

```

PPPPPPPPPP RRRRRRRRRR IIIIIIIIII MM MM CCCCCCCCCC 000000000000 BBBB BBBB 3333333333
PPPPPPPPPP RRRRRRRRRR IIIIIIIIII MMM MMM CCCCCCCCCC 000000000000 BBBB BBBB 3333333333
PP PP PP RR RR II MM MM MM MM CC CC 00 00 BB BB 33 33
PP PP PP RR RR II MM MM MM MM CC 00 00 BB BB 33 33
PPPPPPPPPP RRRRRRRRRR II MM MM MM CC 00 00 BBBB BBBB 3333
PPPPPPPPPP RRRRRRRRRR II MM MM CC 00 00 BBBB BBBB 3333
PP RR RR II MM MM CC 00 00 BB BB 33 33
PP RR RR II MM MM CC 00 00 BB BB 33 33
PP RR RR II MM MM CC CC 00 00 BB BB 33 33
PP RR RR IIIIIIIIII MM MM CCCCCCCCCC 000000000000 BBBB BBBB 3333333333
PP RR RR IIIIIIIIII MM MM CCCCCCCCCC 000000000000 BBBB BBBB 3333333333

```

```

JJJJJJJJJJ 444 EEEEEEEEEEE
JJJJJJJJJJ 4444 EEEEEEEEEEE
JJ 44 44 EE
JJ 44 44 EE
JJ 44 44 EE
JJ 44444444444 EEEEEEE
JJ 44444444444 EEEEEEE
JJ 44 EE
JJ JJ 44 EE
JJ JJ 44 EE
JJJJJJJJ 44 EEEEEEEEEEE
JJJJJJ 44 EEEEEEEEEEE

```

|       |       |     |   |          |                    |      |         |    |    |     |    |          |     |      |     |   |       |       |
|-------|-------|-----|---|----------|--------------------|------|---------|----|----|-----|----|----------|-----|------|-----|---|-------|-------|
| ****E | START | JOB | 4 | PRIMCOB3 | Eratosthenes Sieve | ROOM | 5.33.04 | PM | 16 | JUN | 25 | PRINTER4 | SYS | PI5B | JOB | 4 | START | E**** |
| ****E | START | JOB | 4 | PRIMCOB3 | Eratosthenes Sieve | ROOM | 5.33.04 | PM | 16 | JUN | 25 | PRINTER4 | SYS | PI5B | JOB | 4 | START | E**** |
| ****E | START | JOB | 4 | PRIMCOB3 | Eratosthenes Sieve | ROOM | 5.33.04 | PM | 16 | JUN | 25 | PRINTER4 | SYS | PI5B | JOB | 4 | START | E**** |
| ****E | START | JOB | 4 | PRIMCOB3 | Eratosthenes Sieve | ROOM | 5.33.04 | PM | 16 | JUN | 25 | PRINTER4 | SYS | PI5B | JOB | 4 | START | E**** |

## J E S 2 J O B L O G

```
17.33.03 JOB      4 $HASP373 PRIMCOB3 STARTED - INIT 1 - CLASS A - SYS PI5B
17.33.03 JOB      4 IEF403I PRIMCOB3 - STARTED - TIME=17.33.03
17.33.04 JOB      4 IEFACTRT - Stepname Procstep Program Retcode
17.33.04 JOB      4 PRIMCOB3 ARRAY ASM IFOX00 RC= 0000
17.33.04 JOB      4 PRIMCOB3 PRIMES COB IKFCBL00 RC= 0000
17.33.04 JOB      4 PRIMCOB3 PRIMES GO LOADER RC= 0000
17.33.04 JOB      4 IEF404I PRIMCOB3 - ENDED - TIME=17.33.04
17.33.04 JOB      4 $HASP395 PRIMCOB3 ENDED
```

