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EECS 20 Lab 1

Part (d):

```
        .ORIG x5000
        LEA R0, L1
        TRAP x22
       LEA R0, L2
       TRAP x22
        LEA R0, L3
       TRAP x22
        LEA R0, L4
       TRAP x22
       TRAP x25
L1     .STRINGZ "Electrical Engineering\n"
L2     .STRINGZ "Jonathan\n"
L3     .STRINGZ "Lim\n"
L4     .STRINGZ "Spring 2018"
       .END
```

Part (e):

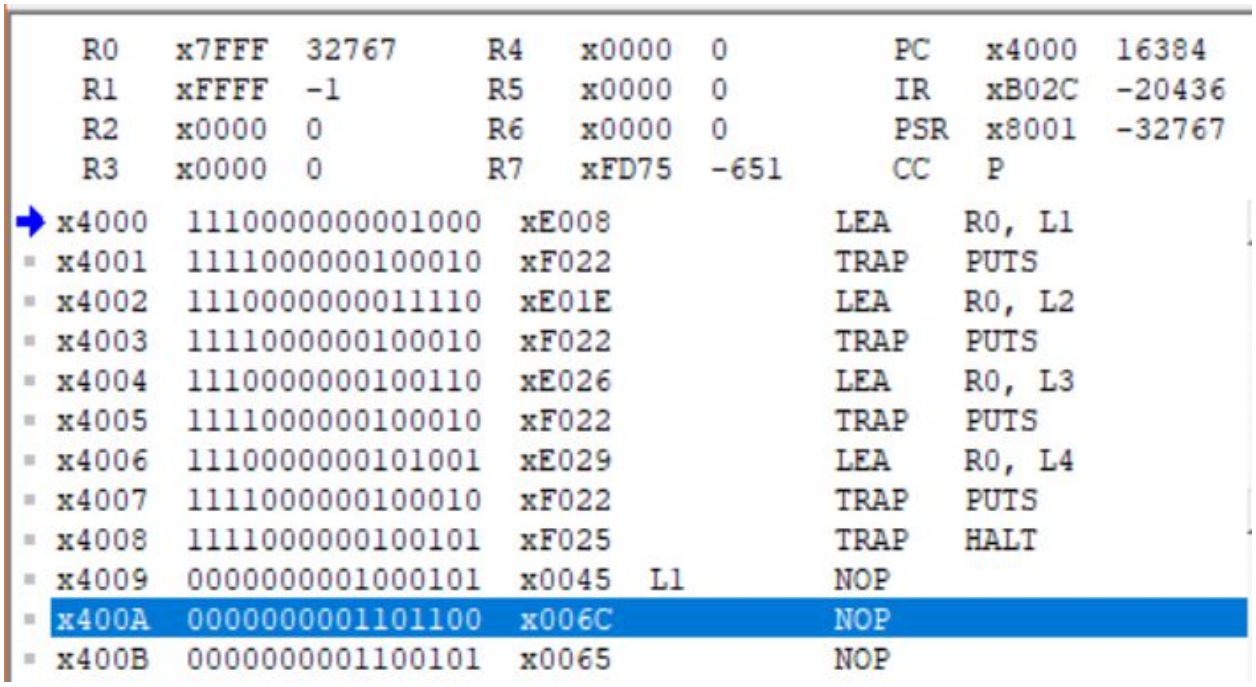
Outputs:

.ORIG x4000:

```
Electrical Engineering
Jonathan
Lim
Spring 2018
----- Halting the processor -----
```

