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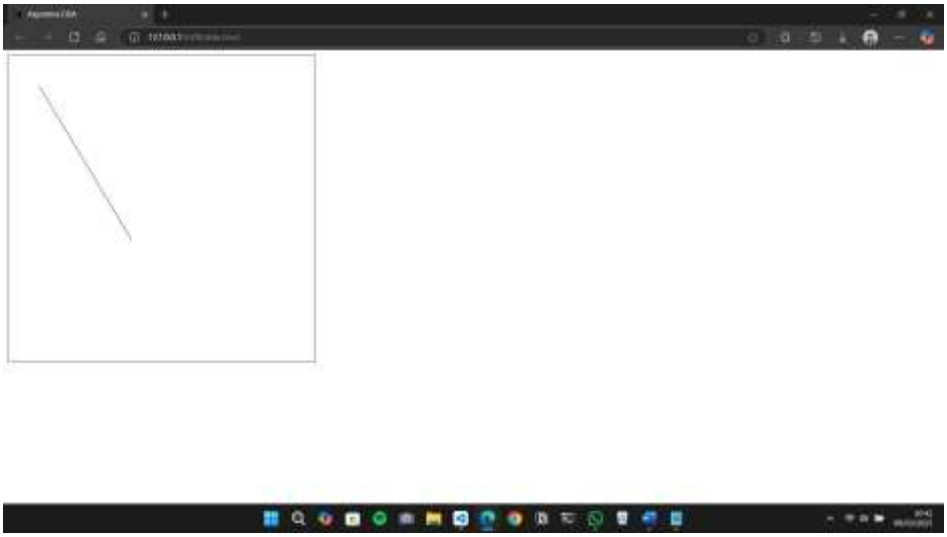
Kelas : B

Grafika Komputer

1. Algoritma Pembentukan Garis **DDA** (Digital Differensial Analyzer)

```
<!DOCTYPE html>
<html lang="id">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Algoritma DDA</title>
</head>
<body>
    <canvas id="canvas" width="500" height="500" style="border:1px solid
black;"></canvas>

    <script>
        function drawPixel(ctx, x, y) {
            ctx.fillStyle = "black";
            ctx.fillRect(x, y, 1, 1);
        }

        function drawLineDDA(x0, y0, x1, y1) {
            const canvas = document.getElementById("canvas");
            const ctx = canvas.getContext("2d");

            let dx = x1 - x0;
            let dy = y1 - y0;
            let steps = Math.abs(dx) > Math.abs(dy) ? Math.abs(dx) :
Math.abs(dy);

            let Xinc = dx / steps;
            let Yinc = dy / steps;

            let x = x0, y = y0;
            for (let i = 0; i <= steps; i++) {
                drawPixel(ctx, Math.round(x), Math.round(y));
                x += Xinc;
                y += Yinc;
            }
        }
        drawLineDDA(50, 50, 200, 300);
    </script>
</body>
</html>
```



2. Algoritma Pembentukan Garis Bresenham

```
<!DOCTYPE html>
<html lang="id">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Algoritma Bresenham</title>
</head>
<body>
    <canvas id="canvas" width="500" height="500" style="border:1px solid
black;"></canvas>

    <script>
        function drawPixel(ctx, x, y) {
            ctx.fillStyle = "black";
            ctx.fillRect(x, y, 1, 1);
        }

        function drawLineBresenham(x0, y0, x1, y1) {
            const canvas = document.getElementById("canvas");
            const ctx = canvas.getContext("2d");

            let dx = Math.abs(x1 - x0);
            let dy = Math.abs(y1 - y0);
            let sx = (x0 < x1) ? 1 : -1;
            let sy = (y0 < y1) ? 1 : -1;
            let err = dx - dy;

            while (true) {
                drawPixel(ctx, x0, y0);
                if (x0 === x1 && y0 === y1) break;
                let e2 = 2 * err;
                if (e2 > -dy) {
```

```
                    err -= dy;
                    x0 += sx;
                }
                if (e2 < dx) {
                    err += dx;
                    y0 += sy;
                }
            }
        }

        // Contoh menggambar garis dari (10,10) ke (100, 150)
        drawLineBresenham(10, 10, 100, 150);
    </script>
</body>
</html>
```