## ----- JES2 JOB STATISTICS -----

16 JUN 25 JOB EXECUTION DATE

282 CARDS READ

370 SYSOUT PRINT RECORDS

0 SYSOUT PUNCH RECORDS

0.00 MINUTES EXECUTION TIME

```

1  //PRIMCOB3 JOB (COBOL),                                JOB      4
   //          'Eratosthenes Sieve',
   //          CLASS=A,
   //          MSGCLASS=E,
   //          REGION=8M,TIME=1440,
   //          MSGLEVEL=(1,1),
   //          USER=SCOTT,PASSWORD=          GENERATED BY IKJEFF10
*****
***
*** Name: SYS2.JCLLIB(PRIMCOB3)
***
*** Desc: Sieve of Eratosthenes programmed in COBOL.
***       All prime numbers up to the value entered via
***       //GO.SYSIN DD are computed. An assembler subroutine
***       is used to overcome COBOL 32767 array index
***       and 131068 array length limitations.
***
*****
2  //ARRAY EXEC ASMFC,PARM.ASM=(OBJ,NODECK,NOESD,NOLIST,NOXREF)
3  XXASMFC  PROC  MAC='SYS1.MACLIB',MAC1='SYS1.MACLIB',      00000100
   XX       MAC2='SYS1.MACLIB',MAC3='SYS1.MACLIB',SOUT='*'    00000200
4  XXASM    EXEC  PGM=IFOX00,REGION=128K                      00000300
5  XXSYSLIB DD   DSN=&MAC,DISP=SHR                             00000400
6  XX       DD   DSN=&MAC1,DISP=SHR                            00000500
7  XX       DD   DSN=&MAC2,DISP=SHR                            00000600
8  XX       DD   DSN=&MAC3,DISP=SHR                            00000700
9  XXSYSUT1 DD   DSN=&&SYSUT1,UNIT=SYSSQ,SPACE=(1700,(600,100)), 00000800
   XX       SEP=(SYSLIB)                                     00000900
10 XXSYSUT2 DD   DSN=&&SYSUT2,UNIT=SYSSQ,SPACE=(1700,(300,50)), 00001000
   XX       SEP=(SYSLIB,SYSUT1)                             00001100
11 XXSYSUT3 DD   DSN=&&SYSUT3,UNIT=SYSSQ,SPACE=(1700,(300,50)) 00001200
12 XXSYSPRINT DD  SYSOUT=&SOUT,DCB=BLKSIZE=1089              00001300
13 XXSYSPUNCH DD  SYSOUT=B                                   00001400
14 //ASM.SYSIN DD *
15 //ASM.SYSGO DD UNIT=VIO,SPACE=(800,(1,1)),DISP=(,PASS),
   //          DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),DSN=&&INIPRIME
16 //PRIMES EXEC COBUCG,
   //          PARM.COB='FLAGW,LOAD,SUPMAP,SIZE=2048K,BUF=1024K'
17 XXCOBUCG PROC SOUT='*'                                     00000100
18 XXCOB EXEC PGM=IKFCBL00,                                   00000200
   XX       PARM='LOAD,SIZE=2048K,BUF=1024K'                 00000300
19 XXSYSPRINT DD SYSOUT=&SOUT                                  00000400
20 XXSYSUT1 DD UNIT=SYSDA,SPACE=(460,(700,100))              00000500
21 XXSYSUT2 DD UNIT=SYSDA,SPACE=(460,(700,100))              00000600
22 XXSYSUT3 DD UNIT=SYSDA,SPACE=(460,(700,100))              00000700
23 XXSYSUT4 DD UNIT=SYSDA,SPACE=(460,(700,100))              00000800
24 XXSYSLIN DD DSN=&LOADSET,DISP=(MOD,PASS),                  00000900
   XX       UNIT=SYSDA,SPACE=(80,(500,100))                 00001000
25 //COB.SYSPUNCH DD DUMMY
26 //COB.SYSIN DD *
27 //COB.SYSLIB DD DSN=SYS1.COBLIB,DISP=SHR
28 XXGO EXEC PGM=LOADER,PARM='MAP,LET',COND=(5,LT,COB)      00001100
29 //GO.SYSLIN DD
   X/SYSLIN DD DSN=&*.COB.SYSLIN,DISP=(OLD,DELETE)           00001200
   //          DD DSN=&&INIPRIME,DISP=(OLD,DELETE)
30 //          DD DSN=&&INIPRIME,DISP=(OLD,DELETE)
31 XXSYSLOUT DD SYSOUT=&SOUT                                   00001300
32 XXSYSLIB DD DSN=SYS1.COBLIB,DISP=SHR                      00001400
33 //GO.SYSOUT DD SYSOUT=*,DCB=(RECFM=FBA,LRECL=161,BLKSIZE=16100)
34 //GO.SYSIN DD *

