

Tugas Pembentukan Garis dengan Algoritma Bresenham dan DDA

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Kelas : CD

1. Garis dengan Algoritma Bresenham

Kode:

```
<!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>
    <h2>Garis dengan Algoritma Bresenham</h2>
    <canvas id="canvas" width="500" height="500" style="border:1px
solid #000;"></canvas>

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

      function garisBresenham(x1, y1, x2, y2) {
        let canvas = document.getElementById("canvas");
        let ctx = canvas.getContext("2d");

        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) {
```

```

        pixel(ctx, 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;
        }
    }
}

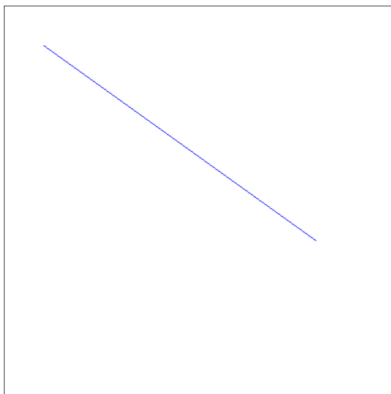
garisBresenham(50, 50, 400, 300);
</script>
</body>
</html>

```

Hasil :



Garis dengan Algoritma Bresenham



2. Garis dengan Algoritma DDA

Kode :

```
<!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>
  <h2>Garis dengan Algoritma DDA</h2>
  <canvas id="canvas" width="500" height="500" style="border:1px solid
#000;"></canvas>

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

    function garisDda(x1, y1, x2, y2) {
      let canvas = document.getElementById("canvas");
      let ctx = canvas.getContext("2d");

      let dx = x2 - x1;
      let dy = y2 - y1;
      let steps = Math.max(Math.abs(dx), Math.abs(dy));

      let xIncrement = dx / steps;
      let yIncrement = dy / steps;

      let x = x1;
      let y = y1;

      for (let i = 0; i <= steps; i++) {
        pixel(ctx, Math.round(x), Math.round(y));
        x += xIncrement;
        y += yIncrement;
      }
    }
  </script>
</body>
</html>
```

```
}  
  
    garisDda(50, 50, 400, 300);  
    </script>  
</body>  
</html>
```

Hasil:

