COE 301/ ICS 233, Term 151

Computer Architecture & Assembly Language

Programming Assignment# 4
Due date: Thursday, Nov. 12, 2015

Q.1.

(i) Write a procedure, Sine, that receives an angle in radians, x, of type double and returns the value of sin(x) using the following series

$$\sin(x) = \sum_{k=0}^{\infty} (-1)^k \, x^{2k+1} / (2k+1)!$$

Approximate the answer up to k=100.

(ii) Write a MIPS program that asks the user to enter the length of the two sides of a triangle and the angle between them in degrees and prints the area of the triangle. Assume that all variables are of type double.

A sample execution of the program is shown below:

Enter the length of the first side of the triangle: 10
Enter the length of the second side of the triangle: 2.5
Enter the angle between the two sides (degree): 30
The area of the triangle is: 6.25

The solution should be well organized and your program should be well documented. Submit a soft copy of your solution in a zip file. The name of the zip file should be your ID (i.e. 200157690). Your solution should be submitted in a word file that contains the following items:

     i)   *Your name and ID*

     ii)   *Assignment number*

     iii)   *Problem statement*

     iv)   *Your solution along with the code*

     v)   *Discussion of what worked and what did not work in your program. Include snapshots that demonstrate the working parts of your program. If things did not work and you attempted to solve them, mention that and write about the difficulty that you have faced.*