```

## STMT NO. MESSAGE

```
5 IEF653I SUBSTITUTION JCL - DSN=SYS1.MACLIB,DISP=SHR
6 IEF653I SUBSTITUTION JCL - DSN=SYS1.MACLIB,DISP=SHR
7 IEF653I SUBSTITUTION JCL - DSN=SYS1.MACLIB,DISP=SHR
8 IEF653I SUBSTITUTION JCL - DSN=SYS1.MACLIB,DISP=SHR
12 IEF653I SUBSTITUTION JCL - SYSOUT=*,DCB=BLKSIZE=1089
19 IEF653I SUBSTITUTION JCL - SYSOUT=*
31 IEF653I SUBSTITUTION JCL - SYSOUT=*
IEF236I ALLOC. FOR PRIMCOB3 ASM ARRAY
IEF237I 390 ALLOCATED TO SYSLIB
IEF237I 390 ALLOCATED TO
IEF237I 390 ALLOCATED TO
IEF237I 390 ALLOCATED TO
IEF237I 292 ALLOCATED TO SYSUT1
IEF237I 290 ALLOCATED TO SYSUT2
IEF237I 293 ALLOCATED TO SYSUT3
IEF237I JES2 ALLOCATED TO SYSPRINT
IEF237I JES2 ALLOCATED TO SYSPUNCH
IEF237I JES2 ALLOCATED TO SYSIN
IEF237I VIO ALLOCATED TO SYSGO
IEF142I PRIMCOB3 ASM ARRAY - STEP WAS EXECUTED - COND CODE 0000
IEF285I SYS1.MACLIB KEPT *-----15
IEF285I VOL SER NOS= TK5RES.
IEF285I SYS1.MACLIB KEPT *-----0
IEF285I VOL SER NOS= TK5RES.
IEF285I SYS1.MACLIB KEPT *-----0
IEF285I VOL SER NOS= TK5RES.
IEF285I SYS1.MACLIB KEPT *-----0
IEF285I VOL SER NOS= TK5RES.
IEF285I SYS25167.T173303.RA000.PRIMCOB3.SYSUT1 DELETED *-----49
IEF285I VOL SER NOS= WORK03.
IEF285I SYS25167.T173303.RA000.PRIMCOB3.SYSUT2 DELETED *-----9
IEF285I VOL SER NOS= WORK01.
IEF285I SYS25167.T173303.RA000.PRIMCOB3.SYSUT3 DELETED *-----8
IEF285I VOL SER NOS= WORK04.
IEF285I JES2.JOB00004.S00104 SYSOUT
IEF285I JES2.JOB00004.S00105 SYSOUT
IEF285I JES2.JOB00004.SI0101 SYSIN
IEF285I SYS25167.T173303.RA000.PRIMCOB3.INIPRIME PASSED *-----1
IEF373I STEP /ASM / START 25167.1733
IEF374I STEP /ASM / STOP 25167.1733 CPU 0MIN 00.10SEC SRB 0MIN 00.01SEC VIRT 2116K SYS 264K
*****
* 1. Jobstep of job: PRIMCOB3 Stepname: ASM Program name: IFOX00 Executed on 16.06.25 from 17.33.03 to 17.33.04 *
* elapsed time 00:00:00,20 CPU-Identifier: PI5B Page-in: 0 *
* CPU time 00:00:00,11 Virtual Storage used: 2116K Page-out: 0 *
* corr. CPU: 00:00:00,11 CPU time has been corrected by 1 / 1,0 multiplier *
*
* I/O Operation *
* Number of records read via DD * or DD DATA: 111 *
* 390.....15 390.....0 390.....0 390.....0 292.....49 290.....9 293.....8 DMY.....0 DMY.....0 DMY.....0 *
* FFF.....1 *
*
* Charge for step (w/o SYSOUT): 0,18 *
*****
IEF236I ALLOC. FOR PRIMCOB3 COB PRIMES
IEF237I JES2 ALLOCATED TO SYSPRINT
IEF237I 293 ALLOCATED TO SYSUT1
IEF237I 290 ALLOCATED TO SYSUT2
IEF237I 292 ALLOCATED TO SYSUT3
IEF237I 291 ALLOCATED TO SYSUT4
```

```

IEF237I 293 ALLOCATED TO SYSLIN
IEF237I DMY ALLOCATED TO SYSPUNCH
IEF237I JES2 ALLOCATED TO SYSIN
IEF237I 390 ALLOCATED TO SYSLIB
