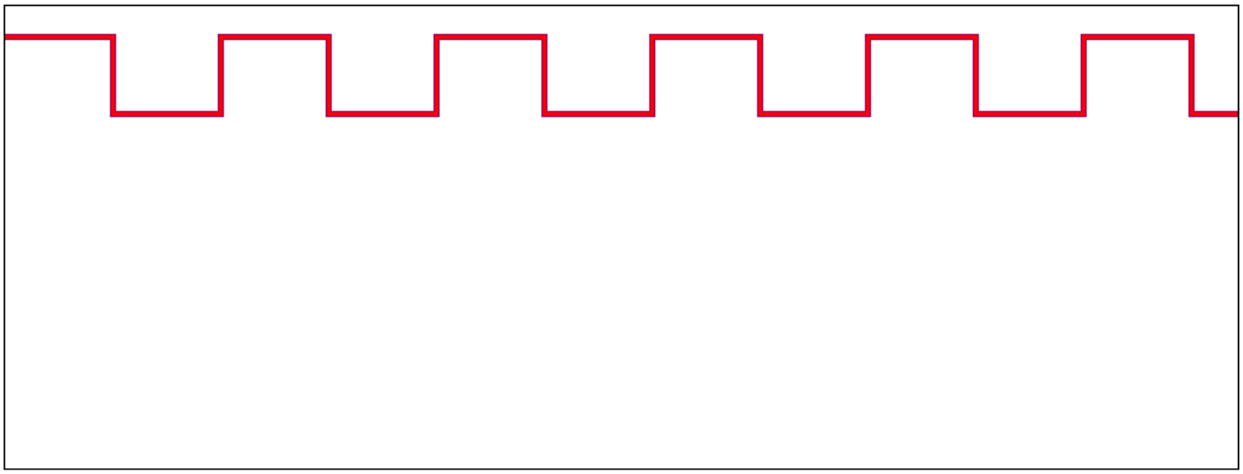
Łukasz Zawodziński gr. 3
nr Indexu: 136699

Interaktywna grafika i prezentacja danych

Laboratorium 6

Podstawy obsługi Canvas

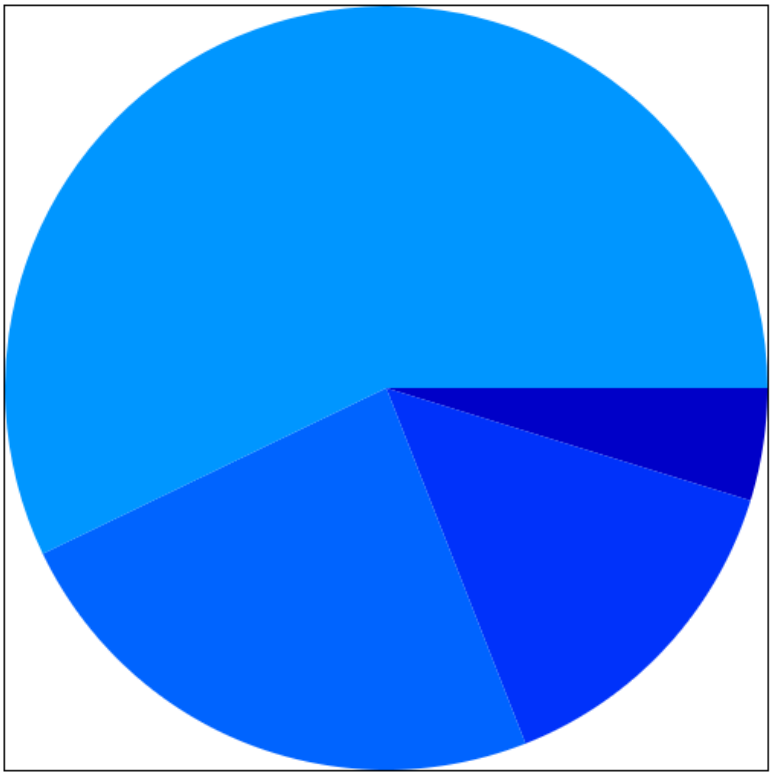
Zadanie 1



```
<canvas id="myCanvas0" width="800" height="300" style="border:1px solid
#000000;"></canvas>

    <script>
        const canvas = document.getElementById("myCanvas0");
        const ctx = canvas.getContext("2d");

        let szerokosc = 70;
        let wysokosc = 20;


        ctx.beginPath();
        ctx.lineWidth = 3;
        ctx.moveTo(0,wysokosc);
```

```
        for (let i = 0; i < 100; i++) {

            const x = i * szerokosc;
            console.log(x, wysokosc);

            if(i%2==0){
                ctx.strokeStyle = "blue";
                ctx.lineTo(x,wysokosc);
                ctx.lineTo(x+szerokosc,wysokosc);

            }
            else{
                ctx.strokeStyle = "red";
                ctx.lineTo(x,szerokosc);
                ctx.lineTo(x+szerokosc,szerokosc);
            }

            ctx.stroke();
        }
    </script>
```

