```
MATMUL    COBOL      FILE NAME/TYPE= /COBOL/MATH/MATMUL.COB
MATMUL    COBOL
MATMUL    COBOL      CREATION DATE/TIME= 20-11-2025 14:10:53
MATMUL    COBOL
MATMUL    COBOL      FILE= 001   PAGES= 0002   LINES= 000104
MATMUL    COBOL
MATMUL    COBOL      SYSTEM= LINUX(6.16.8+KALI-AMD64)
MATMUL    COBOL
MATMUL    COBOL      SYSID= ACID   SYSUSER= ACID
MATMUL    COBOL
MATMUL    COBOL      FORM= SMALL
MATMUL    COBOL
MATMUL    COBOL      CHAR= FONTMONO
MATMUL    COBOL
MATMUL    COBOL      PRT1403 VERSION= 1.5.PRE-RELEASE
```

```
              CCCCCCC   OOOOOOO  BBBBBBBB   OOOOOOO  LL
             CCCCCCCCC OOOOOOOOO BBBBBBBBB OOOOOOOOO LL
             CC     CC OO     OO BB     BB OO     OO LL
             CC        OO     OO BB     BB OO     OO LL
             CC        OO     OO BBBBBBBB  OO     OO LL
             CC        OO     OO BBBBBBBB  OO     OO LL
             CC        OO     OO BB     BB OO     OO LL
             CC     CC OO     OO BB     BB OO     OO LL
             CCCCCCCCC OOOOOOOOO BBBBBBBBB OOOOOOOOO LLLLLLLLL
              CCCCCCC   OOOOOOO  BBBBBBBB   OOOOOO  LLLLLLLLL

          M       M    AAA    TTTTTTTT  M       M UU     UU LL
          MM     MM   AAAAA   TTTTTTTT  MM     MM UU     UU LL
          MMM   MMM  AA   AA     TT     MMM   MMM UU     UU LL
          MMMM MMMM AA     AA    TT     MMMM MMMM UU     UU LL
          MM MMM MM AA     AA    TT     MM MMM MM UU     UU LL
          MM  M  MM AAAAAAAAA    TT     MM  M  MM UU     UU LL
          MM     MM AAAAAAAAA    TT     MM     MM UU     UU LL
          MM     MM AA     AA    TT     MM     MM UU     UU LL
          MM     MM AA     AA    TT     MM     MM UUUUUUUUU LLLLLLLLL
          MM     MM AA     AA    TT     MM     MM  UUUUUUU  LLLLLLLLL

                      00000     00000       1
                     0000000   0000000     11
                    00     00 00     00   111
                    00     00 00     00    11
                    00     00 00     00    11
                    00     00 00     00    11
                    00     00 00     00    11
                    00     00 00     00    11
                     0000000   0000000   111111
                      00000     00000    111111
```

```
000001          IDENTIFICATION DIVISION.
000002          PROGRAM-ID. MatrixCalculation.
000003
000004          ENVIRONMENT DIVISION.
000005          DATA DIVISION.
000006
000007          WORKING-STORAGE SECTION.
000008
000009          01  M-SIZE          PIC 9(4) COMP VALUE 400.
000010
000011          01  RESULT1         PIC S9(14) COMP VALUE 0.
000012          01  RESULT2         PIC S9(14) COMP VALUE 0.
000013
000014          01  TIME1           COMP-2 VALUE 0.
000015          01  TIME2           COMP-2 VALUE 0.
000016
000017          01  M1.
000018              05  M1-ROW OCCURS 400 TIMES.
000019                  10  M1-ELEMENTS OCCURS 400 TIMES PIC S9(10) COMP.
000020          01  M2.
000021              05  M2-ROW OCCURS 400 TIMES.
000022                  10  M2-ELEMENTS OCCURS 400 TIMES PIC S9(10) COMP.
000023          01  M3.
000024              05  M3-ROW OCCURS 400 TIMES.
000025                  10  M3-ELEMENTS OCCURS 400 TIMES PIC S9(10) COMP.
000026
000027          01  I               PIC S9(10) COMP.
000028          01  J               PIC S9(10) COMP.
000029          01  K               PIC S9(10) COMP.
000030
000031          01  START-TIME      PIC S9(10) COMP.
000032          01  END-TIME        PIC S9(10) COMP.
000033
000034          01  TEMP            PIC S9(10) COMP.
000035
000036          01  RESULT1_TXT     PIC 9(14).
000037          01  RESULT2_TXT     PIC 9(14).
000038          01  TIME1_TXT       PIC 9(3).9(6).
000039          01  TIME2_TXT       PIC 9(3).9(6).
000040
000041          PROCEDURE DIVISION.
000042
000043        * ------------------------------------------------
000044
000045              ACCEPT START-TIME FROM TIME.
000046
000047              MOVE 0 TO RESULT1.
000048
000049              PERFORM VARYING I FROM 1 BY 1 UNTIL 100 < I
000050                  PERFORM VARYING J FROM 1 BY 1 UNTIL 1000000 < J
000051                      ADD J TO RESULT1
000052                  END-PERFORM
000053              END-PERFORM.
000054
000055              ACCEPT END-TIME FROM TIME.
000056              COMPUTE TIME1 = (END-TIME - START-TIME) / 100.
000057
000058        * ------------------------------------------------
000059
000060              ACCEPT START-TIME FROM TIME.
```

```
000061
000062             PERFORM VARYING I FROM 1 BY 1 UNTIL M-SIZE < I
000063                 PERFORM VARYING J FROM 1 BY 1 UNTIL M-SIZE < J
000064                     ADD I TO J GIVING M1-ELEMENTS(I, J)
000065                     ADD I TO J GIVING M2-ELEMENTS(I, J)
000066                 END-PERFORM
000067             END-PERFORM.
000068
000069             PERFORM VARYING I FROM 1 BY 1 UNTIL M-SIZE < I
000070                 PERFORM VARYING J FROM 1 BY 1 UNTIL M-SIZE < J
000071                     MOVE 0 TO M3-ELEMENTS(I, J)
000072                     PERFORM VARYING K FROM 1 BY 1 UNTIL M-SIZE < K
000073                         MULTIPLY M1-ELEMENTS(I, K) BY M2-ELEMENTS(K, J)
000074                             GIVING TEMP
000075                         ADD TEMP TO M3-ELEMENTS(I, J)
000076                     END-PERFORM
000077                 END-PERFORM
000078             END-PERFORM.
000079
000080             MOVE 0 TO RESULT2.
000081
000082             PERFORM VARYING I FROM 1 BY 1 UNTIL M-SIZE < I
000083                 PERFORM VARYING J FROM 1 BY 1 UNTIL M-SIZE < J
000084                     ADD M3-ELEMENTS(I, J) TO RESULT2
000085                 END-PERFORM
000086             END-PERFORM.
000087
000088             ACCEPT END-TIME FROM TIME.
000089             COMPUTE TIME2 = (END-TIME - START-TIME) / 100.
000090
000091         * --------------------------------------------------
000092
000093             MOVE RESULT1 TO RESULT1_TXT
000094             MOVE RESULT2 TO RESULT2_TXT
000095             MOVE TIME1   TO TIME1_TXT
000096             MOVE TIME2   TO TIME2_TXT
000097
000098             DISPLAY 'COBOL   : Result= ' RESULT1_TXT
000099                     ', Time= ' TIME1_TXT ' sec'
000100                     ', Result= ' RESULT2_TXT
000101                     ', Time= ' TIME2_TXT ' sec'.
000102
000103          STOP RUN.
000104
```