IEF142I PRIMCOB3 COB PRIMES - STEP WAS EXECUTED - COND CODE 0000
IEF285I JES2.JOB00004.S00106 SYSOUT
IEF285I SYS25167.T173303.RA000.PRIMCOB3.R00000001 DELETED *-----6
IEF285I VOL SER NOS= WORK04.
IEF285I SYS25167.T173303.RA000.PRIMCOB3.R00000002 DELETED *-----6
IEF285I VOL SER NOS= WORK01.
IEF285I SYS25167.T173303.RA000.PRIMCOB3.R00000003 DELETED *-----9
IEF285I VOL SER NOS= WORK03.
IEF285I SYS25167.T173303.RA000.PRIMCOB3.R00000004 DELETED *-----3
IEF285I VOL SER NOS= WORK02.
IEF285I SYS25167.T173303.RA000.PRIMCOB3.LOADSET PASSED *-----76
IEF285I VOL SER NOS= WORK04.
IEF285I JES2.JOB00004.SI0102 SYSIN
IEF285I SYS1.COBLIB KEPT *-----0
IEF285I VOL SER NOS= TK5RES.
IEF373I STEP /COB / START 25167.1733
IEF374I STEP /COB / STOP 25167.1733 CPU 0MIN 00.07SEC SRB 0MIN 00.02SEC VIRT 2076K SYS 232K
*****
* 2. Jobstep of job: PRIMCOB3 Stepname: COB Program name: IKFCBL00 Executed on 16.06.25 from 17.33.04 to 17.33.04 *
* elapsed time 00:00:00,20 CPU-Identifier: PI5B Page-in: 0 *
* CPU time 00:00:00,09 Virtual Storage used: 2076K Page-out: 0 *
* corr. CPU: 00:00:00,09 CPU time has been corrected by 1 / 1,0 multiplier *
*
* I/O Operation *
* Number of records read via DD * or DD DATA: 136 *
* DMY.....0 293.....6 290.....6 292.....9 291.....3 293.....76 DMY.....0 DMY.....0 390.....0 *
*
* Charge for step (w/o SYSOUT): 0,15 *
*****
IEF236I ALLOC. FOR PRIMCOB3 GO PRIMES
IEF237I 293 ALLOCATED TO SYSLIN
IEF237I VIO ALLOCATED TO
IEF237I JES2 ALLOCATED TO SYSLOUT
IEF237I 390 ALLOCATED TO SYSLIB
IEF237I JES2 ALLOCATED TO SYSOUT
IEF237I JES2 ALLOCATED TO SYSIN
IEF142I PRIMCOB3 GO PRIMES - STEP WAS EXECUTED - COND CODE 0000
IEF285I SYS25167.T173303.RA000.PRIMCOB3.LOADSET DELETED *-----77
IEF285I VOL SER NOS= WORK04.
IEF285I SYS25167.T173303.RA000.PRIMCOB3.INIPRIME DELETED *-----2
IEF285I JES2.JOB00004.S00107 SYSOUT
IEF285I SYS1.COBLIB KEPT *-----29
IEF285I VOL SER NOS= TK5RES.
IEF285I JES2.JOB00004.S00108 SYSOUT
IEF285I JES2.JOB00004.SI0103 SYSIN
IEF373I STEP /GO / START 25167.1733
IEF374I STEP /GO / STOP 25167.1733 CPU 0MIN 00.02SEC SRB 0MIN 00.01SEC VIRT 332K SYS 324K
*****
* 3. Jobstep of job: PRIMCOB3 Stepname: GO Program name: LOADER Executed on 16.06.25 from 17.33.04 to 17.33.04 *
* elapsed time 00:00:00,06 CPU-Identifier: PI5B Page-in: 0 *
* CPU time 00:00:00,03 Virtual Storage used: 332K Page-out: 0 *
* corr. CPU: 00:00:00,03 CPU time has been corrected by 1 / 1,0 multiplier *
*
* I/O Operation *
* Number of records read via DD * or DD DATA: 1 *
* 293.....77 FFF.....2 DMY.....0 390.....29 DMY.....0 DMY.....0 *

