**MSU CSC 320**

**Fall 2015**

**Assignment 4. Russian Peasant Algorithm**

**Due Date: October 30, 2015**

*Copy and complete the file* [*\\eccentric\Class\csc320\001\\_download\Assn4.asm*](file:///\\eccentric\Class\csc320\001\_download\Assn4.asm)*. The file is empty and is provided for a consistent filename spelling.*

Write a MIPS program to implement the Russian Peasant algorithm for multiplication, described at <http://mathforum.com/dr.math/faq/faq.peasant.html> (verified Apr. 6, 2009)

* Prompt for the input of two positive integers.
* Print the result ***and also*** put the result into **$s0** at completion of the routine.
* The algorithm’s two primary operations are *addition* and *doubling* (multiplication by two). Refer to the example in the web page to observe the operation of the algorithm on .
* Suppose you use register **$s1** in the implementation of the algorithm with the example problem . Then register **$s1** at successive points in the program will contain the values:
  + 114 (which is (57\*2))
  + 342 (which is (57\*2) + (57 \* 4))
  + 1254 (which is (57\*2) + (57 \* 4) + (57\*16))
  + 4902 (which is (57\*2) + (57 \* 4) + (57\*16) + (57\*64))
  + *All those values are in decimal.*
* You may assume that the resulting product will be of a size that will fit into one 32-bit register.
* *Do not use the MIPS instruction multiply instructions such as* ***mult*** *– your assignment will be given a zero.*

**Turn in** to your eccentric/upload directory (***not in a subdirectory!***) the complete assembly language program, named **assn4.asm**.