**Project 4**

Create and execute the two Assembly programs as specified in Chapter 4 of your book:

**Mult, Fill**

* Mult – Perform multiplication between numbers in registers with only an Adder
* Fill – Draw every pixel on a memory mapped screen peripheral
  + **cp File.asm File.asm.txt**
  + **cp File.hack File.hack.txt**

Files to submit (for each program):

1. The appropriately named File.asm.txt file as created above.
2. The appropriately named File.hack.txt file as created above.

EXTRA CREDIT

Download the attached **Decrypt.tst** file.  You will need to write a Hack Assembly program named Decrypt.asm.

* The program should XOR decrypt a null-terminated buffer of Ciphertext characters.
* R0 will store the KEY.
* R1 will store a pointer to the beginning of the encrypted character buffer.
* You must go to the buffer and XOR each Register with the KEY until you get to a Register that is all zeros (null-terminated).
* Registers should be decrypted IN-PLACE (eg. if Ciphertext was in Register 88, the Plaintext result should overwrite it in Register 88).
* The provided Decrypt.tst script will take the decrypted contents of the buffer (provided you decrypted correctly) and send these Plaintext ASCII values (in Hex) to the .out file.

**SUBMIT**: Your working Decrypt.asm.txt and Decrypt.hack.txt and write the decoded message in the comments section on Blackboard that gets submitted with the assignment.