```

\* Charge for step (w/o SYSOUT): 0,05 \*

\*\*\*\*\*

IEF375I JOB /PRIMCOB3/ START 25167.1733

IEF376I JOB /PRIMCOB3/ STOP 25167.1733 CPU 0MIN 00.19SEC SRB 0MIN 00.04SEC

1

```

00001      10 * //////////////////////////////////////////// PRIME
00002      20 * // Name: Peter M. Maurer PRIME
00003      30 * // Program: Sieve of Eratosthenes PRIME
00004      40 * // Due: Never PRIME
00005      50 * // Language: COBOL PRIME
00006      60 * // PRIME
00007      70 * // Changes: PRIME
00008      80 * // - Juergen Winkelmann, 2014/10/25, o adaption to IBM OS COBOL PRIME
00009      90 * // o read limit from SYSIN PRIME
00010     100 * // o n**2 (sqrt) shortcut PRIME
00011     110 * // o skip even numbers PRIME
00012     120 * // o compact output format PRIME
00013     130 * // o dynamic prime flags PRIME
00014     140 * //////////////////////////////////////////// PRIME
00015     150 *** PRIME
00016     160 *** PRIME
00017     170 *** PRIME
00018     180 IDENTIFICATION DIVISION. PRIME
00019     190 PROGRAM-ID. 'PRIMES'. PRIME
00020     200 *** PRIME
00021     210 *** PRIME
00022     220 *** PRIME
00023     230 ENVIRONMENT DIVISION. PRIME
00024     240 ** PRIME
00025     250 ** PRIME
00026     260 CONFIGURATION SECTION. PRIME
00027     270 SOURCE-COMPUTER. IBM-360. PRIME
00028     280 OBJECT-COMPUTER. IBM-360. PRIME
00029     290 ** PRIME
00030     300 ** PRIME
00031     310 INPUT-OUTPUT SECTION. PRIME
00032     320 FILE-CONTROL. PRIME
00033     330 SELECT PRIMES-SYSIN PRIME
00034     340 ASSIGN TO UT-S-SYSIN. PRIME
00035     350 *** PRIME
00036     360 *** PRIME
00037     370 *** PRIME
00038     380 DATA DIVISION. PRIME
00039     390 ** PRIME
00040     400 ** PRIME
00041     410 FILE SECTION. PRIME
00042     420 FD PRIMES-SYSIN PRIME
00043     430 RECORDING MODE IS F PRIME
00044     440 RECORD CONTAINS 80 CHARACTERS PRIME
00045     450 BLOCK CONTAINS 1 RECORDS PRIME
00046     460 LABEL RECORDS ARE OMITTED PRIME
00047     470 DATA RECORD IS PRIMES-SYSIN-RECORD. PRIME
00048     480 01 PRIMES-SYSIN-RECORD. PRIME
00049     490 02 PRIMES-SYSIN-NUMBER PIC 99999999 OCCURS 10. PRIME
00050     500 ** PRIME
00051     510 ** PRIME
00052     520 WORKING-STORAGE SECTION. PRIME
00053     530 77 I PIC 99999999 COMP VALUE 1. PRIME
00054     540 77 J PIC 99999999 COMP. PRIME