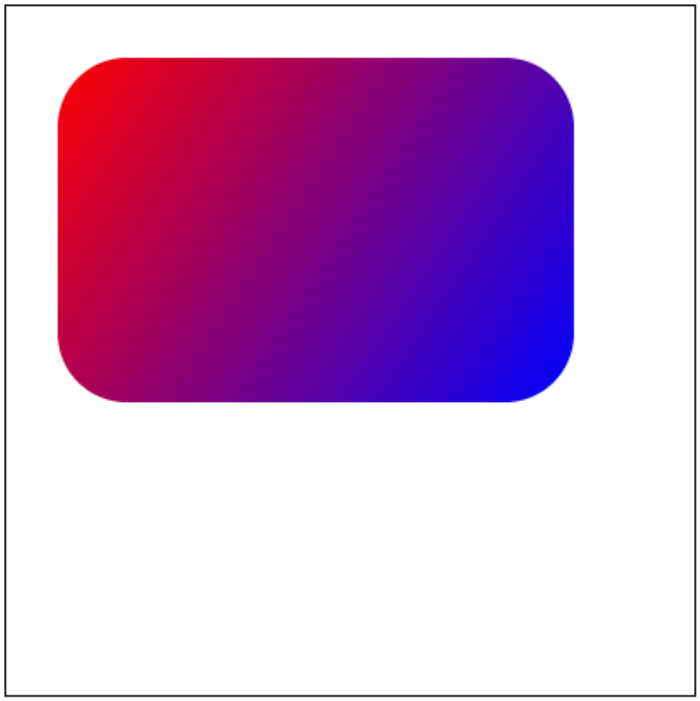
Zadanie 2



```
 <canvas id="myCanvas2" width="500" height="500" style="border:1px solid
#000000;"></canvas>


    <script>
        const canvas2 = document.getElementById("myCanvas2");
```

```
        const ctx2 = canvas2.getContext("2d");
         var tab = [10, 30, 50, 120];

         var total = tab.reduce(function(sum, value) {
             return sum + value;
         }, 0);

         var radius = 250;
         var centerX = canvas2.width / 2;
         var centerY = canvas2.height / 2;
         var startAngle = 0;

        var currentAngle = startAngle;



        for (var i = 0; i < tab.length; i++) {
            var value = tab[i];
            var sliceAngle = (value / total) * (2 * Math.PI);

            ctx2.fillStyle = 'rgba(0 , ' + (0 + i * 50) + ', ' + (200 + i * 50)
+ ', 1)';

            ctx2.beginPath();
            ctx2.lineTo(centerX, centerY);
            ctx2.arc(centerX, centerY, radius, currentAngle, currentAngle +
sliceAngle);
            ctx2.closePath();
            ctx2.fill()

            currentAngle += sliceAngle;
        }

    </script>
```

