 7 COMPUTE MMM = MM + 6
        COMPUTE YYY = YY - 1
    ELSE COMPUTE MMM = MM - 6
        MOVE YY TO YYY.
BEGIN-4.
    COMPUTE YYP = YYY - 1 DIVIDE YYP BY 3 GIVING CKEY.
    COMPUTE YYP = (YYP - (CKEY * 3)) * 1200.
    DIVIDE YYY BY 3 GIVING CKEY.
    COMPUTE YYY = (YYY - (CKEY * 3)) * 1000.
    COMPUTE CKEY = P-SWITCH + P-SWITCH * 10.
    MOVE CKEY TO C-KEY.
    COMPUTE KEY-9 = (P-SWITCH - 1) * 3000.
    MOVE KEY-9 TO KEY-X.
    MOVE KEY-X TO R-KEY.
    ADD 1000 TO KEY-9

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MOVE KEY-9 TO KEY-X.  
 MOVE KEY-X TO ENDKEY.  
 READ C-FILE.  
 MOVE 1 TO I J.  
 PERFORM 010-CODE THRU 012-EXIT.  
 START R-FILE KEY IS > R-KEY INVALID KEY  
     DISPLAY "RECORD NOT FOUND".  
 MOVE 1 TO I MOVE 2 TO K.  
 PERFORM 020-RCODE THRU 020-RCODE-EXIT.  
 MOVE 6 TO LEV MOVE I TO R SUBTRACT 1 FROM R.  
 MOVE ZEROS TO TOTAL-ROW MOVE 8 TO C.  
 PERFORM 040-ROW-SUM 5 TIMES.  
 CLOSE R-FILE C-FILE M-FILE.  
 PERFORM 050-TRANSFER VARYING I FROM 1 BY 1 UNTIL I > R  
 AFTER J FROM 1 BY 1 UNTIL J > C.  
 PERFORM D5.  
 MOVE 1 TO I MOVE 2 TO J MOVE 3 TO K.  
 MOVE 1 TO N MOVE 16 TO N MOVE 4 TO L.  
 PERFORM D1.

\*  
 \* paragraph for checking the option for screen manipulation.  
 \*

D0.

DISPLAY " " LINE 24 POSITION 61.  
 ACCEPT CHK LINE 24 POSITION 61.  
 IF VALID-C NEXT SENTENCE ELSE GO TO D0.  
 IF CHK = "Q" GO TO D-EXIT.  
 IF CHK = "P" PERFORM 010-PRINT.  
 IF CHK = "N" GO TO D4.  
 IF CHK = "U" ADD 1 TO N ADD 1 TO M  
 ELSE IF CHK = "D" SUBTRACT 1 FROM N SUBTRACT 1 FROM M  
 ELSE IF CHK = "L" ADD 1 TO K ADD 1 TO L ADD 1 TO I  
 ADD 1 TO J  
 ELSE IF CHK = "R" SUBTRACT 1 FROM K SUBTRACT 1 FROM I  
 SUBTRACT 1 FROM L SUBTRACT 1 FROM J.  
 IF L > C OR M = 0 OR I = 0 OR N > R PERFORM D3.

\*  
 \* Displays header for chart and gives procedure for scrolling.  
 \*

D1.

DISPLAY "COMPARISON STATEMENT WITH BUDGET ANALYSIS FOR "  
 LINE 1 POSITION 13 F-NAM "For and upto " LINE 3  
 POSITION 60 MN (MMM) " 19" YY WASH LINE 4 POSITION 1  
 REVERSE "ROW HEADS"



" " " LINE 5 POSITION 36 REVERSE " " CH1 (I)  
 " " " " REVERSE " " CH1 (J) " " REVERSE " " CH1 (K)  
 " " REVERSE " " CH1 (L) " " LINE 6 POSITION 36  
 REVERSE " " CH2 (I) " " " REVERSE CH2 (J) " " " "  
 REVERSE CH2 (K) " " " REVERSE CH2 (L) WASH LINE 7  
 POSITION 1 REVERSE  
 I LINE 7 POSITION 42 J LINE 7 POSITION 52  
 K LINE 7 POSITION 62 L LINE 7 POSITION 72  
 OPTION LINE 24 POSITION 1 REVERSE.  
 MOVE B TO ST.  
 PERFORM D2 VARYING O FROM M BY 1 UNTIL O > N.  
 GO TO D2.

D2.

DISPLAY

RH1 (O) LINE ST POSITION 1 O REVERSE " " B (O, I)  
 " " " " REVERSE B (O, J) " " " " REVERSE B (O, K)  
 " " " " REVERSE B (O, L).  
 ADD 1 TO ST.

D3.

IF CHK = "U" SUBTRACT 1 FROM M SUBTRACT 1 FROM N  
 ELSE IF CHK = "D" ADD 1 TO M  
 ADD 1 TO L ELSE IF CHK = "L" SUBTRACT 1 FROM I  
 SUBTRACT 1 FROM K SUBTRACT 1 FROM L SUBTRACT 1 FROM J  
 ELSE IF CHK = "R" ADD 1 TO I ADD 1 TO J ADD 1 TO K  
 ADD 1 TO L.  
 GO TO D2.

