

CSC 180, Lab #1

Question 1 – Algorithms [20 points]

Write out algorithms for the problems below. Each step of your algorithm must be computable. You may use any of the *sequential* or *control operations*, and other operations as indicated. For parts (A) and (B), make sure to display the result!

1A) Find the area of a rectangle given a *length* and *width* specified by the user

1B) Find the maximum of 10,000 numbers (Note: use $N_1, N_2, \dots, N_{10,000}$ for the 10,000 numbers)

1C) Draw the letter 'E' with a height of 100 units and a width of 60 units. In addition to the *sequential* or *control* operations, the possible instructions are as follows:

- Move forward or backwards x units
- Turn left or right x degrees
- Pick the pen up or put the pen down.

Note that movement is initially in the upward direction

1D) Direct someone how to go to my office from the classroom (Science Rm 135). The possible instructions are as follows:

- turn left (90 degrees) or right (90 degrees)
- bear left or bear right
- go up the stairs to a specific floor
- go through a door
- move forward until a specific object (e.g., move forward until the red painting, or move forward until you reach room #100).

See the Jupyter Notebook for the remaining questions