```

|       |      |                                                              |       |
|-------|------|--------------------------------------------------------------|-------|
| 00055 | 550  | 77 K PIC 99999999 COMP VALUE 1.                              | PRIME |
| 00056 | 560  | 77 N PIC 99999999 COMP.                                      | PRIME |
| 00057 | 570  | 77 N-2 PIC 99999999 COMP.                                    | PRIME |
| 00058 | 580  | 77 SQRTN PIC 99999999 COMP.                                  | PRIME |
| 00059 | 590  | 77 PRODUCT PIC 99999999 COMP.                                | PRIME |
| 00060 | 600  | 77 ISPRIME PIC 9 VALUE 1 COMP.                               | PRIME |
| 00061 | 610  | 77 NOTPRIME PIC 9 VALUE 0 COMP.                              | PRIME |
| 00062 | 620  | 01 BLANK-LINE PIC A(160) VALUE ' '.                          | PRIME |
| 00063 | 630  | 01 OUT-INTEGERS.                                             | PRIME |
| 00064 | 640  | 02 SHOWIT PIC ZZZZZZZZ OCCURS 20.                            | PRIME |
| 00065 | 650  | 01 OUT REDEFINES OUT-INTEGERS.                               | PRIME |
| 00066 | 660  | 02 OUT-LINE PIC X(160).                                      | PRIME |
| 00067 | 670  | ***                                                          | PRIME |
| 00068 | 680  | ***                                                          | PRIME |
| 00069 | 690  | ***                                                          | PRIME |
| 00070 | 700  | PROCEDURE DIVISION.                                          | PRIME |
| 00071 | 710  | **                                                           | PRIME |
| 00072 | 720  | **                                                           | PRIME |
| 00073 | 730  | MAIN-PART.                                                   | PRIME |
| 00074 | 740  | OPEN INPUT PRIMES-SYSIN.                                     | PRIME |
| 00075 | 750  | READ PRIMES-SYSIN AT END DISPLAY '** EOF on SYSIN **'.       | PRIME |
| 00076 | 760  | MOVE PRIMES-SYSIN-NUMBER (1) TO N.                           | PRIME |
| 00077 | 770  | CLOSE PRIMES-SYSIN.                                          | PRIME |
| 00078 | 780  | SUBTRACT 2 FROM N GIVING N-2.                                | PRIME |
| 00079 | 790  | *                                                            | PRIME |
| 00080 | 800  | PERFORM NEXT-SQUARE UNTIL SQRTN GREATER N.                   | PRIME |
| 00081 | 810  | MOVE I TO SQRTN.                                             | PRIME |
| 00082 | 820  | *                                                            | PRIME |
| 00083 | 830  | MOVE 3 TO I.                                                 | PRIME |
| 00084 | 840  | CALL 'INIPRIME' USING N.                                     | PRIME |
| 00085 | 850  | PERFORM CHECK-NUMBER UNTIL I GREATER SQRTN OR EQUAL SQRTN.   | PRIME |
| 00086 | 860  | *                                                            | PRIME |
| 00087 | 870  | MOVE 3 TO I.                                                 | PRIME |
| 00088 | 880  | MOVE 2 TO J.                                                 | PRIME |
| 00089 | 890  | MOVE J TO SHOWIT (K).                                        | PRIME |
| 00090 | 900  | PERFORM PRINT UNTIL I GREATER N.                             | PRIME |
| 00091 | 910  | CALL 'RLSPRIME'                                              | PRIME |
| 00092 | 920  | *                                                            | PRIME |
| 00093 | 930  | MOVE K TO SHOWIT (1).                                        | PRIME |
| 00094 | 940  | MOVE N TO SHOWIT (2).                                        | PRIME |
| 00095 | 950  | DISPLAY ' '.                                                 | PRIME |
| 00096 | 960  | DISPLAY SHOWIT (1), ' primes up to ', SHOWIT (2), ' found.'. | PRIME |
| 00097 | 970  | STOP RUN.                                                    | PRIME |
| 00098 | 980  | **                                                           | PRIME |
| 00099 | 990  | **                                                           | PRIME |
| 00100 | 1000 | CHECK-NUMBER.                                                | PRIME |
| 00101 | 1010 | PERFORM ADVANCE UNTIL I GREATER THAN SQRTN OR EQUAL TO SQRT  | PRIME |
| 00102 | 1020 | - N OR ISPRIME EQUAL TO 1.                                   | PRIME |
| 00103 | 1030 | IF ISPRIME EQUAL TO 1                                        | PRIME |
| 00104 | 1040 | ADD I I GIVING J                                             | PRIME |
| 00105 | 1050 | MULTIPLY I BY I GIVING PRODUCT                               | PRIME |
| 00106 | 1060 | PERFORM CROSS-OUT UNTIL PRODUCT GREATER THAN N.              | PRIME |
| 00107 | 1070 | MOVE 0 TO ISPRIME.                                           | PRIME |
| 00108 | 1080 | **                                                           | PRIME |
| 00109 | 1090 | **                                                           | PRIME |
| 00110 | 1100 | ADVANCE.                                                     | PRIME |
| 00111 | 1110 | ADD 2 TO I.                                                  | PRIME |

