MIPS Programming Lab Assignment 2

Q1. Write a MIPS program to compute the factorial of a positive number (>1). Use a subroutine call from main to compute the factorial. Use iterative method of factorial computation.

Q2.   Write an MIPS assembly program that checks if a 32-bit number is a palindrome. Assume that the input is available from the user through the console.

The program should return " Yes a palindrome" if the input is a palindrome else should return " No, not a palindrome"

Q3. Download a copy of the program *buggy.s* provided in the helpful resources section

a. Inspect the code and try to understand what each register is being used for.

b. Run the code and see what it does.

c. Using MARS, single-step through the code. Watch the registers and see whether they're changing the way you expect. Note carefully each statement that executes without an exception.

d. When an exception does occur, clear everything and reload the code. Step up to the instruction just before the exception and think about what is supposed to happen next.

   There are at least two errors in this code. What are they? Write a short description of the errors and place it in a text file, bugs.txt.

Q4. Write a MIPS program that given a number *N* and *N* integers can print the integers in a sorted order using *Bubble Sort*. Bubble Sort algorithm involves swapping of two numbers. Write a procedure for swapping two numbers separately and use it in the sort function.