

TUGAS PEMBUATAN LINGKARAN BRASENHAM DAN MIDPOINT

“Laporan ini diajukan guna memenuhi tugas Mata Kuliah Grafika Komputer”



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**PROGRAM STUDI PENDIDIKAN TEKNOLOGI INFORMASI
JURUSAN PENDIDIKAN MATEMATIKA DAN ILMU PENGETAHUAN ALAM
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN
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CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Tugas Grafkom Lingkaran</title>
  <style>
    canvas {
      border: 1px solid #000000;
    }
  </style>
</head>
<body>
  <h1 align="center">TUGAS MEMBUAT LINGKARAN BRESENHAM DAN
MIDPOINT</h1>
  <canvas id="myCanvas" width="300" height="300"></canvas>
  <canvas id="midpoint" width="300" height="300"></canvas>

  <script>
    let canvas = document.getElementById("myCanvas");
    let ctx = canvas.getContext("2d");
    let midpoint = document.getElementById("midpoint");
    let ctxmidpoint = midpoint.getContext("2d");

    function titik(x, y, warna) {
      ctx.fillStyle = warna;
      ctx.fillRect(x, y, 1, 1);
    }

    function gambarTitikSimetris(x0, y0, x, y, warna) {
      titik(x0 + x, y0 + y, warna);
      titik(x0 - x, y0 + y, warna);
      titik(x0 + x, y0 - y, warna);
```

```
    titik(x0 - x, y0 - y, warna);  
    titik(x0 + y, y0 + x, warna);  
    titik(x0 - y, y0 + x, warna);  
    titik(x0 + y, y0 - x, warna);  
    titik(x0 - y, y0 - x, warna);  
}
```

```
function linkBres(x0, y0, r, warna) {  
    let d = 3 - (2 * r);  
    let x = 0, y = r;  
  
    while (x <= y) {  
        gambarTitikSimetris(x0, y0, x, y, warna);  
        if (d <= 0) {  
            d = d + (4 * x) + 6;  
        } else {  
            d = d + 4 * (x - y) + 10;  
            y--;  
        }  
        x++;  
    }  
}
```

```
function buatGambar() {  
    ctx.clearRect(0, 0, canvas.width, canvas.height);  
    let x0 = parseInt(document.getElementById("X").value);  
    let y0 = parseInt(document.getElementById("Y").value);  
    let r = parseInt(document.getElementById("rad").value);  
    let warna = document.getElementById("warna").value;  
    linkBres(x0, y0, r, warna);  
}
```

```
function drawmidpoint(x0, y0, r) {  
    let x = r, y = 0;
```

```

let d = 1 - r;

while (x >= y) {
    ctxmidpoint.fillRect(x0 + x, y0 + y, 1, 1);
    ctxmidpoint.fillRect(x0 - x, y0 + y, 1, 1);
    ctxmidpoint.fillRect(x0 + x, y0 - y, 1, 1);
    ctxmidpoint.fillRect(x0 - x, y0 - y, 1, 1);
    ctxmidpoint.fillRect(x0 + y, y0 + x, 1, 1);
    ctxmidpoint.fillRect(x0 - y, y0 + x, 1, 1);
    ctxmidpoint.fillRect(x0 + y, y0 - x, 1, 1);
    ctxmidpoint.fillRect(x0 - y, y0 - x, 1, 1);

    y++;
    if (d > 0) {
        x--;
        d += 2 * (y - x) + 5;
    } else {
        d += 2 * y + 3;
    }
}

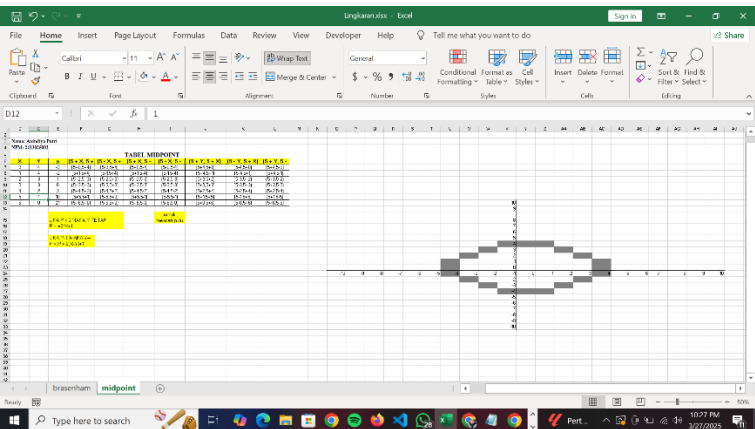
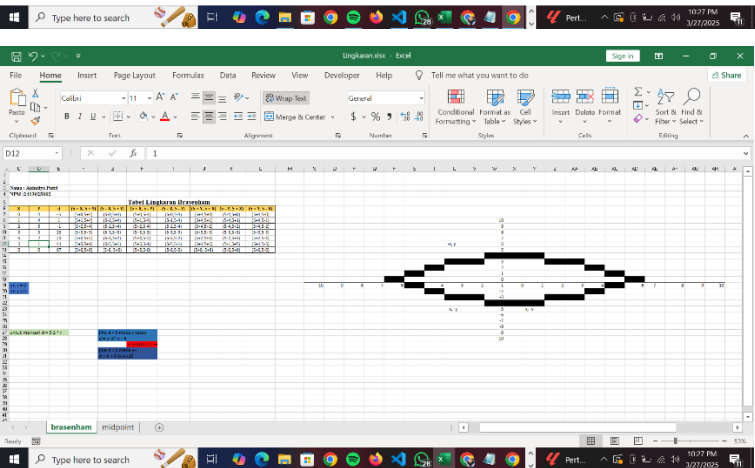
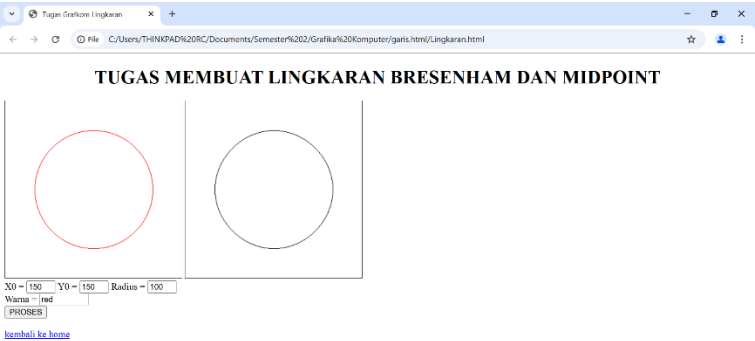
drawmidpoint(150, 150, 100);
</script>

<br>
X0 = <input id="X" type="text" size="2">
Y0 = <input id="Y" type="text" size="2">
Radius = <input id="rad" type="text" size="2">
<br>
Warna = <input id="warna" type="text" size="7" placeholder="contoh: red">
<br>
<button type="button" onclick="buatGambar()">PROSES</button>
<br><br>

```

</html>

HASIL



Link video: <https://drive.google.com/file/d/1--LknU5bagSu2lbhAbSspBzCCRm8MyID/view?usp=drivesdk>