|       |      |                                                      |       |
|-------|------|------------------------------------------------------|-------|
| 00112 | 1120 | CALL 'ISPRIME' USING I ISPRIME.                      | PRIME |
| 00113 | 1130 | **                                                   | PRIME |
| 00114 | 1140 | **                                                   | PRIME |
| 00115 | 1150 | CROSS-OUT.                                           | PRIME |
| 00116 | 1160 | CALL 'SETPRIME' USING PRODUCT NOTPRIME.              | PRIME |
| 00117 | 1170 | ADD J TO PRODUCT.                                    | PRIME |
| 00118 | 1180 | **                                                   | PRIME |
| 00119 | 1190 | **                                                   | PRIME |
| 00120 | 1200 | NEXT-SQUARE.                                         | PRIME |
| 00121 | 1210 | ADD 1 TO I.                                          | PRIME |
| 00122 | 1220 | MULTIPLY I BY I GIVING SQRTN.                        | PRIME |
| 00123 | 1230 | **                                                   | PRIME |
| 00124 | 1240 | **                                                   | PRIME |
| 00125 | 1250 | PRINT.                                               | PRIME |
| 00126 | 1260 | CALL 'ISPRIME' USING I ISPRIME.                      | PRIME |
| 00127 | 1270 | IF ISPRIME EQUAL TO 1                                | PRIME |
| 00128 | 1280 | MOVE I TO SHOWIT (J)                                 | PRIME |
| 00129 | 1290 | ADD 1 TO K                                           | PRIME |
| 00130 | 1300 | ADD 1 TO J                                           | PRIME |
| 00131 | 1310 | IF J GREATER 20                                      | PRIME |
| 00132 | 1320 | DISPLAY OUT-LINE                                     | PRIME |
| 00133 | 1330 | MOVE BLANK-LINE TO OUT-LINE                          | PRIME |
| 00134 | 1340 | MOVE 1 TO J.                                         | PRIME |
| 00135 | 1350 | IF I GREATER N-2 AND J NOT EQUAL 1 DISPLAY OUT-LINE. | PRIME |
| 00136 | 1360 | ADD 2 TO I.                                          | PRIME |

```
*STATISTICS*      SOURCE RECORDS =   136      DATA DIVISION STATEMENTS =    17      PROCEDURE DIVISION STATEMENTS =    45
*OPTIONS IN EFFECT*  SIZE = 2097152  BUF = 1048576  LINECNT = 57  SPACE1, FLAGW,   SEQ,   SOURCE
*OPTIONS IN EFFECT*  NODMAP, NOPMAP, NOCLIST,   SUPMAP, NOXREF,   LOAD, NODECK, APOST, NOTRUNC, NOLIB, NOVERB
*OPTIONS IN EFFECT*      ZWB
```

## VS LOADER

OPTIONS USED - PRINT,MAP,LET,CALL,RES,NOTERM,SIZE=307200,NAME=\*\*GO

| NAME      | TYPE | ADDR  | NAME      | TYPE | ADDR  | NAME      | TYPE | ADDR  | NAME      | TYPE | ADDR  | NAME      | TYPE | ADDR  |
|-----------|------|-------|-----------|------|-------|-----------|------|-------|-----------|------|-------|-----------|------|-------|
| PRIMES    | SD   | AC010 | INIPRIME  | SD   | ACCA0 | RLSPRIME  | LR   | ACD6A | SETPRIME  | LR   | ACD2A | ISPRIME   | LR   | ACCEC |
| ILBOSTP0* | SD   | ACE08 | ILBOSTP1* | LR   | ACE1E | ILBODSP0* | SD   | ACE40 | ILBOBID0* | SD   | AD540 | ILBOBID2* | LR   | AD54C |
| ILBOBID1* | LR   | AD560 | ILBOIDB0* | SD   | AD5A8 | ILBOIDB1* | LR   | AD5C4 |           |      |       |           |      |       |

