

## ECE 33: Introduction to Computer Engineering: Fall 2015

### Programming Assignment I : DUE: Oct 14, 2015

This assignment is supposed to teach you the use of operating system function calls, computing and printing values and simple loop structure.

Write a program in 8085 assembly language that would read 8 nonnegative numbers between 0 and 255 and then print how many of them are smaller than 66, how many are between 67 and 166 (inclusive of both) and how many are bigger than 166.

The program should begin with a welcoming message. It should then ask the user to type in 8 numbers, each between 0 and 255 (inclusive of both). The program should then print out the number of inputs in the three ranges.

The program should prompt the user to type in each number. Each input is completed by the <CR> key. Thus to type in a number 35, the user will have to key in '3', '5' and <CR>. You may assume that the user is reasonably intelligent (a disastrous assumption in real world) and that he/she responds correctly to given prompts. Thus, having asked to "*type a number between 0 and 255*", you may assume that the user will indeed punch in a number in that range and not type something like "0a number255". Put simply: Your program need not check for user errors.

A typical session with this program may look like this:

```

                The Range Finder
Classify eight numbers in a flash!

Type a number between 0 and 255 :
```

Program is now waiting for the user input. User types 35 and hits carriage return to see another identical prompt:

```

                The Range Finder
Classify eight numbers in a flash!

Type a number between 0 and 255 : 35
Type a number between 0 and 255 :
```

User now types 9 and the program promptly requests another number input. This continues till he puts in all 8 numbers, at which time the final analysis is presented and the program ends. The screen now takes the following form:

### The Range Finder

Classify eight numbers in a flash!

```
Type a number between 0 and 255 : 35
Type a number between 0 and 255 : 67
Type a number between 0 and 255 : 67
Type a number between 0 and 255 : 0
Type a number between 0 and 255 : 100
Type a number between 0 and 255 : 250
Type a number between 0 and 255 : 166
Type a number between 0 and 255 : 200
```

Small numbers: 2    Medium: 4    Large: 2

Thank you for using the Range Finder!

Name the program prog1. Upload prog1.asm to the coursesite by 11:59 PM, Oct 14, 2015. Your submission time will be the time stamp on the web submission. Your program should clearly identify you in the program header.

The programs will be graded for efficiency (compactness of the code and speed of execution), correct programming style, proper labels, good comments and pleasing interaction with the user (user interface). Please use your own imagination while designing the screen layout and messages. See the three example programs (example1.asm - example3.asm) to learn the correct programming style.