D4.

IF N = R MOVE 1 TO M MOVE 16 TO N PERFORM D1.  
 ADD 16 TO M ADD 16 TO N.  
 IF N > R MOVE R TO N DISPLAY " " ERASE.  
 PERFORM D1.

D5.

MOVE "FOR" TO C1 (1) C1 (3) C2 (5).  
 MOVE MN (MMM) TO C2 (1) C2 (3).  
 MOVE "UPTO" TO C1 (2) C1 (4) C2 (6).  
 MOVE MN (MMM) TO C2 (2) C2 (4).  
 MOVE "B.E " TO C1 (5) C1 (6).  
 MOVE " DIFF" TO CH1 (7).  
 MOVE " % COL- " TO CH1 (8).  
 MOVE YY TO Y1 Y2 Y5  
 COMPUTE Y3 = Y1 - 1.  
 MOVE Y3 TO Y4.  
 COMPUTE Y4 = Y5 + 1

MOVE " 19" TO D1 (1) D1 (3).  
MOVE Y3 TO D2 (3) D2 (4).  
MOVE YY TO D2 (1) D2 (2).  
MOVE YY TO D1 (5) D2 (6).  
MOVE Y6 TO D2 (5).  
MOVE " 19" TO D1 (8).  
MOVE " 7# 2-5" TO CH2 (7).  
MOVE " LECTED" TO CH2 (8).

D-EXIT.

EXIT PROGRAM.

\*

\* Read the column code file.

\*

Ø10-CODE.

IF C-HEAD (I) = "FINISH" GO TO Ø12-EXIT.  
IF C-TYPE (I) = "S" ADD 1 TO I GO TO Ø10-CODE.  
MOVE C-NO (I) TO CN (J).  
MOVE C-MODE (I) TO CM (J).  
MOVE C-LEVEL (I) TO CL (J).  
MOVE C-TYPE (I) TO CT (J).  
MOVE J TO C.  
ADD 1 TO I ADD 1 TO C.  
IF J > 10 GO TO Ø12-EXIT.  
GO TO Ø10-CODE.

Ø12-EXIT.

EXIT.

\*

\* Read the row code file.

\*

Ø20-RCODE.

READ R-FILE NEXT RECORD AT END GO TO Ø20-RCODE-EXIT.  
IF R-KEY > ENDKEY GO TO Ø20-RCODE-EXIT.  
MOVE ZEROS TO ROW (I).  
MOVE R-LEVEL TO RL (I).  
MOVE R-TYPE TO RT (I).  
MOVE R-HEAD TO RH1 (I).  
IF R-TYPE = "S" OR R-TYPE = "G" OR R-TYPE = "T"  
    ADD 1 TO I GO TO Ø20-RCODE.  
MOVE R-KEY TO KEY-X.  
MOVE KEY-X TO KEY-9.  
ADD YYY TO KEY-9.  
MOVE KEY-9 TO M-KEY.  
READ M-FILE.