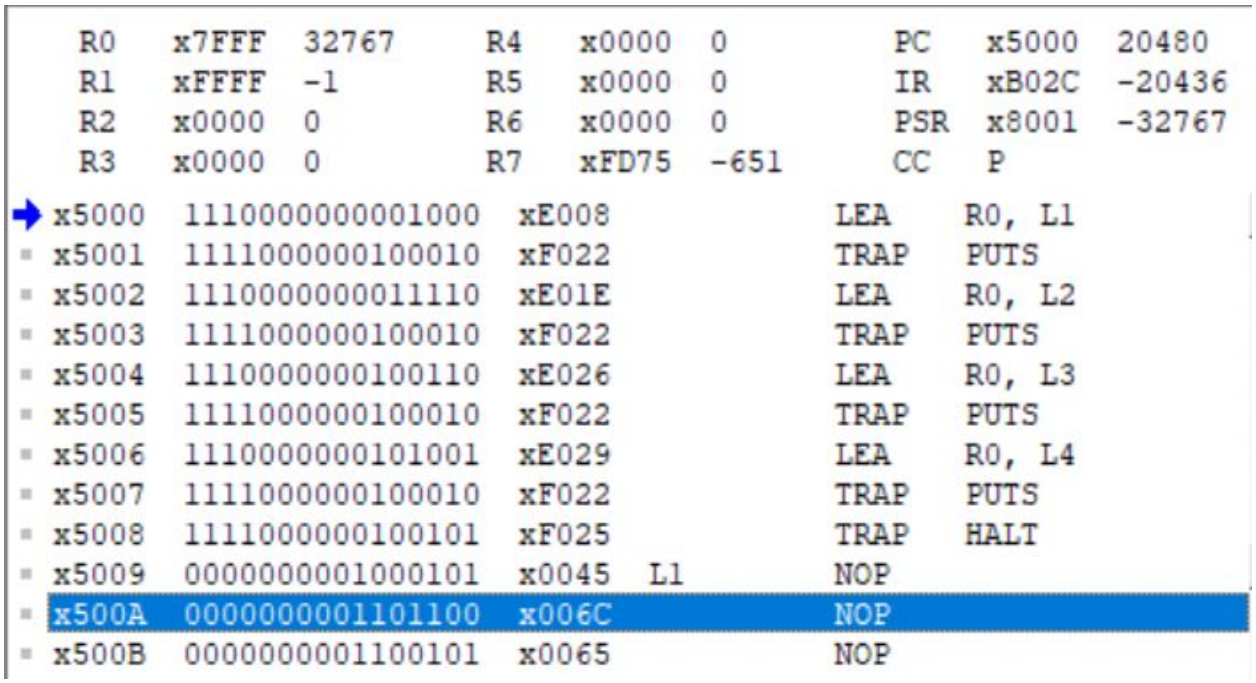
.ORIG x5000:

```
Electrical Engineering
Jonathan
Lim
Spring 2018
----- Halting the processor -----
```



```
   R0   x7FFF  32767     R4   x0000  0         PC   x4000  16384
   R1   xFFFF  -1        R5   x0000  0         IR   xB02C  -20436
   R2   x0000  0         R6   x0000  0         PSR  x8001  -32767
   R3   x0000  0         R7   xFD75  -651      CC   P
➡ x4000  1110000000001000  xE008          LEA   R0, L1
  x4001  1111000000100010  xF022          TRAP  PUTS
  x4002  1110000000011110  xE01E          LEA   R0, L2
  x4003  1111000000100010  xF022          TRAP  PUTS
  x4004  1110000000100110  xE026          LEA   R0, L3
  x4005  1111000000100010  xF022          TRAP  PUTS
  x4006  1110000000101001  xE029          LEA   R0, L4
  x4007  1111000000100010  xF022          TRAP  PUTS
  x4008  1111000000100101  xF025          TRAP  HALT
  x4009  0000000001000101  x0045  L1      NOP
  x400A  0000000001101100  x006C          NOP
  x400B  0000000001100101  x0065          NOP
```

Fig.1: .ORIG x4000



```
   R0   x7FFF  32767     R4   x0000  0         PC   x5000  20480
   R1   xFFFF  -1        R5   x0000  0         IR   xB02C  -20436
   R2   x0000  0         R6   x0000  0         PSR  x8001  -32767
   R3   x0000  0         R7   xFD75  -651      CC   P
➡ x5000  1110000000001000  xE008          LEA   R0, L1
  x5001  1111000000100010  xF022          TRAP  PUTS
  x5002  1110000000011110  xE01E          LEA   R0, L2
  x5003  1111000000100010  xF022          TRAP  PUTS
  x5004  1110000000100110  xE026          LEA   R0, L3
  x5005  1111000000100010  xF022          TRAP  PUTS
  x5006  1110000000101001  xE029          LEA   R0, L4
  x5007  1111000000100010  xF022          TRAP  PUTS
  x5008  1111000000100101  xF025          TRAP  HALT
  x5009  0000000001000101  x0045  L1      NOP
  x500A  0000000001101100  x006C          NOP
  x500B  0000000001100101  x0065          NOP
```

Fig.2: .ORIG x5000

As seen in the two screenshots above, the address of PC when .ORIG is set to x4000 is x4000, whereas it is x5000 when .ORIG is set to x5000.

Part (f):

.ORIG: This command starts the Assembly script in the specified initial address.

TRAP x22: This command is used to display the value in the defined register address.

TRAP x25: In this case, this command is used to permanently end the program, but it normally acts as a halt in the program in a more complicated program.