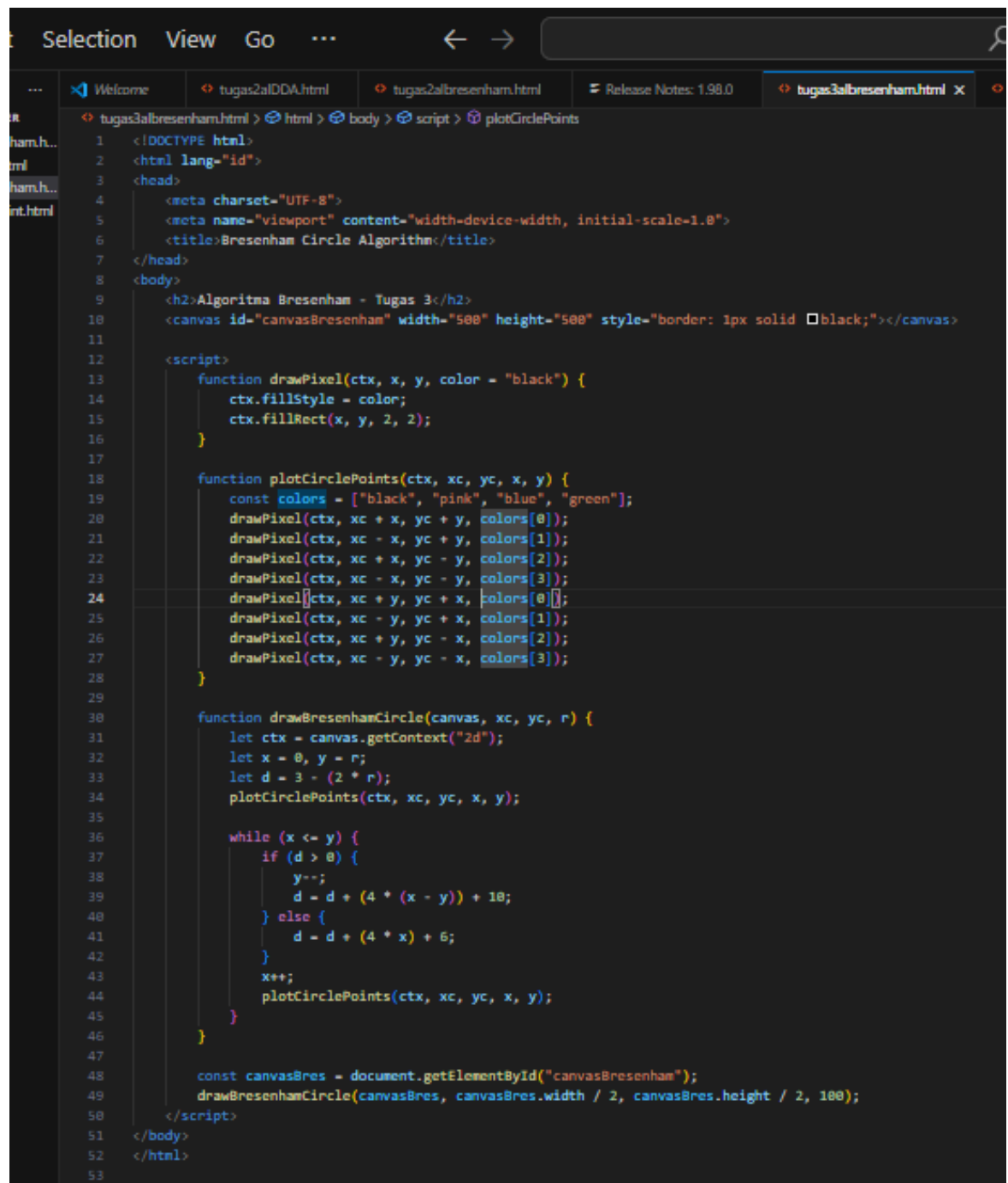


NAMA : RICA LIZANIA
NPM : 2217051046
KELAS : D

TUGAS 3 GRAFIKA KOMPUTER (ALGORITMA PEMBENTUKAN LINGKARAN)