MOVE 1 TO I MOVE 2 TO K

```
PERFORM 030-RC VARYING O FROM 1 BY 1 UNTIL O > C.  
MOVE B-E TO COL (I, 5).  
COMPUTE COL (I, 6) = (COL (I, 5) / 12) * MMM.  
COMPUTE COL (I, 7) = COL (I, 2) - COL (I, 6).  
COMPUTE COL (I, 8) = (COL (I, 2) / COL (I, 5)) * 100.  
MOVE R-KEY TO KEY-X.  
MOVE KEY-X TO KEY-9.  
ADD YYP TO KEY-9.  
MOVE KEY-9 TO M-KEY.  
READ M-FILE.  
MOVE 3 TO J.  
MOVE 4 TO K.  
PERFORM 030-RC VARYING O FROM 1 BY 1 UNTIL O > C.  
ADD 1 TO I GO TO 020-RCODE.
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020-RCODE-EXIT.

EXIT.

030-RC.

MOVE CN (O) TO N.

IF CT (O) = "N"

ADD COL-HEAD (MMM, N) TO COL (I, J)

PERFORM 032-RC VARYING M FROM 1 BY 1 UNTIL

M > MMM

ELSE IF CT (O) = "R"

SUBTRACT COL-HEAD (MMM, N) FROM COL (I, J)

PERFORM 033-RC VARYING M FROM 1 BY 1 UNTIL

M > MMM.

032-RC.

ADD COL-HEAD (M, N) TO COL (I, K).

033-RC.

SUBTRACT COL-HEAD (M, N) FROM COL (I, K).

040-ROW-SUM.

SUBTRACT 1 FROM LEV.

PERFORM 042-RS VARYING I FROM 1 BY 1 UNTIL I > R.

042-RS.

IF RL (I) = LEV PERFORM 044-RS

ELSE

IF RL (I) < LEV MOVE ZEROS TO TOTAL-ROW.

044-RS.

IF RT (I) = "N" PERFORM 046-RS

VARYING J FROM 1 BY 1 UNTIL J > C

ELSE

IF RT (I) = "R" PERFORM 047-RS

VARYING J FROM 1 BY 1 UNTIL J > C

ELSE IF RT (I) = "G" PERFORM 048-RS



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        VARYING J FROM 1 BY 1 UNTIL J > C
ELSE    IF RT (I) = "I" PERFORM 048-RS
        VARYING J FROM 1 BY 1 UNTIL J > C
        MOVE "N" TO RT (I)
        SUBTRACT 1 FROM RL (I)
        MOVE ZEROS TO TOTAL-ROW.

046-RS.
        ADD COL (I, J) TO A (J).

047-RS.
        SUBTRACT COL (I, J) FROM A (J).

048-RS.
        MOVE A (J) TO COL (I, J).

050-TRANSFER.
        MOVE COL (I, J) TO B (I, J).

012-PRINT.
        OPEN OUTPUT P-FILE.
        MOVE SPACES TO P-REC.
        WRITE P-REC FROM HD1.
        MOVE SPACES TO P-REC.
        WRITE P-REC FROM HD2.
        MOVE SPACES TO P-REC.
        WRITE P-REC FROM HD3.
        MOVE MN (MMM) TO M11.
        MOVE YY TO M22.
        MOVE F-NAM TO NAM1.
        MOVE SPACES TO P-REC.
        WRITE P-REC FROM HD4 AFTER 2.
        WRITE P-REC FROM HD8 AFTER 2.
        MOVE MN (MMM) TO M1 M2 M3 M4 M5.
        WRITE P-REC FROM HD7.
        WRITE P-REC FROM HD8.
        MOVE SPACES TO HD6.
        PERFORM 017-P VARYING P FROM 1 BY 1 UNTIL P = 9.
        MOVE " 7=2-6" TO X2 (7).
        WRITE P-REC FROM HD6.
        WRITE P-REC FROM HD8.
        PERFORM 013-P VARYING P FROM 1 BY 1 UNTIL P = R.
        WRITE P-REC FROM HD8.
        CLOSE P-FILE.

013-P.
        MOVE RH1 (P) TO X1.
        PERFORM 015-P VARYING Q FROM 1 BY 1 UNTIL Q = 9.
        WRITE P-REC FROM HD6.

```

MOVE B (P, Q) TO X2 (Q).

Ø17-P.

MOVE P TO Q.

MOVE Q TO Q1.

MOVE Q1 TO X2 (P).

A>

IDENTIFICATION DIVISION.

\*  
\*  
\*  
\*

\* This program gives individual totals for row-heads  
\* and column-heads.

PROGRAM IS TOTAL.

AUTHOR.

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.

SOURCE-COMPUTER. TANDY-1200.

OBJECT-COMPUTER. TANDY-1200.

INPUT-OUTPUT SECTION.

FILE-CONTROL.

SELECT R-FILE ASSIGN TO RANDOM "RFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS R-KEY.

SELECT M-FILE ASSIGN TO RANDOM "MFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS M-KEY.

SELECT C-FILE ASSIGN TO RANDOM "CFILE"

ORGANIZATION IS INDEXED

ACCESS IS DYNAMIC

RECORD KEY IS C-KEY.

SELECT P-FILE ASSIGN TO PRINT "PRINTER".

DATA DIVISION.

FILE SECTION



FD R-FILE

LABEL RECORDS ARE STANDARD.

01 R-REC.

05 R-KEY PIC X(5).

05 R-HEAD PIC X(33).

05 R-LEVEL PIC 9.

05 R-TYPE PIC X.

05 T-UNIT PIC X.

FD M-FILE

LABEL RECORDS ARE STANDARD.

01 M-REC.

05 M-KEY PIC X(5).

05 MTH OCCURS 12 TIMES.

10 COL-HEAD OCCURS 10 TIMES PIC 9(6)V9.

05 B-E PIC 9(6)V9.

FD C-FILE

LABEL RECORDS ARE STANDARD.

01 C-REC.

05 C-KEY PIC XX.

05 NO-C PIC 99.

05 COLUMN OCCURS 13 TIMES.

10 C-HEAD PIC X(5).

10 C-LEVEL PIC 9.

10 C-TYPE PIC X.

10 C-NO PIC 9.

10 C-MODE PIC X.

FD P-FILE

LABEL RECORDS ARE OMITTED.

01 P-REC.

05 FILLER PIC X(132).

WORKING-STORAGE SECTION.

