Sprawozdanie 2

Zajęcia: Grafika Komputerowa
Prowadzący: prof.dr hab. Vasyl Martsenyuk

Laboratorium nr 1

Temat: Przekształcenia 2D w bibliotece Java 2D

Wariant: 14-kąt, figura 7

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Informatyka I stopień niestacjonarne

semestr 4 gr2a

1. Polecenie:
   - Narysować figurę zgodnie z wariantem
   - Stworzyć narzędzie do czyszczenia canvas, dodanie nowego koloru, rysowanie szeregu wielokątów
2. Dane
   - pola wyboru służące do wybrania koloru i rysowanej figury

3. Wykorzystane komendy:
   - rysowanie figury

```
function draw() {

    graphics.clearRect(0,0,600,600);

    graphics.beginPath();
    graphics.fillStyle = "#ff00fe";
    graphics.moveTo(300, 300);
    graphics.lineTo(240, 222);
    graphics.lineTo(364, 222);
    graphics.lineTo(300, 300);
    graphics.moveTo(240, 222);
    graphics.lineTo(255, 191);
    graphics.lineTo(349, 191);
    graphics.lineTo(364, 222);
    graphics.fill();
    graphics.stroke();


    graphics.beginPath();
    graphics.fillStyle = "#FFFFFF";
    graphics.strokeStyle ="#FFFFFF";
    graphics.fillCircle(270,208,8);
    graphics.fillCircle(335,208,8);
    graphics.fill();

    graphics.fillStyle = "#000000";
    graphics.strokeStyle ="#000000";
    graphics.fillCircle(268,208,4);
    graphics.fillCircle(333,208,4);
    graphics.fill();

    graphics.fillStyle = "#FFFFFF";
    graphics.fillCircle(267,207,1.5);
    graphics.fillCircle(332,207,2);
    graphics.fill();
    graphics.stroke();


    graphics.beginPath();
    graphics.fillStyle = "#000000";
    graphics.strokeStyle ="#000000";
    graphics.moveTo(280, 250);
    graphics.bezierCurveTo(290, 265, 310, 265, 320, 250);
    graphics.bezierCurveTo(310, 255, 290, 255, 280, 250);
    graphics.fill();
    graphics.moveTo(279, 245);
    graphics.bezierCurveTo(279.5, 250, 279.5, 250, 277, 252);
    graphics.moveTo(321, 245);
    graphics.bezierCurveTo(319.5, 250, 319.5, 250, 323.5, 252);
    graphics.stroke();


    graphics.fillStyle = "#FFFFFF";
    graphics.fillRect(300, 253.5, 5, 5);
    graphics.strokeRect(300, 253.5, 5, 5);
    graphics.fillRect(295, 253.5, 5, 5);
    graphics.strokeRect(295, 253.5, 5, 5);


} // end of draw()
```

Czyszczenie canvas

```
function clear_canvas(){
    graphics.clearRect(0, 0, canvas.width, canvas.height);
}
```

```
<p>
    <b>Clear Canvas</b>
    <button onclick="clear_canvas()">Wyczyść.</button>
</p>
```

Nowy Kolor

```
if (colorChoice == 0) {
    graphics.fillStyle = randomColorString();
}
else if (colorChoice == 1) {
    graphics.fillStyle = "red";
}
else if (colorChoice == 2) {
    graphics.fillStyle = "green";
}
else if (colorChoice == 3) {
    graphics.fillStyle = "blue";
}
else if (colorChoice == 4) {
    graphics.fillStyle = "black";
}
```

```
<p><b>Color:</b>
    <select id="colorChoice">
        <option value="0">Random</option>
        <option value="1">Red</option>
        <option value="2">Green</option>
        <option value="3">Blue</option>
        <option value="4">Black</option>
    </select>
</p>
<p>
```

