CMPS 351: Spring 2013 Program #4
Date assigned: Thursday, February 7, 2013 Due: Thursday, February 14, 2013

This assignment asks you to write a MIPS function to compute x^y. Your program should take two parameters (x and y) and return the results of the computation. This function can be easily calculated from the definition of a power as x^y is the product of x times itself y times (e.g. 5^3=5x5x5=125.) Your function should work with any integer base and any positive power ($x, y \in \mathbb{Z}, y \geq 0$).

Your program will not need to interact with the console. Instead you will use a test suite that has been provided for you. The test suite will call your function (power) with the parameters ($a0=x, $a1=y) and will wait for your function to return its results in $v0. The test suite will also tell you whether your function has correctly calculated the results. Finally, the test suite will also test to make sure that you are following assembly language conventions.

You should attach your code to the test suite for testing by running either:
Windows: copy /Y <Power Function Name>.asm + "Program #4 - Test Suite.asm" <output>.asm
Unix: cat <Power Function Name>.asm "Program #4 - Test Suite.asm" > <output>.asm
The result of either of these commands is a file that contains both sets of code, so that SPIM can load all of it at once. Your final submission should only include your function and not the test suite.

Your program should include appropriate comments indicating what the code should be doing and which registers are being used. Please include your name and CLID in the program headers and include your CLID in the file names. Your programs should be turned in through Moodle before class starts on the due date. You should test your programs using the SPIM simulator before submitting them.

Expected output:

```
Test #1 passed.
Test #2 passed.
Test #3 passed.
Test #4 passed.
Test #5 passed.
Test #6 passed.
Test #7 passed.
Test #8 passed.
Test #9 passed.
Test #10 passed.
```

Objectives:

1. To review MIPS control statements.
2. To review creating loops in MIPS assembly language.
3. To introduce and practice writing basic functions with the MIPS assembly language.
4. To introduce and practice using a test suite.

Point Values:
Total. 100pts