MINISTERUL EDUCAȚIEI, CULTURII ȘI CERCETĂRII
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Report

Laboratory work n.1

of Computer Graphics

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1. Purpose of the Laboratory Work

According to the solved problem, I can formulate the purpose of this laboratory work was: to get to know how the Processing Application works, to study the basics of the syntax and writing in Java style code, that is the base of Processing Application, to use as many 2D primitive shapes in order to compose a whole image.

2. Condition of the Laboratory Work

1) Combine 2D primitives in a sketch;

2) Use function setup() and draw() and as many function 2D primitives of as it possible in the sketch, use the function from theory lesson pdf document.

3. The program code

```
void setup () {
  // setting the size of the window
  size(540, 658);
}

void draw () {
  // Setting the size of the margins / frames (stroke) of
the shapes
  stroke(80);
  strokeWeight(0.8);

  // Background style (fractured glass style)
  fill(0, 102, 51);
  quad(0, 0, 230, 0, 250, 300, 150, 210);
  fill(0, 51, 25);
```

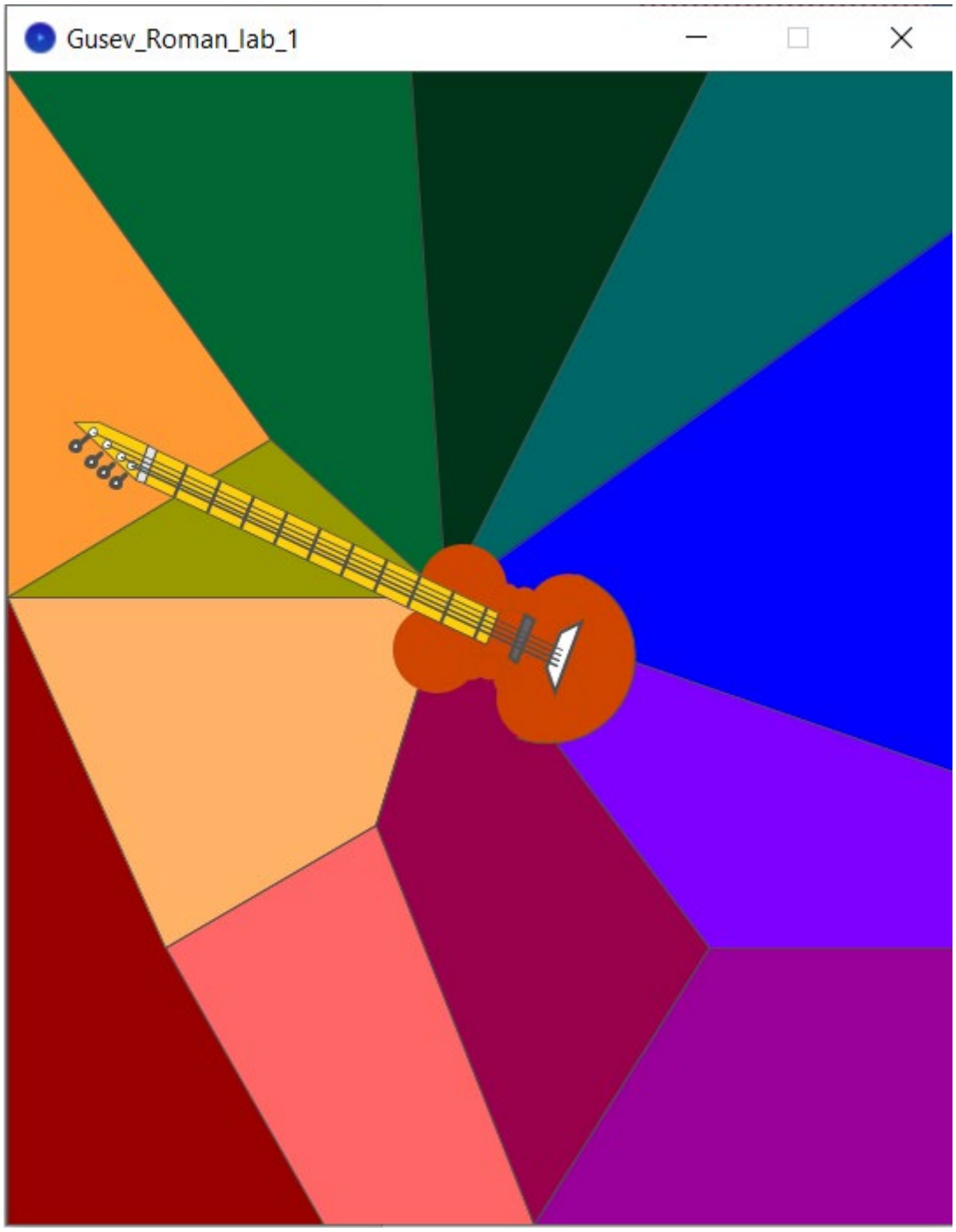
```
triangle(230, 0, 400, 0, 250, 300);
fill(0, 102, 102);
quad(400, 0, 540, 0, 540, 90, 250, 300);
fill(0, 0, 255);
quad(540, 90, 540, 250, 540, 400, 250, 300);
fill(127, 0, 255);
quad(250, 300, 540, 400, 540, 500, 400, 500);
fill(153, 0, 153);
quad(400, 500, 540, 500, 540, 658, 300, 658);
fill(153, 0, 76);
quad(250, 300, 400, 500, 300, 658, 210, 430);
fill(255, 102, 102);
quad(210, 430, 300, 658, 180, 658, 90, 500);
fill(153, 0, 0);
quad(90, 500, 180, 658, 0, 658, 0, 300);
fill(255, 178, 102);
quad(250, 300, 210, 430, 90, 500, 0, 300);
fill(255, 153, 51);
triangle(0, 0, 150, 210, 0, 300);
fill(153, 153, 0);
triangle(150, 210, 250, 300, 0, 300);

// Body of the guitar
fill(208, 69, 0);
arc(308, 334, 100, 100, 3*PI/2 + 0.35, 5*PI/2 + 0.35);
strokeWeight(0);
quad(320, 315, 307, 355, 240, 330, 260, 285);
arc(320, 312, 50, 50, PI - 0.4, 3*PI/2 + 0.35);
```

```
circle(260, 295, 50);
circle(245, 330, 50);
arc(304, 358, 50, 50, PI/2, 2*PI);
circle(285, 348, 15);
circle(265, 340, 15);