77 YY PIC 99.

77 YYY PIC 9999.

77 R PIC 999.

77 UR PIC 999.

77 I PIC 999.

77 J PIC 999.

77 M PIC 99.

01 KEY-X PIC XXXXX.

01 KEY-9 REDEFINES KEY-X PIC 99999.

01 CKEY PIC 99.

01 MM PIC 99.

88 VALID-M VALUES ARE 1 THRU 12.

01 CHK PIC XXXXXX

```

01  MMM          PIC 99.
01  N            PIC 99.
01  LEV         PIC 9.
01  P           PIC 99.
01  ENDKEY      PIC XXXXX.
01  CHK3        PIC X.
      BB VALID-2 VALUES ARE "Q" "S" "A".
01  ST          PIC 99.
01  FT          PIC S9(6)V9.
01  UT          PIC S9(6)V9.
01  TOT-N.
      05 F OCCURS 3 TIMES PIC S9(6)V9.
      05 U OCCURS 3 TIMES PIC S9(6)V9.
      05 B OCCURS 3 TIMES PIC S9(6)V9.
      05 BU OCCURS 3 TIMES PIC S9(6)V9.
      05 PER OCCURS 3 TIMES PIC S9(6)V9.
01  TOT-E REDEFINES TOT-N.
      05 FE OCCURS 3 TIMES PIC -(6).-.
      05 UE OCCURS 3 TIMES PIC -(6).-.
      05 BE OCCURS 3 TIMES PIC -(6).-.
      05 BUE OCCURS 3 TIMES PIC -(6).-.
      05 PERE OCCURS 3 TIMES PIC -(6).-.
01  M-TABLE.
      05 FILLER PIC X(18) VALUE IS "JULAUUGSEPOCTNOVDEC".
      05 FILLER PIC X(18) VALUE IS "JANFEBMARAPRMAYJUN".
01  M-TAB REDEFINES M-TABLE.
      05 MNTH OCCURS 12 TIMES PIC XXX.
01  CHART1.
      05 L OCCURS 100 TIMES PIC 9.
      05 T OCCURS 100 TIMES PIC X.
      05 K OCCURS 100 TIMES PIC 99999.
      05 H OCCURS 100 TIMES PIC X(35).
01  LINE1       PIC X(80) VALUE ALL "-".
01  CHK1        PIC X.
      BB VALID-1 VALUES ARE "R" "C" "Q".
01  CHK2        PIC X.
BB VALID-2 VALUES ARE "N" "K".
01  EES.
      05 TK OCCURS 3 TIMES PIC 99999.

```

LINKAGE SECTION.

```

01  P-SWITCH    PIC 9.
01  F-NAM       PIC X(20).
PROCEDURE DIVISION USING P-SWITCH F-NAM.
BEGIN-T

```

DISPLAY " " ERASE

"1.Row or column access R/C " LINE 11 POSITION 20.

"SPECIFY: 2.Current year 19 -19 " LINE 12 POSITION 11

"3.Month (previous or current ) " LINE 13 POSITION 20

ACCEPT CHK1 LINE 11 POSITION 48.

IF NOT VALID-1 GO TO BEGIN-1.

BEGIN-2.

ACCEPT YY LINE 12 POSITION 38

YYY LINE 12 POSITION 43.

BEGIN-3.

ACCEPT MM LINE 13 POSITION 51.

IF NOT VALID-M DISPLAY " " LINE 13 POSITION 50

GO TO BEGIN-3.

OPEN I-O R-FILE C-FILE M-FILE.

IF MM < 7 COMPUTE MMM = MM + 6

ELSE COMPUTE MMM = MM - 6.

COMPUTE CKEY = P-SWITCH + P-SWITCH \* 10

MOVE CKEY TO C-KEY.

READ C-FILE COMPUTE KEY-9 = (P-SWITCH - 1) \* 3000.

MOVE KEY-9 TO R-KEY ADD 1000 TO KEY-9

MOVE KEY-9 TO ENDKEY.

PERFORM 040 KEY-COMPUTE VARYING I FROM 1 BY 1

UNTIL I > 3.

MOVE YY TO YYY.

DISPLAY " " ERASE.

IF CHK1 = "C" GO TO BEGIN-6.

START R-FILE KEY IS > R-KEY INVALID KEY GO TO BEGIN-1.

READ R-FILE NEXT RECORD AT END MOVE "99999" TO R-KEY.

MOVE 0 TO I.

PERFORM 010-READROW UNTIL R-KEY > ENDKEY.

COMPUTE R = I + 1 MOVE "T" TO T (R).

MOVE "GRAND TOTAL" TO H (R) MOVE 1 TO L (R).

BEGIN-4.

MOVE 23 TO N, MOVE 1 TO M.

PERFORM 020-DISPLAY THRU 026-D.

MOVE L (I) TO LEV MOVE ZEROS TO TOT-N

PERFORM 030-SUM VARYING J FROM 1 BY 1 UNTIL J > 3.

PERFORM 050-PERCENT VARYING J FROM 1 BY 1 UNTIL J > 3.

MOVE YY TO M COMPUTE N = M + 1.