TOTAL LENGTH 1600  
ENTRY ADDRESS AC010

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 2    | 3    | 5    | 7    | 11   | 13   | 17   | 19   | 23   | 29   | 31   | 37   | 41   | 43   | 47   | 53   |
| 73   | 79   | 83   | 89   | 97   | 101  | 103  | 107  | 109  | 113  | 127  | 131  | 137  | 139  | 149  | 151  |
| 179  | 181  | 191  | 193  | 197  | 199  | 211  | 223  | 227  | 229  | 233  | 239  | 241  | 251  | 257  | 263  |
| 283  | 293  | 307  | 311  | 313  | 317  | 331  | 337  | 347  | 349  | 353  | 359  | 367  | 373  | 379  | 383  |
| 419  | 421  | 431  | 433  | 439  | 443  | 449  | 457  | 461  | 463  | 467  | 479  | 487  | 491  | 499  | 503  |
| 547  | 557  | 563  | 569  | 571  | 577  | 587  | 593  | 599  | 601  | 607  | 613  | 617  | 619  | 631  | 641  |
| 661  | 673  | 677  | 683  | 691  | 701  | 709  | 719  | 727  | 733  | 739  | 743  | 751  | 757  | 761  | 769  |
| 811  | 821  | 823  | 827  | 829  | 839  | 853  | 857  | 859  | 863  | 877  | 881  | 883  | 887  | 907  | 911  |
| 947  | 953  | 967  | 971  | 977  | 983  | 991  | 997  | 1009 | 1013 | 1019 | 1021 | 1031 | 1033 | 1039 | 1049 |
| 1087 | 1091 | 1093 | 1097 | 1103 | 1109 | 1117 | 1123 | 1129 | 1151 | 1153 | 1163 | 1171 | 1181 | 1187 | 1193 |
| 1229 | 1231 | 1237 | 1249 | 1259 | 1277 | 1279 | 1283 | 1289 | 1291 | 1297 | 1301 | 1303 | 1307 | 1319 | 1321 |
| 1381 | 1399 | 1409 | 1423 | 1427 | 1429 | 1433 | 1439 | 1447 | 1451 | 1453 | 1459 | 1471 | 1481 | 1483 | 1487 |
| 1523 | 1531 | 1543 | 1549 | 1553 | 1559 | 1567 | 1571 | 1579 | 1583 | 1597 | 1601 | 1607 | 1609 | 1613 | 1619 |
| 1663 | 1667 | 1669 | 1693 | 1697 | 1699 | 1709 | 1721 | 1723 | 1733 | 1741 | 1747 | 1753 | 1759 | 1777 | 1783 |
| 1823 | 1831 | 1847 | 1861 | 1867 | 1871 | 1873 | 1877 | 1879 | 1889 | 1901 | 1907 | 1913 | 1931 | 1933 | 1949 |
| 1993 | 1997 | 1999 |      |      |      |      |      |      |      |      |      |      |      |      |      |

303 primes up to 2000 found.

```

PPPPPPPPPP RRRRRRRRRR IIIIIIIIII MM MM CCCCCCCCCC 000000000000 BBBB BBBB 3333333333
PPPPPPPPPP RRRRRRRRRR IIIIIIIIII MMM MMM CCCCCCCCCC 000000000000 BBBB BBBB 3333333333
PP PP PP RR RR II MM MM MM MM CC CC 00 00 BB BB 33 33
PP PP PP RR RR II MM MM MM MM CC 00 00 BB BB 33 33
PPPPPPPPPP RRRRRRRRRR II MM MM MM CC 00 00 BBBB BBBB 3333
PPPPPPPPPP RRRRRRRRRR II MM MM MM CC 00 00 BBBB BBBB 3333
PP RR RR RR II MM MM CC 00 00 BB BB BB 33
PP RR RR RR II MM MM CC 00 00 BB BB BB 33
PP RR RR RR II MM MM CC CC 00 00 BB BB BB 33
PP RR RR IIIIIIIIII MM MM CCCCCCCCCC 000000000000 BBBB BBBB 3333333333
PP RR RR IIIIIIIIII MM MM CCCCCCCCCC 000000000000 BBBB BBBB 3333333333

```

```

JJJJJJJJJ 444 EEEEEEEEEEE
JJJJJJJJJ 4444 EEEEEEEEEEE
JJ 44 44 EE
JJ 44 44 EE
JJ 44 44 EE
JJ 44444444444 EEEEEEE
JJ 44444444444 EEEEEEE
JJ 44 EE
JJ JJ 44 EE
JJ JJ 44 EE
JJJJJJJ 44 EEEEEEEEEEE
JJJJJ 44 EEEEEEEEEEE

```

```

****E END JOB 4 PRIMCOB3 Eratosthenes Sieve ROOM 5.33.04 PM 16 JUN 25 PRINTER4 SYS PI5B JOB 4 END E****
****E END JOB 4 PRIMCOB3 Eratosthenes Sieve ROOM 5.33.04 PM 16 JUN 25 PRINTER4 SYS PI5B JOB 4 END E****
****E END JOB 4 PRIMCOB3 Eratosthenes Sieve ROOM 5.33.04 PM 16 JUN 25 PRINTER4 SYS PI5B JOB 4 END E****
****E END JOB 4 PRIMCOB3 Eratosthenes Sieve ROOM 5.33.04 PM 16 JUN 25 PRINTER4 SYS PI5B JOB 4 END E****

```