Dept. of Computer Science and Engineering
IIT Delhi
COL216 : Assignment 1
II Semester 2020-2021

Release date: 17 February 2021
Submission deadline: 11:55 pm, 23 February 2021

General Instructions

1. You will use QtSpim Simulator that was installed in Assignment 0 for this Assignment.
2. The assignment will be done individually or in groups of 2. Only one member of each group should submit the assignment on Moodle.
3. Each group member should understand the problem and contribute equally to the solution. Demos (online/phone) would be held for all the lab assignments.
4. You will be awarded marks according to your design, implementation, and testing strategy. Extensive testing is expected as part of the assignment.
5. **Adopting any unfair means will lead to -MAX marks (MAX=10 for this assignment).**

Submission instructions

- Prepare a small write-up (1-2 pages) on the approach taken to solve the problem along with test cases you have considered.
- Explain the testing strategy.
- Zip the document along with the code file and submit at the Moodle submission link.

Problem Statement:

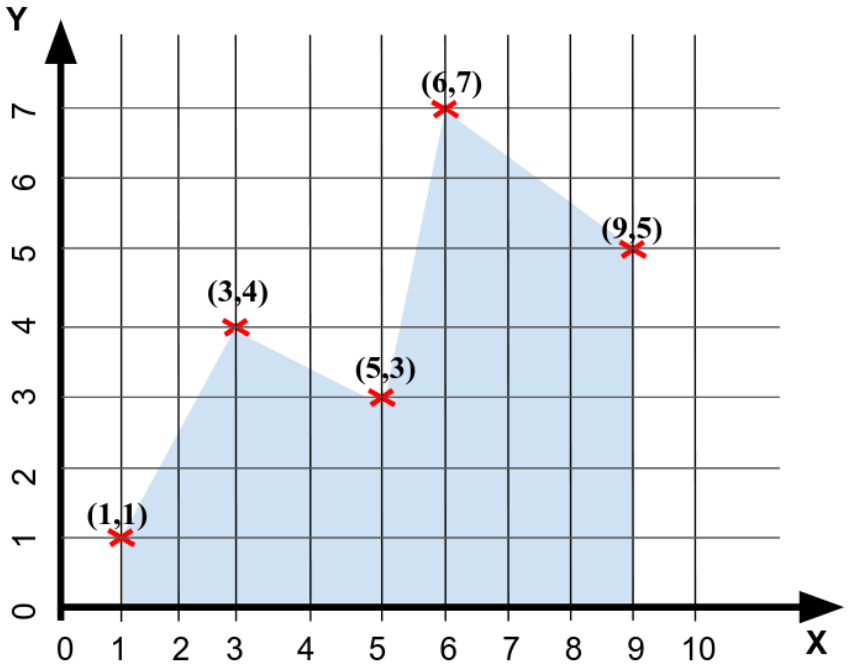
Write a MIPS Assembly Program for obtaining the area under a curve formed by joining successive points by a straight line.

Input: (x, y) Co-ordinates of "n" points, sorted according to the x co-ordinate. Assume integer values for the co-ordinates. Inputs can be taken from keyboard.

Output: Print the area under the curve. The result can be floating point value aswell.

Example: For the following input consisting of 5 points, the result is 35 (area of shaded region).

Inputs
n: 5
(X,Y) co-ordinates sorted according to X co-ordinate: (1,1) (3,4) (5,3) (6,7) (9,5)



Other instructions:
Please refer to this document for help on MIPS Assembly language and QtSpim.
http://www.egr.unlv.edu/~ed/MIPStextSMv11.pdf

Please post your doubts on Piazza and we will revert as soon as possible.

MAX marks = 10. Breakup of marks:

1M : For proper inputs reading (inputs can be taken from keyboard)
1M : For printing the correct result
3M : Approach & Code
3M : Test cases
1M : Document
1M : Questions/Viva

Late Penalty:

- Up to 30 mins after deadline: No penalty (for network issues)
- 30 mins to 12 hours after deadline: 10%
- 12 hours to 1 day after deadline: 30%
- 1-2 days after deadline: 50%
- 2-3 days after deadline: 70%
- >3 days after deadline: 100%