DISPLAY " " ERASE

"GOVERNMENT OF PAKISTAN" LINE 3 POSITION 30

"CENTRAL BOARD OF REVENUE" LINE 4 POSITION 29

F-NAM LINE 6 POSITION 1

"STATEMENT SHOWING A COMPLETE 3 YEAR RECORD OF"



H (1) LINE 7 POSITION 1  
 "FOR & UPTO" LINE 8 POSITION 1  
 "RS. IN MILLION" LINE 9 POSITION 65  
 LINE1 LINE 10 POSITION 1  
 "PERIOD " LINE 11 POSITION 6 "!" REVERSE  
 "ACTUAL" LINE 11 POSITION 24  
 "!" LINE 11 POSITION 38 REVERSE  
 " BUDGET ESTIMATE " "!" REVERSE " % COLLECTED"  
 " FOR " LINE 12 POSITION 17  
 " UPTO " " YEARLY " " UPTO " LINE1  
 LINE 13 POSITION 1  
 "OPTION:-Q:QUIT S:START A:ACCESS MORE"  
 LINE 24 POSITION 1 REVERSE.

MOVE 14 TO P.

PERFORM 060-DL VARYING J FROM 1 BY 1 UNTIL J > 3.

PERFORM 062-DL VARYING P FROM 12 BY 1 UNTIL P > 19.

BEGIN-5.

ACCEPT CHK3 LINE 24 POSITION 38.

IF NOT VALID-3 GO TO BEGIN-5.

IF CHK3 = "Q" GO TO END-PARA

ELSE IF CHK3 = "S" CLOSE C-FILE S-FILE W-FILE

GO TO BEGIN-1 ELSE GO TO BEGIN-4.

BEGIN-6.

DISPLAY " " ERASE.

MOVE SPACES TO CHK MOVE ZEROS TO TOT-N MOVE 5 TO J.

MOVE 0 TO P MOVE 1 TO I.

PERFORM 070-COL UNTIL CHK = "FINISH".

DISPLAY " ENTER THE KEY " LINE 18 POSITION 5.

ACCEPT J LINE 19 POSITION 5.

IF J NOT NUMERIC OR J > P GO TO BEGIN-6.

MOVE K (J) TO R.

PERFORM 072-C VARYING J FROM 1 BY 1 UNTIL J > 3.

DISPLAY " " ERASE

"GOVERNMENT OF PAKISTAN" LINE 3 POSITION 30

"CENTRAL BOARD OF REVENUE" LINE 4 POSITION 29

F-NAM LINE 6 POSITION 1

"STATEMENT SHOWING A COMPLETE 3 YEAR RECORD OF"

LINE 7 POSITION 1

C-HEAD (R) LINE 8 POSITION 1

" FOR & UPTO MONTH " MNTH. (MMM)

"RS. IN MILLION" LINE 9 POSITION 65

LINE1 LINE 10 POSITION 1

"PERIOD FOR THE MONTH "

"UPTO THE MONTH"

LINE1

LINE 12 POSITION 1

"OPTION:-Q:QUIT S:START A:ACCESS MORE"

LINE 24 POSITION 1 REVERSE.

MOVE VY TO \* COMPUTE N = M + 1.

MOVE 13 TO P.

PERFORM 07B-C VARYING J FROM 1 BY 1 UNTIL J &gt; 3.

BEGIN-7.

ACCEPT CHK3 LINE 24 POSITION 38.

IF NOT VALID-3 GO TO BEGIN-7.

IF CHK3 = "S" CLOSE C-FILE R-FILE M-FILE

GO TO BEGIN-1

ELSE IF CHK3 = "A" GO TO BEGIN-6.

END-PARA.

CLOSE C-FILE R-FILE M-FILE.

END-EXIT.

EXIT PROGRAM.

010-READROW.

IF R-TYPE = "N" OR R-TYPE = "S" OR R-TYPE = "R"

ADD 1 TO I

MOVE T-KEY TO KEY-R

MOVE KEY-X TO KEY-R

MOVE KEY-9 TO R(I)

MOVE R-HEAD TO H(I)

MOVE R-TYPE TO T (I) MOVE R-LEVEL TO L (I).

READ R-FILE NEXT RECORD AT END MOVE "99999" TO ENDKEY.

020-DISPLAY.

DISPLAY " " ERASE.

MOVE 1 TO ST.

PERFORM 02B-D VARYING I FROM M BY 1 UNTIL I &gt; N.

022-D.

DISPLAY " " LINE 13 POSITION 61

" SELECT N/K " LINE 13 POSITION 50

"N: NEXT PAGE" LINE 14 POSITION 51

"K: KEY SELECT" LINE 15 POSITION 51.

ACCEPT CHK2 LINE 13 POSITION 63.

IF NOT VALID-2 GO TO 022-D.

IF CHK2 = "K" GO TO 024-D.

IF N = R MOVE 1 TO M MOVE 23 TO N

ELSE ADD 23 TO M ADD 23 TO N.

IF N &gt; R MOVE R TO N.

GO TO 020-DISPLAY.



DISPLAY " " LINE 17 POSITION 63

"SPECIFY KEY: " LINE 17 POSITION 50.

ACCEPT I LINE 17 POSITION 63.

IF I NOT NUMERIC OR I > R GO TO Z24-D.

026-D.

EXIT.

028-D.

ADD 1 TO ST.

DISPLAY I LINE ST POSITION 2

H (I) LINE ST POSITION 7.

030-SUM.

