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**ENEE 350 Homework Set 7**

Programming Assignment 2

(Due: Class 17, Wed., Oct. 29, 2014)

Write, assemble and run successfully on the simulator a Mac-1 subroutine **minev(n,x)** that returns in the AC the address of the integer possessing the smallest even value (i.e., the farthest left value on the real line that is a multiple of 2, including zero) among the n integers in the array whose starting address is x. If there is more than one minimum even value in the array range, return the address of the one with the greatest address value. If there are no even values in the array range, return minium one, a clearly out of range address. Your subroutine should be tested with the main program shown below, which defines how the parameters are passed.

```

/main program                                     | /continued from below halt
      EXTRN minev                                  | data      40
ans1   RES    1                                    |           8
ans2   RES    1                                    |          129
ans3   RES    1                                    |           3
n1     7                                           |         -133
n2     10                                          |           0
n3     5                                           |           -2
start  loco   4020                                 |          -29
      swap                               /initialize sp |           -3
      loco   n1                               |          347
      push                               /push address n1 |           15
      loco   data                             |           -6
      push                               /push array start address |         -435
one    call   minev                             |           13
      stod   ans1                               |           END      start
      insp   2                                    |
      loco   n2                               /push address n2 |
      push                                       |
      loco   data                             |
      addd   (4)                               |
      push                               /push array start address |
two    call   minev                             |
      stod   ans2                               |
      insp   2                                    |
      loco   n3                               /push address n3 |
      push                                       |
      loco   data                             |
      addd   (6)                               |
      push                               /push array start address |
three  call   minev                             |
      stod   ans3                               |
      insp   2                                    |
      halt                                       |
      /data array continues here but             |
      / is shown in the above right hand column |

```

Hand in a copy of the main program symbolic assembly listing, the subroutine symbolic assembly listing, the contents of (macro) memory after “load main sub” (i.e., of main.abs) before execution of the program, and the contents of memory after execution of the program. Highlight and comment upon the final answers. Specify what values are contained in the addresses specified by ans1, ans2, and ans3.