

Tugas Grafika Komputer

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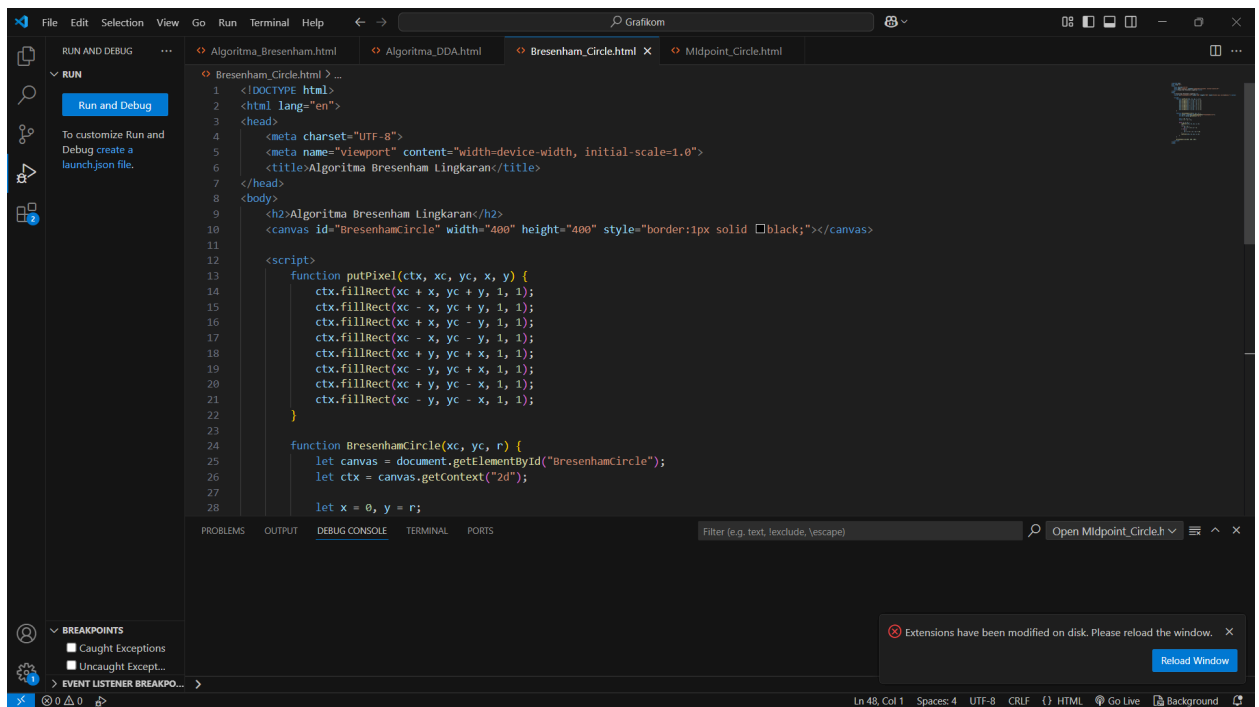
NPM : 2217051077

