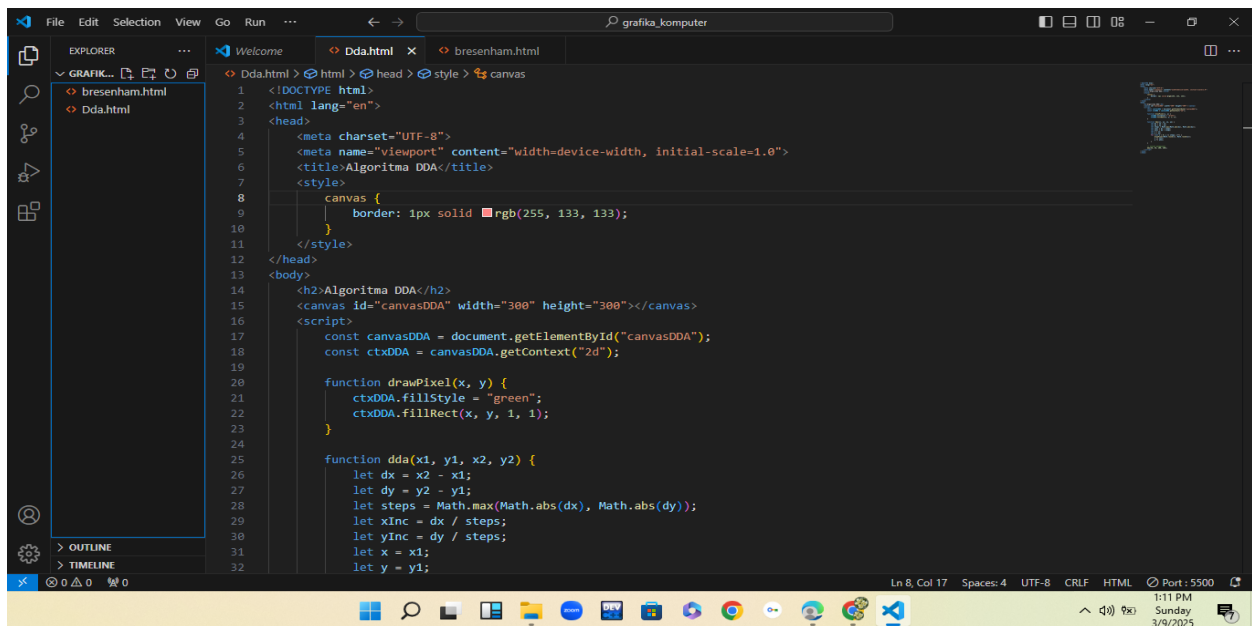


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Kelas : D

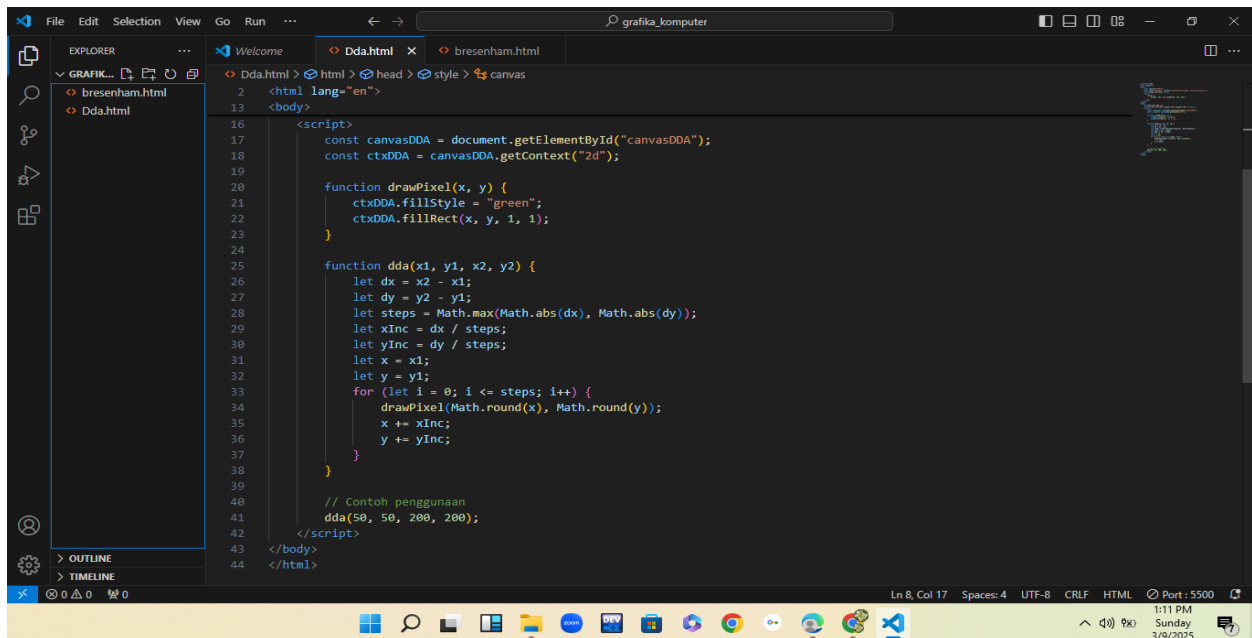
Tugas pembentukan garis menggunakan algoritma DDA dan Bresenham