COMPUTE YYY = YY - J + 1.

COMPUTE CKEY = YYY / 3.

COMPUTE YYY = (YYY - (CKEY \* 3) ) \* 1000.

MOVE 0 TO CKEY MOVE 1 TO N.

IF T (I) = "S" ADD 1 TO N COMPUTE UR = R + 1

PERFORM 032-S THRU 032-EXIT UNTIL CKEY = 1

ELSE IF T (I) = "T" MOVE TK (J) TO M-KEY

READ M-FILE

PERFORM 033-S THRU 032-EXIT

ELSE PERFORM 032-S THRU 032-EXIT.

031-S.

IF T (N) = "N" OR T (N) = "R" NEXT SENTENCE

ELSE ADD 1 TO N GO TO 032-EXIT.

MOVE K (N) TO KEY-9 ADD YYY TO KEY-9.

MOVE KEY-9 TO M-KEY READ M-FILE.

033-S.

MOVE SPACES TO CHK MOVE 1 TO P MOVE ZEROS TO  
FT UT.

PERFORM 034-S UNTIL CHK = "FINISH".

IF (T(N) = "T" OR T(N) = "N") ADD UT TO

U (J) ADD FT TO F (J) ADD B-E TO B (J).

IF T (N) = "R" COMPUTE F(J) = F(J) - FT

COMPUTE U (J) = U (J) - UT COMPUTE B (J) = B (J) - B-E.

ADD 1 TO N.

IF L (N) = LEV OR L (N) < LEV OR N > UR MOVE 1 TO CKEY.

032-EXIT.

EXIT.

034-S.

IF C-TYPE (P) = "N" COMPUTE FT = FT + COL-HEAD (MMM, P)

PERFORM 036-ADD VARYING M FROM 1 BY 1 UNTIL M > MMM

ELSE

IF C-TYPE (P) = "R" SUBTRACT COL-HEAD (MMM, P) FROM FT

PERFORM 038-SUB VARYING M FROM 1 BY 1 UNTIL M < MMM





VARYING M FROM 1 BY 1 UNTIL M > MMM ELSE IF C-LEVEL (P)  
> LEV AND C-TYPE (P) = "R" SUBTRACT COL-HEAD (MMM, P)  
FROM F (J) PERFORM 076-SUB VARYING M FROM 1 BY 1 UNTIL  
M > MMM.

IF C-LEVEL (P) < LEV OR P > 1 MOVE 1 TO CKEY.

074-ADD.

ADD COL-HEAD (M, P) TO U (J).

076-SUB.

SUBTRACT COL-HEAD (M, P) FROM U (J).

078-C.

DISPLAY "YEAR 19" LINE P POSITION 10 M "-19" N FE (J)  
LINE P POSITION 38 VE (J) LINE P POSITION 62 ADD 1 TO P.  
DISPLAY LINE1 LINE P POSITION 1 ADD 1 TO P.  
SUBTRACT 1 FROM M SUBTRACT 1 FROM N.

A>

IDENTIFICATION DIVISION.  
PROGRAM-ID. GRAPHS.

- \* This program gives Graphics analysis in the form
- \* of a Bar Chart.
- \* Length of the bars along X-axis represent amount
- \* and Time in months along Y-axis.
- \*

ENVIRONMENT DIVISION.  
CONFIGURATION SECTION.  
SOURCE-COMPUTER. TANDY-1200.  
OBJECT-COMPUTER. TANDY-1200.  
INPUT-OUTPUT SECTION.  
FILE-CONTROL.

SELECT M-FILE ASSIGN TO RANDOM "MFILE"  
ORGANIZATION IS INDEXED  
ACCESS IS DYNAMIC  
RECORD KEY IS M-KEY.  
SELECT C-FILE ASSIGN TO RANDOM "CFILE"  
ORGANIZATION IS INDEXED  
ACCESS IS DYNAMIC  
RECORD KEY IS C-KEY.

DATA DIVISION.  
FILE SECTION.

FD M-FILE LABEL RECORDS ARE STANDARD.  
01 M-REC.  
05 M-KEY PIC XXXXX.  
05 MTH OCCURS 12 TIMES.  
10 COL-HEAD OCCURS 10 TIMES PIC 9(6)V9.  
05 B-E PIC S9(6)V9.

FD C-FILE LABEL RECORDS ARE STANDARD.  
01 C-REC.  
05 C-KEY PIC XX.  
05 NO-C PIC 99.  
05 COLMN OCCURS 13 TIMES.  
10 C-HEAD PIC X(9).  
10 C-LEVEL PIC 9.  
10 C-TYPE PIC X.  
10 C-NO PIC 9.  
10 C-MODE PIC X.

WORKING-STORAGE SECTION.



\* YY and MM are used to store year and month respectively

\* I, J and K are subscripts; BIG stores the biggest value

\* TOTAL-ARRAY is used to store month's total.

