CS 245 Fall 2015

Assignment 1

How to start:

- Start with a lab code file. Delete or alter the data and code that exists.
- Use my Assembly notes to search for instructions that you need.
- Use the lab descriptions, at the end of the Assembly notes, if you don't remember how to run Mars. You may download Mars onto your own PC if you would like.

For all assignments, be sure to:

- Include file comments at the top, listing your name, the name of the program, and briefly describe what the program does.
- Line up instruction parts in columns:

0=labels; 1tab=instruction mnemonic; 2tabs=operands; 3-4tabs=comments.

- Include pseudo-code comments to the right of your assembly code. **Avoid** comments that tell me what the assembly does, such as: move 25 to register $s3. Avoid register names; use logical names instead. Keep your comments to the logic. This is important for larger, complex programs.
- Terminate your program with an exit syscall, similar to Lab 3.

Program 1: Working with Ands and Ors

For the first program, simply perform the following calculation:

$T1 = 0xcc AND 0xaa OR 0x0f

Print your result: "cc & aa | 0f =" <N>

Hint: Modify lab1.s to start. You will print your result as a string and a hexadecimal integer. A hexadecimal integer can be easily printed using 'syscall' when $v0=34 (decimal) and $a0=integer.

Turn this program in as hwk1a.asm and bring a paper copy of your program to class to submit.

$ submit 245 hwk1a.asm

Program 2: Positive or Negative?

Prompt for a number: "Enter Number:" Read in the integer. Use a comparison branch instruction to determine if the number is positive or negative. Then print 'Number is positive' or 'Number is negative' as appropriate.

Use the following comments:

```
# Print("Enter Number")
# number = ReadInteger()
# if (number >= 0)
```

```
#     Print("Number is positive")
# else Print("Number is negative")
# exit()
```

Turn this program in as hwk1b.asm, with a paper copy for me as well.

$ submit 245 hwk1b.asm