Kelas : D

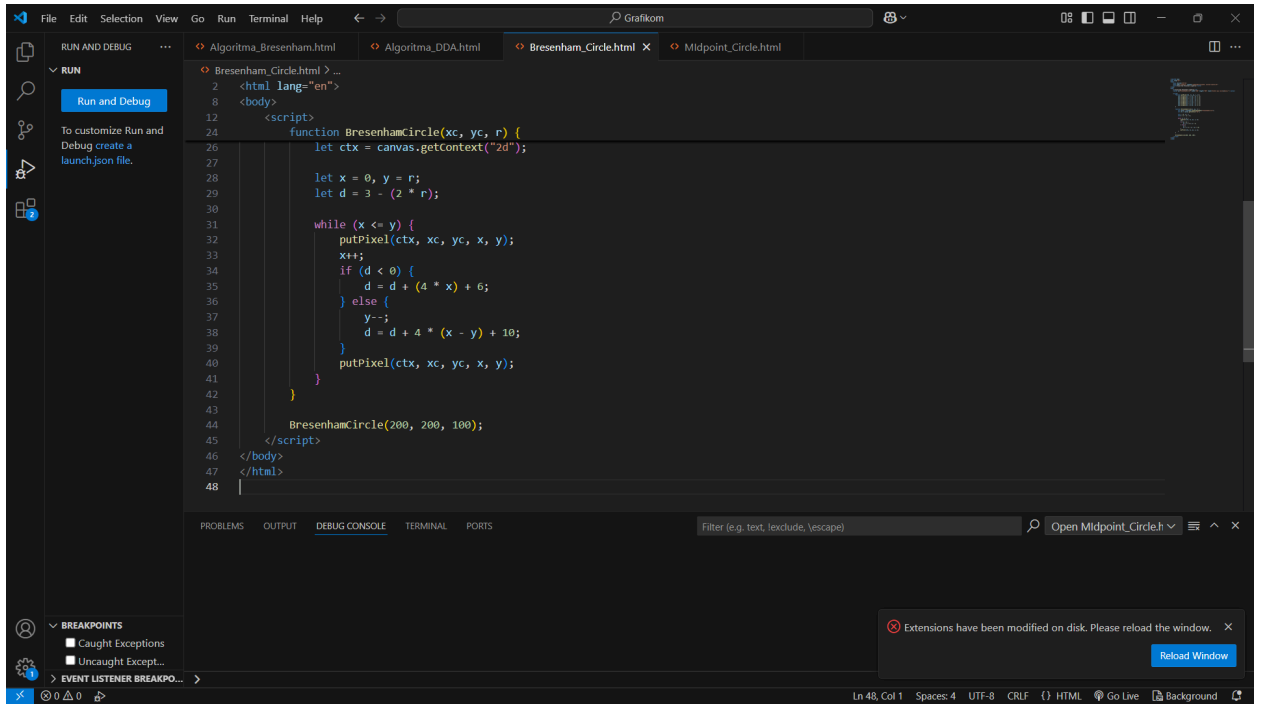
Tugas ke 3 Grafika Komputer Algoritma Pembentukan Lingkaran

1. Algoritma Bresenham

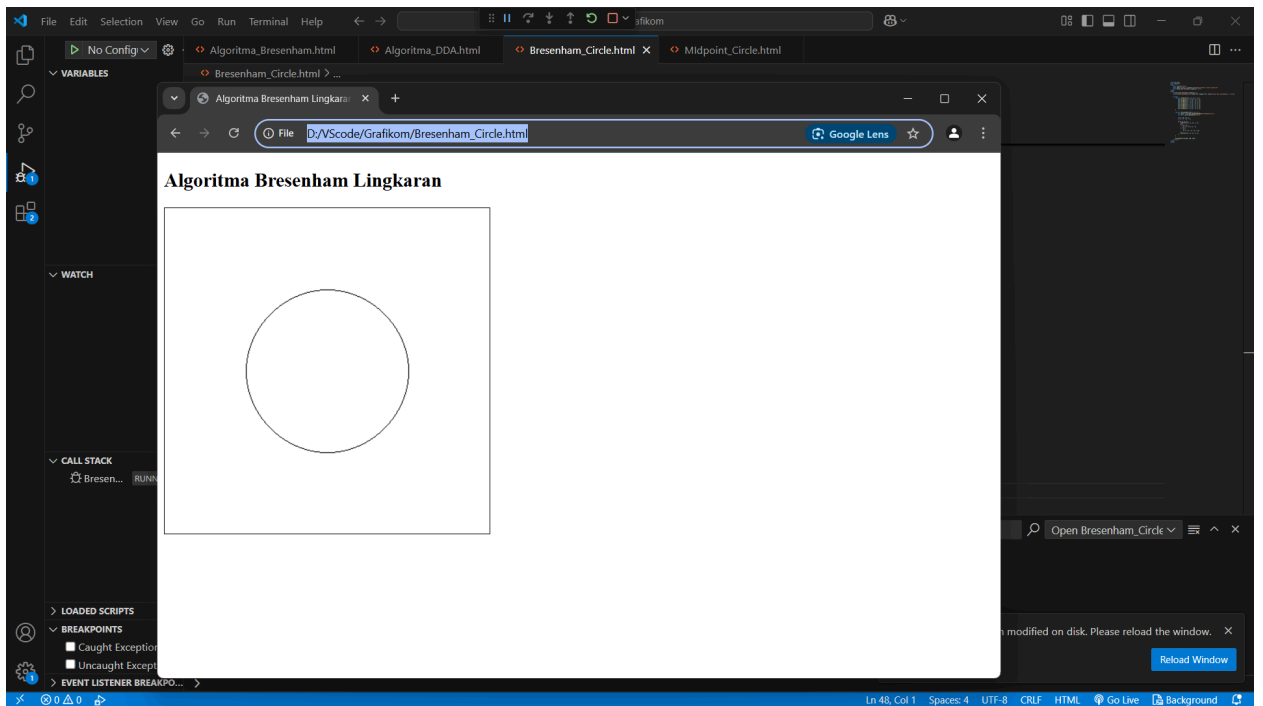
Sourcecode:



```
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 Lingkaran</title>
7 </head>
8 <body>
9   <h2>Algoritma Bresenham Lingkaran</h2>
10  <canvas id="BresenhamCircle" width="400" height="400" style="border:1px solid black;"></canvas>
11
12  <script>
13    function putPixel(ctx, xc, yc, x, y) {
14      ctx.fillRect(xc + x, yc + y, 1, 1);
15      ctx.fillRect(xc - x, yc + y, 1, 1);
16      ctx.fillRect(xc + x, yc - y, 1, 1);
17      ctx.fillRect(xc - x, yc - y, 1, 1);
18      ctx.fillRect(xc + y, yc + x, 1, 1);
19      ctx.fillRect(xc - y, yc + x, 1, 1);
20      ctx.fillRect(xc + y, yc - x, 1, 1);
21      ctx.fillRect(xc - y, yc - x, 1, 1);
22    }
23
24    function BresenhamCircle(xc, yc, r) {
25      let canvas = document.getElementById("BresenhamCircle");
26      let ctx = canvas.getContext("2d");
27
28      let x = 0, y = r;
```

