Department of Computer Science
University of Massachusetts Lowell
COMP.4270/5460
Spring 2022

Programming Assignment 5 [5 points]
Handed out on 3/16/2022
Due on 3/27/2022

Basic 2d Shapes

Implement the following 2d algorithms using HTML Canvas/Javascript. **You cannot use direct Canvas primitives—assume you can draw a single point and develop these algorithms**.

- DDALine
- MidpointLine – handle all slopes
- MidpointCircle
- MidpointEllipse

There should be buttons to select the algorithm/shape.
There should be text boxes to accept (x1, y1) and (x2, y2) for line; and (x,y) and r for circle
Handle all slopes/quadrants—supplied code does not

Draw the same shapes using Canvas primitives and compare if they are identical or not; analyze and write in your report.

Curves

Implement the following 2d algorithms using HTML Canvas/Javascript. **You cannot use direct Canvas primitives—assume you can draw a single point and develop these algorithms**.

- Bezier Curve
- Hermite Curve
- B-Spline Curve

There should be buttons to select the algorithm/shape.
There should be text boxes to accept (x1, y1), (x2, y2), (x3, y3) & (x4, y4)

Draw the same shapes using Canvas primitives and compare if they are identical or not; analyze and write in your report.

Deliverables

- Source files
- Sample Input/output – if applicable
- 1 page report : Write about issues faced, lessons learned, any remaining bugs etc.

Extra Credit

- any other functionality …. – please document in report and code.

Deadline and Late Submissions

- The assignment is due on the date specified above at 11:59:59 PM
- Each day late will incur a penalty of 5% of the grade for the assignment; for example, if the assignment is 3 days late, the maximum grade will be 85 out of 100—15 will be subtracted from whatever grade is assigned.