\*

```
77 YY PIC 99.
77 YYY PIC 99.
77 MMM PIC 99.
77 K9 PIC 99.
77 E-O-COL PIC X(8) VALUE SPACES.
77 J PIC 99.
77 I PIC 99.
77 SCALE PIC -(8).-.
77 K PIC 99.
77 BIG PIC S9(8)V9.
01 MNTH-TABLE.
05 FILLER PIC X(18) VALUE "JUL AUG SEP OCT NOV DEC".
05 FILLER PIC X(18) VALUE "JAN FEB MAR APR MAY JUN".
01 M-TABLE REDEFINES MNTH-TABLE.
05 MNTH OCCURS 12 TIMES PIC XXX.
01 TOTAL-ARRAY.
05 T1.
05 T2 OCCURS 12 TIMES PIC S9(8)V9.
05 T2 REDEFINES T1.
05 T3 OCCURS 12 TIMES PIC -(8).-.
05 T3 OCCURS 12 TIMES PIC 99.
01 CHK PIC X.
05 VALID-CHK VALUES ARE "S" "Q".
01 MM PIC 99.
05 VALID-M VALUES ARE 1 THRU 12.
01 KEY-9 PIC 99999.
```

LINKAGE SECTION.

```
01 P-SWITCH PIC 9.
01 F-NAM PIC X(20).
```

PROCEDURE DIVISION USING P-SWITCH F-NAM.

\*

\* Accept year and month for which graph is to be made.

\*

BEGIN-1.

DISPLAY " " ERASE

"SPECIFY: YEAR 19 -19 " LINE 11 POSITION 11

"MONTH" LINE 12 POSITION 20.

ACCEPT YY LINE 11 POSITION 27

PROMPT YYY LINE 11 POSITION 33 PROMPT.

IF YY NOT NUMERIC GO TO BEGIN-1

\*  
\* Compute the key for the record of grand total in M-FILE.  
\*

BEGIN-2.

ACCEPT MM LINE 12 POSITION 27 PROMPT.  
IF NOT VALID-M GO TO BEGIN-2.  
IF MM < 7 COMPUTE MMM = 8 + MM  
ELSE COMPUTE MMM = MM - 8.  
DIVIDE YY BY 3 GIVING YYY.  
COMPUTE KEY-9 = (P-SWITCH - 1) \* 3000.  
COMPUTE KEY-9 = KEY-9 - 5 + (YY - (YYY \* 3) ) \* 1000.  
COMPUTE K9 = P-SWITCH + P-SWITCH \* 10.  
OPEN I-O M-FILE C-FILE.  
MOVE KEY-9 TO M-KEY.  
READ M-FILE INVALID KEY DISPLAY "NO GRAND TOTAL"  
LINE 24  
CLOSE M-FILE C-FILE GO TO BEGIN-1.  
MOVE K9 TO C-KEY.  
READ C-FILE.  
MOVE 1 TO J MOVE ZEROS TO T1 BIG

\*  
\* Perform different procedures as described below.  
\*

MOVE SPACES TO E-O-COL.  
PERFORM 01-COLSUM UNTIL E-O-COL = "FINISH"  
CLOSE M-FILE C-FILE.  
PERFORM 07-SEARCH-BIG VARYING I FROM 1 BY 1  
UNTIL I > MMM.  
PERFORM 09-COMPUTE VARYING I FROM 1 BY 1 UNTIL  
I > MMM.  
MOVE 9 TO J.  
DIVIDE BIG BY 10 GIVING BIG.  
MOVE BIG TO SCALE.

\*  
\* Arrange screen to make graph.  
\*

PERFORM 011-FIELD VARYING I FROM 1 BY 1 UNTIL I > 12.  
PERFORM 013-BASE1 VARYING I FROM 11 BY 1 UNTIL I > 70.  
MOVE 0 TO J.  
PERFORM 015-BASE2 VARYING I FROM 10 BY 10 UNTIL I > 70.  
COMPUTE YYY = YY + 1.  
DISPLAY "GRAPH SHOWING MONTHLY COLLECTION OF"

LINE 2 POSITION 23

E-NAM

LINE 3 POSITION 17



"FOR THE YEAR 19 -19 "	LINE 4 POSITION 30
YY	LINE 4 POSITION 45
YYY	LINE 4 POSITION 50
"APPROX SCALE ALONG X-AXIS"	LINE 6 POSITION 56
"10 DIV = "	LINE 7 POSITION 56
SCALE	LINE 7 POSITION 65
"Mill.Rs"	LINE 7 POSITION 74
"OPTION: Q:QUIT, S:START "	LINE 24 POSITION 51.

MOVE 9 TO K9.  
PERFORM 017-GRAPH VARYING I FROM 1 BY 1 UNTIL I > MMM.

BEGIN-3.

ACCEPT CHK LINE 24 POSITION 76 PROMPT BLINK.  
IF NOT VALID-CHK DISPLAY " " LINE 24 POSITION 76.  
IF CHK = "S" GO TO BEGIN-1.

END-1.

EXIT PROGRAM.

\*

\* Take column sum or calculate total of each month.

\*

01-COLSUM.