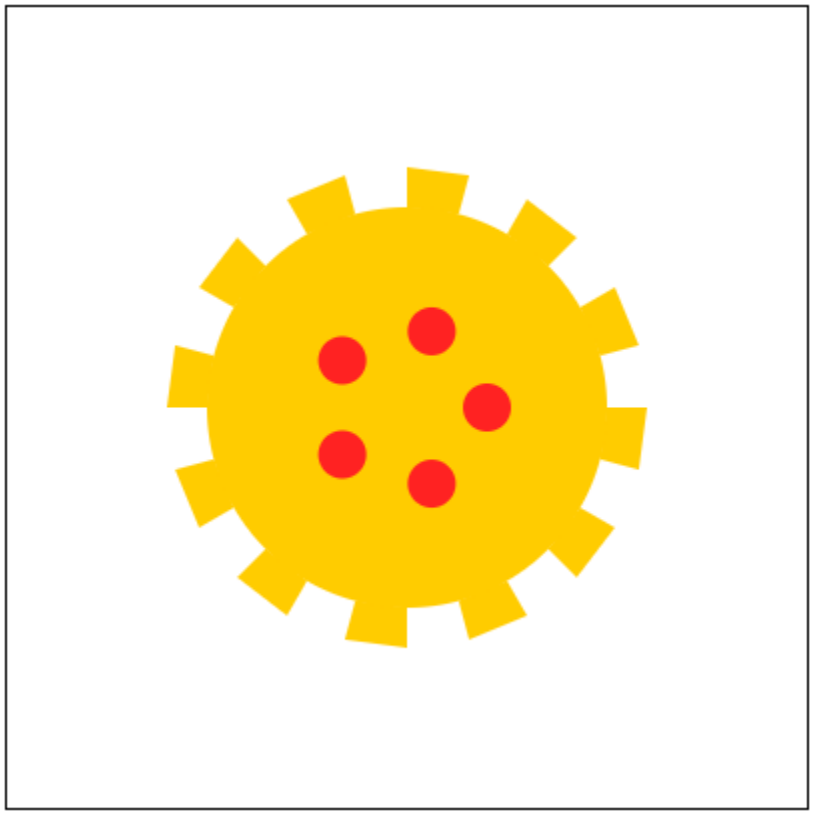
Zadanie 3



```
<canvas id="myCanvas3" width="400" height="400" style="border:1px solid
#000000;"></canvas>
    <script>
        var canvas3 = document.getElementById('myCanvas3');
        var ctx3 = canvas3.getContext('2d');


        var x = 30, y = 30, width = 300, height = 200, radius = 40;

        var gradient = ctx3.createLinearGradient(x, y, x + width, y + height);
        gradient.addColorStop(0, 'rgba(255, 0, 0, 1)');  //czerwony
        gradient.addColorStop(1, 'rgba(0, 0, 255, 1)');  //niebieski


        ctx3.beginPath();
        ctx3.moveTo(x + radius, y);
        ctx3.lineTo(x + width - radius, y);
        ctx3.arcTo(x + width, y, x + width, y + height, radius);
        ctx3.lineTo(x + width, y + height - radius);
        ctx3.arcTo(x + width, y + height, x + width - radius, y + height,
radius);
        ctx3.lineTo(x + radius, y + height);
        ctx3.arcTo(x, y + height, x, y + height - radius, radius);
        ctx3.lineTo(x, y + radius);
```

```
        ctx3.arcTo(x, y, x + radius, y, radius);
        ctx3.closePath();
        ctx3.fillStyle = gradient;
        ctx3.fill();

    </script>
    <br>
```

Zadanie 4



```
<canvas id="myCanvas4" width="400" height="400" style="border:1px solid
#000000;"></canvas>
    <script>
        var canvas4 = document.getElementById("myCanvas4");
        var ctx4 = canvas4.getContext("2d");

        //koło
        var numTeeth = 12;
        var r0 = 100;
        var r1 = 100;
        var r2 = 120;
        var centerX = canvas4.width / 2;
        var centerY = canvas4.height / 2;
```

```
    ctx4.fillStyle = "#ffcc00";
    for (var i = 0; i < numTeeth; i++) {
        var angle = (2 * Math.PI / numTeeth) * i;
        var x1 = centerX + r1 * Math.cos(angle);
        var y1 = centerY + r1 * Math.sin(angle);

        var x2 = centerX + r2 * Math.cos(angle);
        var y2 = centerY + r2 * Math.sin(angle);

        var x3 = centerX + r2 * Math.cos(angle + Math.PI / numTeeth);
        var y3 = centerY + r2 * Math.sin(angle + Math.PI / numTeeth);

        var x4 = centerX + r1 * Math.cos(angle + Math.PI / numTeeth);
        var y4 = centerY + r1 * Math.sin(angle + Math.PI / numTeeth);

        ctx4.beginPath();
        ctx4.moveTo(x1, y1);
        ctx4.lineTo(x2, y2);
        ctx4.lineTo(x3, y3);
        ctx4.lineTo(x4, y4);
        ctx4.closePath();
        ctx4.fill();
    }

    ctx4.beginPath();
    ctx4.arc(centerX, centerY, r0, 0, 2 * Math.PI);
    ctx4.fillStyle = "#ffcc00";
    ctx4.fill();

    //otwory
    var holeRadius = 12;
    var holeCount = 5;
    for (var j = 0; j < holeCount; j++) {
        var angleHole = (2 * Math.PI / holeCount) * j;
        var holeX = centerX + (r0 - 60) * Math.cos(angleHole);
        var holeY = centerY + (r0 - 60) * Math.sin(angleHole);

        ctx4.beginPath();
        ctx4.arc(holeX, holeY, holeRadius, 0, 2 * Math.PI);
        ctx4.fillStyle = "#ff2222";
        ctx4.fill();
    }

</script>
```