CS 245 Fall 2014
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: Totaling 3 Array Elements
For the first program, declare a word array 'warray' of 3 variables, total them, and store the total in the 'total' variable. The total and warray should exist in memory. You may initialize warray to whatever you like.
Turn this program in as hwk1.asm and bring a paper copy of your program to class to submit.
$ submit 245 hwk1.asm

Program 2: Shifting 1
Allocate a 1 in memory. Rotate the 1, bit by bit, from low to high, and around again 3 times, in a register. Use the rotate instruction and a loop, using a conditional branch.
Turn this program in as hwk2.asm, with a paper copy for me as well.
$ submit 245 hwk2.asm

Program 3: Odd or even?
Prompt for a number: "Enter Number:" Read in the integer. Use an *and* instruction to determine if the number is even or odd. Then print 'odd number' or 'even number' as appropriate.
Use the following comments:

```
#  Print("Enter Number")
#  number = ReadInteger()
#  number = number & 0x01
#  if (number == 0)
#      Print("Number is even")
#  else Print("Number is odd")
#  exit()
```

Turn this program in as hwk3.asm, with a paper copy for me as well.

$ submit 245 hwk3.asm