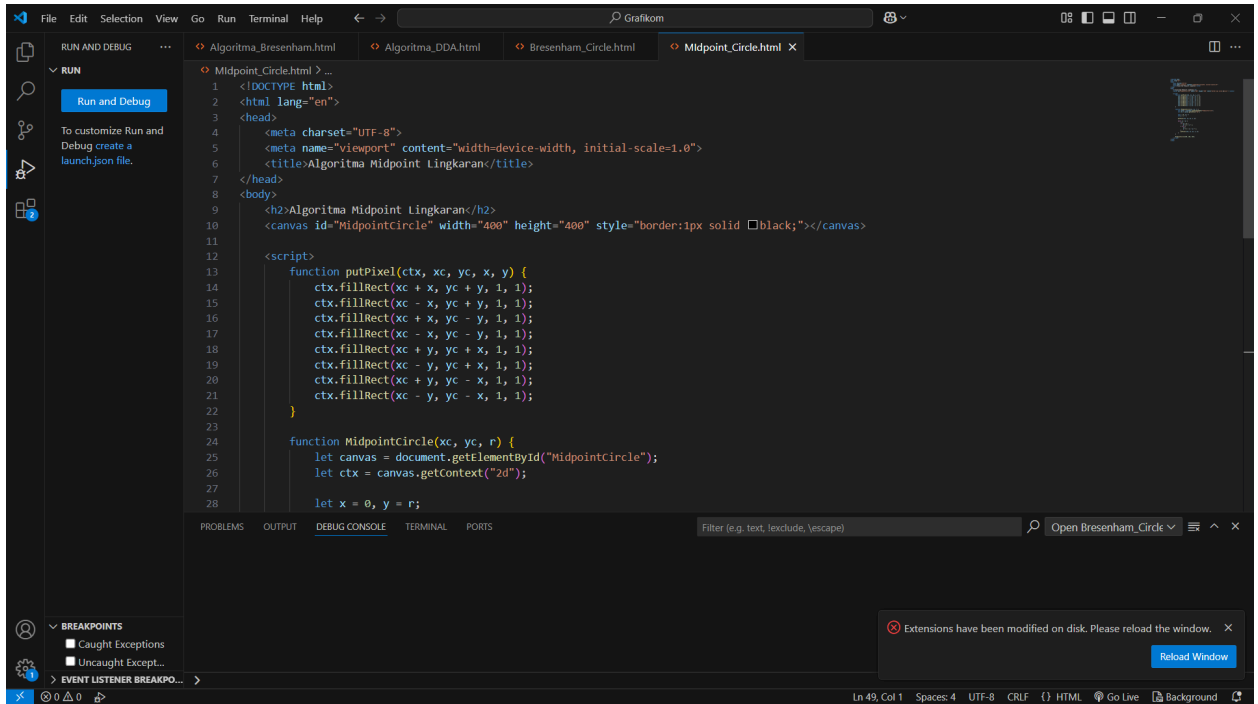


Output:

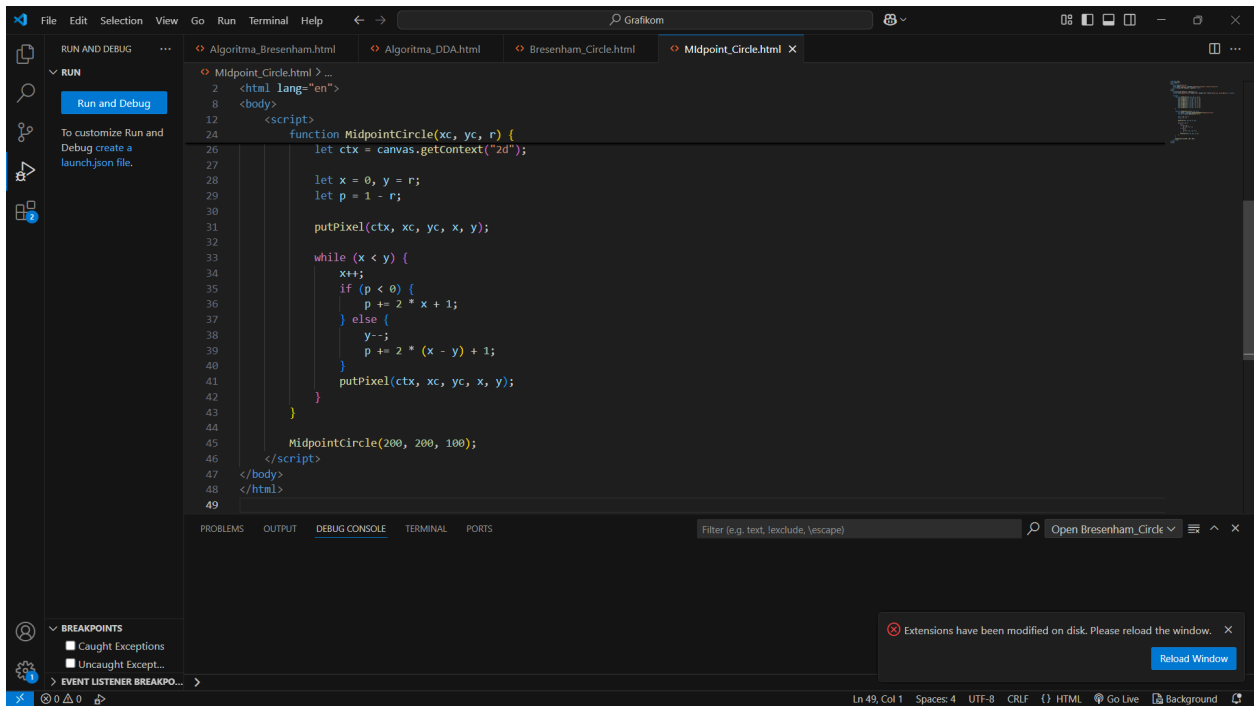


2. Algoritma Midpoint

Sourcecode :



```
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 Midpoint Lingkaran</title>
7 </head>
8 <body>
9   <h2>Algoritma Midpoint Lingkaran</h2>
10  <canvas id="MidpointCircle" width="400" height="400" style="border:1px solid black;"></canvas>
11
12  <script>
13    function putPixel(ctx, xc, yc, x, y) {
14      ctx.fillRect(xc + x, yc + y, 1, 1);
15      ctx.fillRect(xc - x, yc + y, 1, 1);
16      ctx.fillRect(xc + x, yc - y, 1, 1);
17      ctx.fillRect(xc - x, yc - y, 1, 1);
18      ctx.fillRect(xc + y, yc + x, 1, 1);
19      ctx.fillRect(xc - y, yc + x, 1, 1);
20      ctx.fillRect(xc + y, yc - x, 1, 1);
21      ctx.fillRect(xc - y, yc - x, 1, 1);
22    }
23
24    function MidpointCircle(xc, yc, r) {
25      let canvas = document.getElementById("MidpointCircle");
26      let ctx = canvas.getContext('2d');
27
28      let x = 0, y = r;
```



```
26      let ctx = canvas.getContext("2d");
27
28      let x = 0, y = r;
29      let p = 1 - r;
30
31      putPixel(ctx, xc, yc, x, y);
32
33      while (x < y) {
34        x++;
35        if (p < 0) {
36          p += 2 * x + 1;
37        } else {
38          y--;
39          p += 2 * (x - y) + 1;
40        }
41        putPixel(ctx, xc, yc, x, y);
42      }
43
44      MidpointCircle(200, 200, 100);
45    }
46  </script>
47 </body>
48 </html>
49
```

Output :