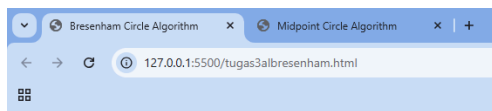
1. Algoritma Bresenham

a. Code

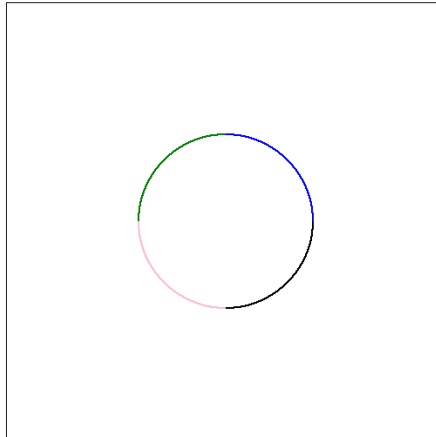


```
Selection View Go ... < >
... Welcome tugas2alDDA.html tugas2albresenham.html Release Notes: 1.98.0 tugas3albresenham.html x
tugas3albresenham.html > html > body > script > plotCirclePoints
1 <!DOCTYPE html>
2 <html lang="id">
3 <head>
4 <meta charset="UTF-8">
5 <meta name="viewport" content="width=device-width, initial-scale=1.0">
6 <title>Bresenham Circle Algorithm</title>
7 </head>
8 <body>
9 <h2>Algoritma Bresenham - Tugas 3</h2>
10 <canvas id="canvasBresenham" width="500" height="500" style="border: 1px solid black;"></canvas>
11
12 <script>
13 function drawPixel(ctx, x, y, color = "black") {
14     ctx.fillStyle = color;
15     ctx.fillRect(x, y, 2, 2);
16 }
17
18 function plotCirclePoints(ctx, xc, yc, x, y) {
19     const colors = ["black", "pink", "blue", "green"];
20     drawPixel(ctx, xc + x, yc + y, colors[0]);
21     drawPixel(ctx, xc - x, yc + y, colors[1]);
22     drawPixel(ctx, xc + x, yc - y, colors[2]);
23     drawPixel(ctx, xc - x, yc - y, colors[3]);
24     drawPixel(ctx, xc + y, yc + x, colors[0]);
25     drawPixel(ctx, xc - y, yc + x, colors[1]);
26     drawPixel(ctx, xc + y, yc - x, colors[2]);
27     drawPixel(ctx, xc - y, yc - x, colors[3]);
28 }
29
30 function drawBresenhamCircle(canvas, xc, yc, r) {
31     let ctx = canvas.getContext("2d");
32     let x = 0, y = r;
33     let d = 3 - (2 * r);
34     plotCirclePoints(ctx, xc, yc, x, y);
35
36     while (x <= y) {
37         if (d > 0) {
38             y--;
39             d = d + (4 * (x - y)) + 10;
40         } else {
41             d = d + (4 * x) + 6;
42         }
43         x++;
44         plotCirclePoints(ctx, xc, yc, x, y);
45     }
46 }
47
48 const canvasBres = document.getElementById("canvasBresenham");
49 drawBresenhamCircle(canvasBres, canvasBres.width / 2, canvasBres.height / 2, 100);
50 </script>
51 </body>
52 </html>
53
```

b. Output



Algoritma Bresenham - Tugas 3



2. Algoritma MidPoint

a. Code

```
File Edit Selection View Go ...
EXPLORER
  GRAFIKA-KOMPUTER
    tugas2albresenham.h...
    tugas2alDDA.html
    tugas3albresenham.h...
    tugas3alMidPoint.html
  ...
  Welcome
  tugas2alDDA.html
  tugas2albresenham.html
  Release Notes: 1.98.0
  tugas3albresenham.html
  ...

tugas3alMidPoint.html > html
1 <!DOCTYPE html>
2 <html lang="id">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <title>Midpoint Circle Algorithm</title>
7 </head>
8 <body>
9   <h2>Algoritma Midpoint - Tugas 3</h2>
10  <canvas id="canvasMidpoint" width="500" height="500" style="border: 1px solid black;"></canvas>
11
12  <script>
13    function drawPixel(ctx, x, y, color = "black") {
14      ctx.fillStyle = color;
15      ctx.fillRect(x, y, 2, 2);
16    }
17
18    function plotCirclePoints(ctx, xc, yc, x, y) {
19      let colors = ["blue", "pink", "green", "black"];
20      drawPixel(ctx, xc + x, yc + y, colors[0]);
21      drawPixel(ctx, xc - x, yc + y, colors[1]);
22      drawPixel(ctx, xc + x, yc - y, colors[2]);
23      drawPixel(ctx, xc - x, yc - y, colors[3]);
24      drawPixel(ctx, xc + y, yc + x, colors[0]);
25      drawPixel(ctx, xc - y, yc + x, colors[1]);
26      drawPixel(ctx, xc + y, yc - x, colors[2]);
27      drawPixel(ctx, xc - y, yc - x, colors[3]);
28    }
29
30    function drawMidpointCircle(canvas, xc, yc, r) {
31      let ctx = canvas.getContext("2d");
32      let x = 0, y = r;
33      let p = 1 - r;
34      plotCirclePoints(ctx, xc, yc, x, y);
35
36      while (x <= y) {
37        x++;
38        if (p < 0) {
39          p += 2 * x + 1;
40        } else {
41          y--;
42          p += 2 * (x - y) + 1;
43        }
44        plotCirclePoints(ctx, xc, yc, x, y);
45      }
46    }
47
48    const canvasMid = document.getElementById("canvasMidpoint");
49    drawMidpointCircle(canvasMid, canvasMid.width / 2, canvasMid.height / 2, 100);
50  </script>
51 </body>
52 </html>
```

b. Output