## 1. Menggunakan Algoritma DDA

- Source Code



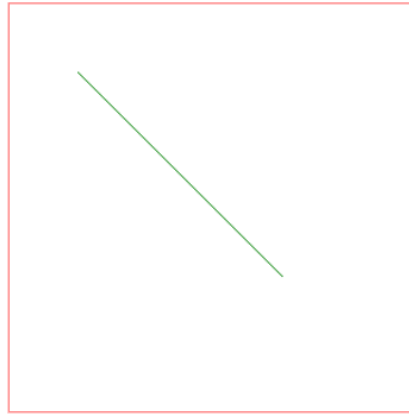
```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <title>Algoritma DDA</title>
7   <style>
8     canvas {
9       border: 1px solid #255;
10    }
11  </style>
12 </head>
13 <body>
14   <h2>Algoritma DDA</h2>
15   <canvas id="canvasDDA" width="300" height="300"></canvas>
16   <script>
17     const canvasDDA = document.getElementById("canvasDDA");
18     const ctxDDA = canvasDDA.getContext("2d");
19
20     function drawPixel(x, y) {
21       ctxDDA.fillStyle = "green";
22       ctxDDA.fillRect(x, y, 1, 1);
23     }
24
25     function dda(x1, y1, x2, y2) {
26       let dx = x2 - x1;
27       let dy = y2 - y1;
28       let steps = Math.max(Math.abs(dx), Math.abs(dy));
29       let xInc = dx / steps;
30       let yInc = dy / steps;
31       let x = x1;
32       let y = y1;
```



```
16   <script>
17     const canvasDDA = document.getElementById("canvasDDA");
18     const ctxDDA = canvasDDA.getContext("2d");
19
20     function drawPixel(x, y) {
21       ctxDDA.fillStyle = "green";
22       ctxDDA.fillRect(x, y, 1, 1);
23     }
24
25     function dda(x1, y1, x2, y2) {
26       let dx = x2 - x1;
27       let dy = y2 - y1;
28       let steps = Math.max(Math.abs(dx), Math.abs(dy));
29       let xInc = dx / steps;
30       let yInc = dy / steps;
31       let x = x1;
32       let y = y1;
33       for (let i = 0; i <= steps; i++) {
34         drawPixel(Math.round(x), Math.round(y));
35         x += xInc;
36         y += yInc;
37       }
38     }
39
40     // Contoh penggunaan
41     dda(50, 50, 200, 200);
42   </script>
43 </body>
44 </html>
```

- Hasil

### Algoritma DDA



## 2. Menggunakan Algoritma Bresenham

- Source Code

```
File Edit Selection View Go Run ... grafika_komputer
EXPLORER
  GRAFIK...
  bresenham.html
  Dda.html
  bresenham.html > html > body > script > drawPixel
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <title>Algoritma Bresenham</title>
7   <style>
8     canvas {
9       border: 1px solid #255, 133, 133;
10    }
11  </style>
12 </head>
13 <body>
14   <h2>Algoritma Bresenham</h2>
15   <canvas id="canvasBresenham" width="300" height="300"></canvas>
16   <script>
17     const canvasBresenham = document.getElementById("canvasBresenham");
18     const ctxBresenham = canvasBresenham.getContext("2d");
19
20     function drawPixel(x, y) {
21       ctxBresenham.fillStyle = "green";
22       ctxBresenham.fillRect(x, y, 1, 1);
23     }
24
25     function bresenham(x1, y1, x2, y2) {
26       let dx = Math.abs(x2 - x1);
27       let dy = Math.abs(y2 - y1);
28       let sx = x1 < x2 ? 1 : -1;
29       let sy = y1 < y2 ? 1 : -1;
30       let err = dx - dy;
31       while (true) {
32         drawPixel(x1, y1);
```

```
File Edit Selection View Go Run ... grafika_komputer
EXPLORER
  bresenham.html
  Dda.html
  bresenham.html
    <html lang="en">
    <body>
      <script>
        //Algoritma Bresenham
        <canvas id="canvasBresenham" width="300" height="300"></canvas>
        <script>
          const canvasBresenham = document.getElementById("canvasBresenham");
          const ctxBresenham = canvasBresenham.getContext("2d");

          function drawPixel(x, y) {
            ctxBresenham.fillStyle = "green";
            ctxBresenham.fillRect(x, y, 1, 1);
          }

          function bresenham(x1, y1, x2, y2) {
            let dx = Math.abs(x2 - x1);
            let dy = Math.abs(y2 - y1);
            let sx = x1 < x2 ? 1 : -1;
            let sy = y1 < y2 ? 1 : -1;
            let err = dx - dy;
            while (true) {
              drawPixel(x1, y1);
              if (x1 === x2 && y1 === y2) break;
              let e2 = 2 * err;
              if (e2 > -dy) { err -= dy; x1 += sx; }
              if (e2 < dx) { err += dx; y1 += sy; }
            }
          }

          bresenham(50, 50, 200, 200);
        </script>
      </body>
    </html>
```

- Hasil

## Algoritma Bresenham

