CSE 2312: Computer Organization & Assembly Language Programming
Fall 2016
Program #3

In this assignment, you will implement basic search operations on an array populated with 10 random values. When the program is executed, it should immediately print output in the following format:

```
a[0] = <RANDOM 0>
a[1] = <RANDOM 1>
a[2] = <RANDOM 2>
a[3] = <RANDOM 3>
a[4] = <RANDOM 4>
a[5] = <RANDOM 5>
a[6] = <RANDOM 6>
a[7] = <RANDOM 7>
a[8] = <RANDOM 8>
a[9] = <RANDOM 9>
MINIMUM VALUE = <RANDOM X>
MAXIMUM VALUE = <RANDOM Y>
ENTER SEARCH VALUE:
```

Where <RANDOM> represents a positive unsigned numeric value in the range [0-999]. After the array contents are generated and printed, your program will search the unsorted random array to find the minimum and maximum values, which will then printed as shown above.

Finally, your program will prompt the user for a value to search for by continuously taking input in the following form:

```
ENTER SEARCH VALUE: <SEARCH_VALUE><ENTER>
```

Once a search value is entered, the index of the first location in the array storing the search value should be printed. If the value does not exist in the array, the value `-1` should be printed.

An example of proper execution is provided below for reference…

```
a[0] = 5
a[1] = 120
a[2] = 3
a[3] = 555
a[4] = 875
a[5] = 20
a[6] = 163
a[7] = 23
a[8] = 14
```

```
a[9] = 501
MINIMUM VALUE = 3
MAXIMUM VALUE = 875
ENTER SEARCH VALUE: 120
1
ENTER SEARCH VALUE: 777
-1
ENTER SEARCH VALUE: 501
9
```

Points will be assigned as follows:

1. Array contents randomly generated and printed, numbers change between program runs
   (20 points)
2. Minimum value calculated and printed correctly
   (20 points)
3. Maximum value calculated and printed correctly
   (20 points)
4. Program continuously prompts user for search value
   (10 points)
5. Search result correct in all test cases
   (30 points)

Submit your solution as a single ".s" file to Blackboard. Name the file "p3_XXXYYYY.s", where XXXYYYY is your UTA NetID.

*** Be sure to check http://github.com/cmcmurrough/cse2312 for useful code snippets ***