```
--------------------------------------------------------------------------------
Assembly listing for file prime.sasm
--------------------------------------------------------------------------------

SrcLin -Addr- Op Oprnd   --- Source line ---
     1                   # ############################################################################
     2                   #
     3                   # NAME       : PRIME.SASM
     4                   # AUTHOR     : GERARD WASSINK
     5                   # DATE       : JUNE 2019
     6                   # PURPOSE    : FINDING PRIMES FROM 1 TO 255
     7                   #
     8                   # ############################################################################
     9                   #
    10 000000 20 01      START      LIA     X'01                # LOAD 1
    11 000002 28 5A                 STA     NUMBER              #   INTO NUMBER
    12                   #
    13                   #                                      # LOOP NUMBER = 1 TO 255
    14                   #
    15 000004 20 01      NLOOP      LIA     X'01                # ASSUME THIS ONE
    16 000006 28 5D                 STA     PRIME               #   IS A PRIME
    17                   #
    18 000008 51 5A                 LMB     NUMBER              # TRACK NUMBER IN B REGISTER
    19                   #
    20 00000A 20 02                 LIA     X'02                # LOAD 2
    21 00000C 28 5B                 STA     COUNT               #   INTO COUNT
    22                   #
    23                   #                                      # LOOP COUNT = 2 TO NUMBER
    24                   #
    25 00000E 52 5B      CLOOP      LMC     COUNT               # TRACK COUNT IN C REGISTER
    26                   #
    27 000010 50 5A                 LMA     NUMBER              # CALC =
    28 000012 E9 5B                 SBM     COUNT               #   NUMBER -
    29 000014 28 5C                 STA     CALC                #     COUNT
    30                   #
    31 000016 11 26                 JC      ATEND               # CALC < 0 ? : ATEND
    32 000018 12 26                 JZ      ATEND               # CALC = 0 ? : ATEND
    33                   #
    34 00001A 50 5C      SUBTR      LMA     CALC                # CALC =
    35 00001C E9 5B                 SBM     COUNT               #   CALC -
    36 00001E 28 5C                 STA     CALC                #     COUNT
    37                   #
    38 000020 11 26                 JC      ATEND               # CALC < 0 ? : ATEND
    39 000022 12 26                 JZ      ATEND               # CALC = 0 ? : ATEND
    40 000024 10 1A                 JMP     SUBTR               #   ELSE KEEP SUBTRACTING
    41                   #
    42 000026 50 5C      ATEND      LMA     CALC                # CALC
    43 000028 E2 00                 CPI     X'00                #   EQUAL ZERO?
    44 00002A 13 2E                 JE      SKIP                #     GO SKIP
    45 00002C 10 3A                 JMP     NEXTC               #     ELSE NEXTC
    46                   #
    47 00002E 50 5A      SKIP       LMA     NUMBER              # NUMBER
    48 000030 EA 5B                 CPM     COUNT               #   EQUAL COUNT?
    49 000032 13 3A                 JE      NEXTC               #     GO NEXTC
    50                   #
    51 000034 20 00                 LIA     X'00                # SET PRIME INDICOATOR
    52 000036 28 5D                 STA     PRIME               #   TO FALSE
    53 000038 10 46                 JMP     SKIP1               #     LEAVE COUNT LOOP
    54                   #
    55 00003A 50 5B      NEXTC      LMA     COUNT               # COUNT =
    56 00003C E0 01                 ADI     X'01                #   COUNT +
    57 00003E 28 5B                 STA     COUNT               #     1
    58                   #
    59 000040 EA 5A                 CPM     NUMBER              # COUNT > NUMBER ?
    60 000042 15 46                 JG      SKIP1               #   GO SKIP1
    61 000044 10 0E                 JMP     CLOOP               #   ELSE GO CLOOP
```

```
    62                  #
    63 000046 50 5D      SKIP1      LMA      PRIME               # PRIME INDICATOR
    64 000048 E2 00                 CPI      X'00                #   FALSE ?
    65 00004A 13 4F                 JE       NEXTN               #     GO NEXTN
    66                  #
    67 00004C 50 5A      FOUNDPR        LMA      NUMBER              # FOUND PRIME
    68 00004E 30                    OPA                          #   PUT ON OUTPUT
    69                  #
    70 00004F 50 5A      NEXTN      LMA      NUMBER              # INCREMENT
    71 000051 E0 01                 ADI      X'01                #   NUMBER
    72 000053 28 5A                 STA      NUMBER              #     BY 1
    73 000055 E2 FF                 CPI      X'FF                # LESS THAN 255 ?
    74 000057 14 04                 JL       NLOOP               #   GO NEXT NUMBER
    75                  #
    76 000059 FF         FINISH     HLT                          # HALT PROGRAM
    77                  #
    78                  # ############################################################################
    79                  # ### STORAGE AREA
    80                  # ############################################################################
    81 00005A 00         NUMBER     NOP
    82 00005B 00         COUNT      NOP
    83 00005C 00         CALC       NOP
    84 00005D 00         PRIME      NOP
    85                  #

Phase 1 parsing ended successfully

Phase 2 parsing ended successfully

Phase 3 parsing ended successfully

--------------------------------------------------------------------------------
End of assembly for file prime.sasm
--------------------------------------------------------------------------------
```