IF C-TYPE (J) = "N" PERFORM 03-ADDITION VARYING  
I FROM 1 BY 1 UNTIL I > MMM  
ELSE IF C-TYPE (J) = "R" PERFORM 05-SUBTRACT  
VARYING I FROM 1 BY 1 UNTIL I > MMM.  
ADD 1 TO J.  
MOVE C-HEAD (J) TO E-0-COL.

03-ADDITION.

COMPUTE A (I) = A (I) + COL-HEAD (I, J).

05-SUBTRACT.

COMPUTE A (I) = A (I) - COL-HEAD (I, J).

07-SEARCH-BIG.

IF A (I) > BIG MOVE A (I) TO BIG.

09-COMPUTE.

COMPUTE T3 (I) = (A (I) / BIG) \* 60.

MOVE A (I) TO B (I).

011-FIELD.

DISPLAY MNTH (I) LINE J POSITION 5 " -" " " REVERSE  
"  
"  
" " B (I) ADD 1 TO J.

013-BASE1.

DISPLAY " " LINE 20 POSITION I.

015-BASE2.

DISPLAY " " LINE 21 POSITION I J LINE 22 POSITION I.

ADD 10 TO J



017-GRAPH.

MOVE T3 (1) TO J ADD 10 TO J.

PERFORM 019-G VARYING K FROM 11 BY 1 UNTIL  $K > J$ .

ADD 1 TO K9.

019-G.

DISPLAY " " LINE K9 POSITION K REVERSE.

A>

E\_  
OUTPUTS

COL

FOR THE MONTH AUG 1984

ROW-HEADS

1. Vegitable Products.

UPTO THE M

2. Beverages.

UPTO THE M

3. Sugar.

UPTO THE M

4. Tobbaco.

UPTO THE M

5. Cement.

UPTO THE M

6. Natural Gas.

UPTO THE M

7. Crude Oil.

UPTO THE M

8. P.O.L. Products.

UPTO THE M

9. Paints & Varnishes.

UPTO THE M

10. Cosmetics.



- UPTO THE M
- 11. Soap, Detergent & Deter
- UPTO THE M
- 12. Soda Ash.
- UPTO THE M
- 13. Tyre tubes.
- UPTO THE M
- 14. Bank cheques.
- UPTO THE M
- 15. Cotton yarn.
- UPTO THE M
- 16. Man-made yarn.
- UPTO THE M
- 17. Wollen fabrics.
- UPTO THE M
- 18. Wollen carpets.
- UPTO THE M
- 19. Services, Hotels.
- UPTO THE M
- 20. Other items.

i) Salt.

UPTO THE M

ii) Paper board.

UPTO THE M

iii) Metal containers.

UPTO THE M

iv) Knitting yarn.

UPTO THE M

v) Miscellaneous.

UPTO THE M

vi) Arrears.

UPTO THE M

vii) Total for other items

UPTO THE M

TOTAL GROSS.

UPTO THE M

REFUNDS.

UPTO THE M

TOTAL NET.

UPTO THE M

-----

ROW HEADS

1. Vegetable Products.
2. Beverages.
3. Sugar.
4. Tobacco.
5. Cement.
6. Natural Gas.
7. Crude Oil.
8. P.O.L. Products.
9. Paints & Varnishes.
10. Cosmetics.
11. Soap, Detergent & Perfumery.
12. Soda Ash.
13. Tire tubes.
14. Bank cheques.
15. Cotton yarn.
16. Man-made yarn.
17. Woollen fabrics.
18. Woollen carpets.
19. Services, Hotels.
20. Other items.
  - i) Salt.
  - ii) Paper board.



ROW HEADS

- I. Sales Tax on Excesses
  - 1. Gross Collections
  - 2. Refunds & Credits
  - 3. Rebates etc.
  - 4. Net Collections
- II. Sales Tax on Excesses
  - IIA. Non Exemptible Goods.
    - 1. Gas Appliances.
    - 2. Glass Bottles
    - 3. Paper etc.
    - 4. Net Collections
  - IIIB. Exempted Goods.
    - 1. Ceramic Goods.
    - 2. Electrical Goods.
      - i. wireless Receiving
      - ii. Aircondition & etc
      - iii. Other electrical Goods
      - iv. Total Electrical Goods
    - 3. Plastic Goods.
    - 4. Net Collection (IIIB)
  - IIIC. Net Collection (IIA + IIIB)
- III. Sales Tax on Non Excess

1. Ammonia Gas
2. Auto Parts.
3. Biscuits Bakery & Conf
4. Biscuits
5. Gross
6. Refunds.
7. Net Collection

GROSS COLLECTION

REFUNDS.

FOR THE MONTH AUG 1984

ROW-HEADS

8

I. Sales Tax on imports.

1. Gross Collection.

UPTO THE M

2. Refunds & Drawbacks

UPTO THE M

3. Rebates etc.

UPTO THE M

4. Net Collections

UPTO THE M

II. Sales Tax on Excisable

IIA. Non Excisable Goods.

1. Gas Appliances.

UPTO THE M

2. Glass products.

UPTO THE M

3. Paper and Board.





