Assignment 5 for Computer Architecture

You are to write a program in MIPS that computes N! using recursion. Remember N! is the product of all the numbers from 1 to N inclusive, that is 1 x 2 x 3 x (N – 1) x N. It is defined as 1 for N = 0 and is undefined for values less than 0.

The programs first requests the user to input the value of N (display a prompt first so the user knows what to do). If the input value is less than 0, the program is to display “N! undefined for values less than 0” and then requests the user to input the value of N again. If the value input is non-negative, it is to compute N! using a recursive function, that is one that calls itself.

You are to have your name, the assignment number, and a brief description of the program in comments at the top of your program. Since this is an assembly language program, I expect to see comments on almost every line of code in the program. Also make the code neat: line up the command fields, the register fields, and the comment fields (see page 134 in your text for a nice example).

You are to turn in your code, an observations file with what you learned doing the assignment and roughly how long it took you to do it, and a screenshot of a test run of your program.

The program is worth 20 points and is due October 21.

Note that this is an individual assignment (as are all the assignments in this class), you are not to work with someone on it. It is OK to ask for and to give some help for a problem within the assignment, but the work must be your own.