COMPUTER GRAPHICS

Assignment – 1

Line Drawing Algorithms

Date: 26.08.2021

Submission Deadline: 03.09.2021

Implement Digital Differential Analyzer (DDA) algorithm in C/C++. The pseudocode for the algorithm is as follows:

```
Algorithm DDA(x1, y1, x2, y2)
{
        // calculate dx , dy
        dx = X1 - X0;
        dy = Y1 - Y0;

        // Depending upon absolute value of dx & dy
        // choose number of steps to put pixel as
        // steps = abs(dx) > abs(dy) ? abs(dx) : abs(dy)
        steps = abs(dx) > abs(dy) ? abs(dx) : abs(dy);

        // calculate increment in x & y for each steps
        Xinc = dx / (float) steps;
        Yinc = dy / (float) steps;

        // Put pixel for each step
        X = X0;
        Y = Y0;
        for (int i = 0; i <= steps; i++)
        {
           putpixel (round(X),round(Y),WHITE);
           X = X + Xinc;
           Y = Y + Yinc;
        }
}
```

Take the two endpoints (x1, y1) and (x2,y2) as user input.

Bonus Points: Add animation in order to show the point plotted along with the coordinate values after every iteration.