circle(285, 300, 15);
circle(295, 302, 15);
circle(275, 340, 15);

// Fingerboard of the guitar
strokeWeight(0.8);
fill(255, 207, 9);
quad(78, 235, 85, 216, 280, 309, 273, 327);

// Nut of the fingerboard
fill(230);
quad(78, 235, 85, 216, 80, 213, 73, 233);

// Headstock on the end of the guitar
fill(255, 207, 9);
quad(73, 233, 38, 200, 52, 200, 80, 213);

// Tuners on the headstock
fill(255);
circle(71, 225, 5);
circle(65, 220, 5);
circle(57, 213, 5);
circle(49, 206, 5);
```

```
// Tuning pegs of the tuners
fill(255);
strokeWeight(3);
line(67, 230, 62, 235);
ellipse(62, 235, 5, 5);
line(60, 224, 55, 229);
ellipse(55, 229, 5, 5);
line(53, 218, 48, 223);
ellipse(48, 223, 5, 5);
line(46, 208, 39, 214);
ellipse(39, 214, 5, 5);

// Frets on the fingerboard
fill(255);
strokeWeight(2);
int x1 = 102;
int y1 = 225;
int x2 = 95;
int y2 = 242;
// iteration is used to place more lines in row
for (int i = 0; i < 10; i++) {
  line(x1, y1, x2, y2);
  x1 += 19;
  y1 += 9;
  x2 += 19;
  y2 += 9;
}
```

```
  // Bridge on the body of the guitar
  fill(255);
  quad(315, 320, 307, 340, 312, 354, 327, 314);

  // Neck Pickup on the body of the guitar
  fill(100);
  quad(295, 310, 300, 313, 290, 337, 286, 334);

  // Strunes attached to the Headstock and Bridge
  fill(0);
  strokeWeight(1.5);
  line(71, 225, 313, 339);
  strokeWeight(1.3);
  line(65, 220, 314, 336);
  strokeWeight(1.1);
  line(57, 213, 315, 333);
  strokeWeight(0.9);
  line(49, 206, 316, 330);
}
```

4. Screen printing of program execution



5. Conclusion

By the end of this Laboratory Work nr. 1, I accomplished given task exactly with the requirements. I did a sketch of a guitar, using 2D primitives, especially: quads, circles, ellipses, lines, triangles. Also, I used to functions: setup(), that set up the

canvas size, and draw() that is used to draw my sketch. I have not encountered any troubles during this laboratory work, it was quite an easy task. The only trouble that I encountered was to correctly determine the required position for a certain element on the canvas, but I overcame this trouble by thinking twice and using a real-life piece of paper and drawing and visually thinking about what should I do.