MINISTERUL EDUCAȚIEI, CULTURII ȘI CERCETĂRII AL REPUBLICII MOLDOVA Universitatea Tehnică a Moldovei Facultatea Calculatoare, Informatică şi Microelectronică Departamentul Inginerie Software și Automatică

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Report

Laboratory work n.1

of Computer Graphics

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1. **Purpose of the laboratory work:**

To combine 2D primitives in a sketch.

2. **Condition:**

The objective of this laboratory work is to create a simple interactive simulation using the Processing programming language. Specifically, the aim is to develop a program that can switch between day and night scenes by clicking the mouse.

3. **Program code:**

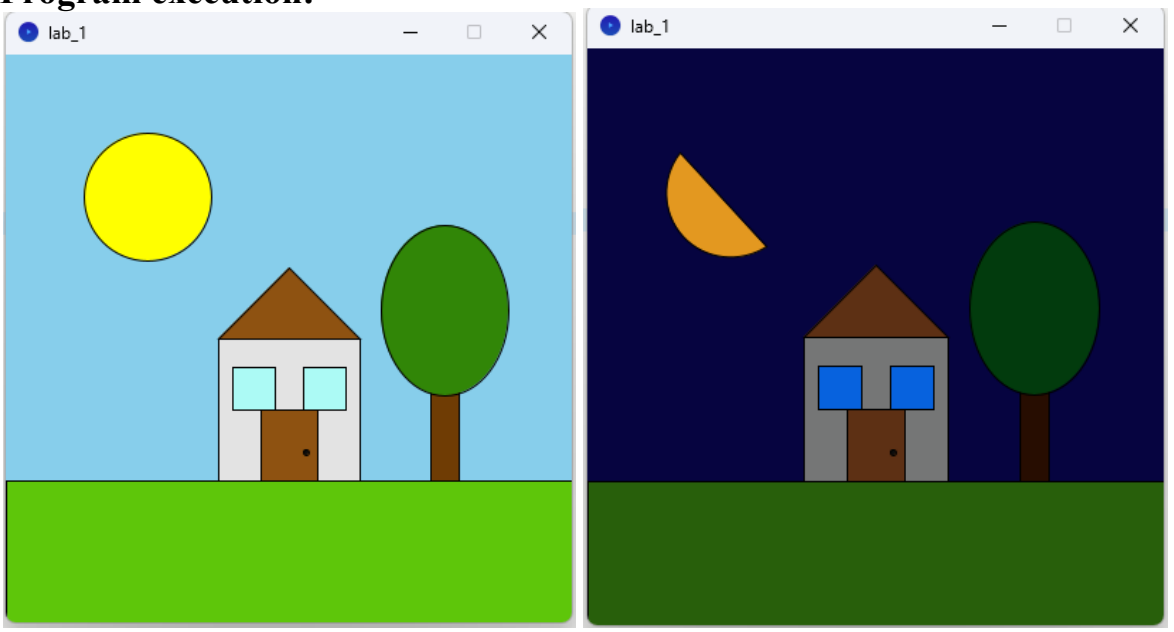
```
boolean isDay = true;

void setup() {
  size(400, 400);
}

void draw() {
  if (isDay) {
    // Draw a blue sky background
    background(#87CEEB);

    // Draw a sun
    fill(#FFFF00);
    ellipse(100, 100, 90, 90);

    // Draw ground
    fill(#5EC60A);
    rect(0, 300, width, height - 300);

    // Draw house
    fill(#E3E3E3);
```

```
  rect(150, 200, 100, 100);
  fill(#8E5211);
  triangle(150, 200, 200, 150, 250, 200);

  // Draw door
  fill(#8E5211);
  rect(180, 250, 40, 50);
  fill(#0F0F0E);
  ellipse(212, 280, 4, 4);

  // Draw windows
  fill(#ACFAF5);
  rect(160, 220, 30, 30);
  rect(210, 220, 30, 30);

  // Draw tree
  fill(#6F3C04);
  rect(300, 200, 20, 100);
  fill(#318607);
  ellipse(310, 180, 90, 120);
}else{
  // Draw dark sky background
  background(#060440);

  // Draw moon
  fill(#E39820);
  arc(100, 100, 90, 90, 1, 3.8, CHORD);

  // Draw ground
```

```
    fill(#285F0B);
    rect(0, 300, width, height - 300);

    // Draw a house
    fill(#757676);
    rect(150, 200, 100, 100);
    fill(#5D3014);
    triangle(150, 200, 200, 150, 250, 200);

    // Draw door
    fill(#5D3014);
    rect(180, 250, 40, 50);
    fill(#0F0F0E);
    ellipse(212, 280, 4, 4);

    // Draw windows
    fill(#0762DE);
    rect(160, 220, 30, 30);
    rect(210, 220, 30, 30);

    // Draw tree
    fill(#270D01);
    rect(300, 200, 20, 100);
    fill(#023B0D);
    ellipse(310, 180, 90, 120);
  }
}

void mouseClicked() {
```

```
  // Toggle between day and night when the mouse is clicked
  isDay = !isDay;
}
```

4. **Program execution:**



5. **Conclusion:**

In this laboratory work, we created an interactive day and night simulation using the Processing programming language. We learned how to use boolean variables and conditional statements to control the display of different elements in the sketch. By clicking the mouse, we were able to toggle between the two scenes, providing an engaging and visually dynamic experience. This exercise demonstrates the potential of programming to create interactive and visually appealing simulations, which can be applied in various fields such as game development, education, and art. It also highlights the importance of event handling in user interaction with software applications.