Rysowanie zgodnie z wariantem:

```
graphics.fillPoly = function(x, y) {
    var radius = 40;
    var sides = 14;
    var angle = (2 * Math.PI) / sides;
    if (arguments.length < 6)
       return;
    this.beginPath();
    this.moveTo(x + radius, y);
    for (var i = 1; i<=sides; i++){
        var nextX = x + radius * Math.cos(i * angle);
        var NextY = y + radius * Math.sin(i * angle);
        this.lineTo(nextX,NextY);
    }
    this.closePath();
    this.fill();
}
graphics.strokePoly = function(x, y) {
    var radius = 40;
    var sides = 14;
    var angle = (2 * Math.PI) / sides;
    if (arguments.length < 6)
       return;
    this.beginPath();
    this.moveTo(x + radius, y);
    for (var i = 1; i<=sides; i++){
        var nextX = x + radius * Math.cos(i * angle);
        var NextY = y + radius * Math.sin(i * angle);
        this.lineTo(nextX,NextY);
    }
    this.closePath();
    this.stroke();
```

```
<p>
    <b>Tool</b>
    <select id="tools">
        <option value="0">kwadrat</option>
        <option value="1">Mój Wariant (14)</option>
    </select>
</p>
```

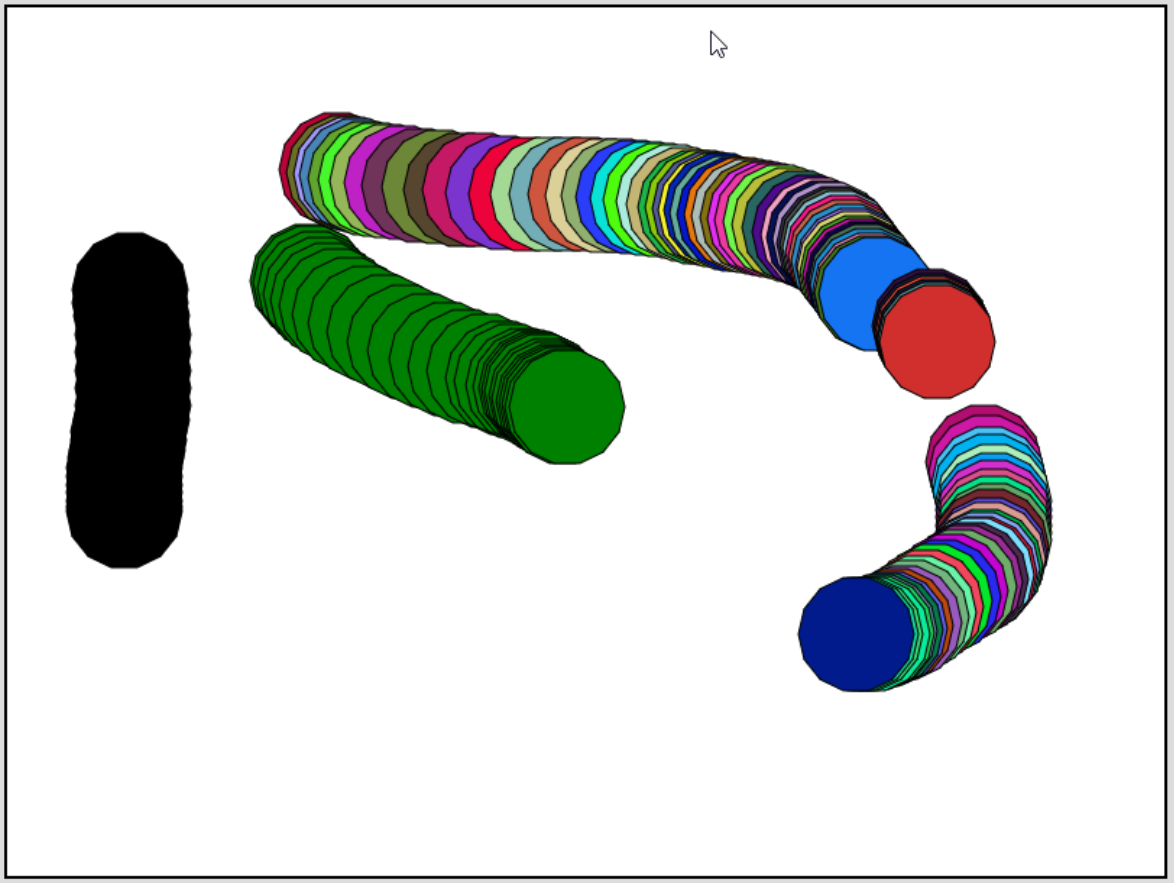
4. Wyniki działania:

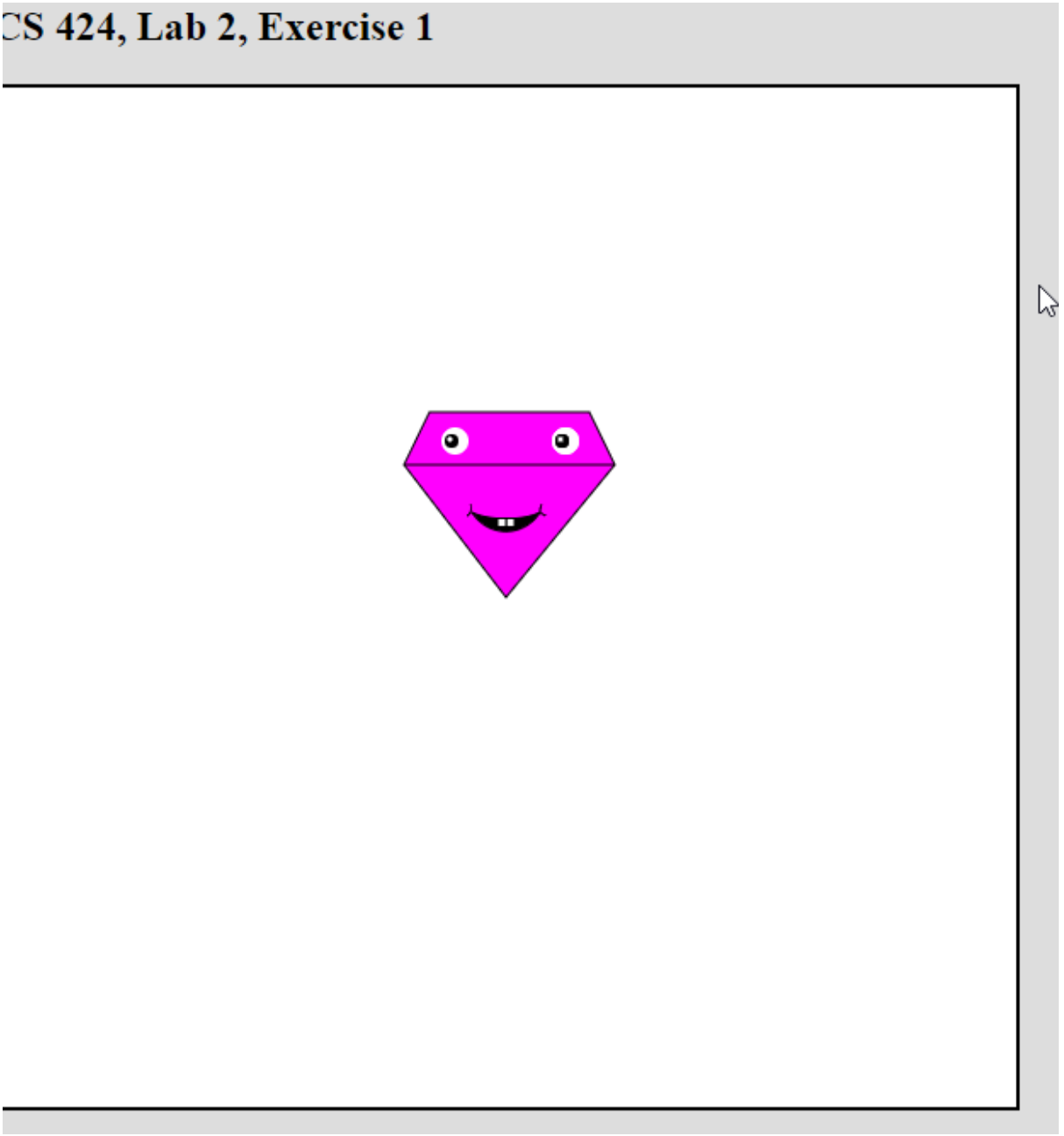
Lab 2, Exercise 2: Mousing

Color: Random

Clear Canvas Wyczyść.

Tool Mój Wariant (3)





5. Wnioski:
    - HTML Canvas to narzędzie pozwalające na tworzenie zaawansowanych grafik wprzeglądarce
    - można tworzyć rózne style, kolor, grubość linii
    - obsługuje wydarzenia myszy, kliknięcia, najechania