Project 1

Programming for Design

By Taylor Campbell (u3216807)

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Reflection

For this assignment, we had to create a self portrait using the P5 library and the programming languages of JavaScript and HTML. The process I used was to create a flowchart with pseudocode alongside to breakdown and evaluate the process I would complete through the programming languages. While the flowchart and pseudocode helped to gain an understanding of what was needed to be completed, following the plan directly and specifically once the program was starting to be completed was a challenge. As specific components of the portrait needed to be in front of others, for example the humorous part of the arms needs to be behind the hood of the jumper but not the forearms, some components were added to more specific functions and not others. While this differed from the flowchart, it allowed me more flexibility for the portrait to be completed in the style I wished for. Another challenge I faced was creating the eye moment function as it involved using statements we had not covered in class, for example the atan2 function for angles and translate and rotate functions. Research from the P5 site and examples from the p5 library allowed me to gain an understanding of what the statements meant and allowed within my program.

HTML program

<!DOCTYPE *html*>

<html>

  <head>

    <script *src*="https://cdnjs.cloudflare.com/ajax/libs/p5.js/0.7.1/p5.min.js"></script>

    <script *src*="https://cdnjs.cloudflare.com/ajax/libs/p5.js/0.7.1/addons/p5.dom.min.js"></script>

    <script *src*="https://cdnjs.cloudflare.com/ajax/libs/p5.js/0.7.1/addons/p5.sound.min.js"></script>

    <link *rel*="stylesheet" *type*="text/css" *href*="style.css">

    <meta *charset*="utf-8" />

  </head>

  <body>

    <script *src*="portrait.js"></script>

  </body>

</html>

JavaScript program

*// for left and right eye values*

let leftEye, rightEye;

*// for red, green, and blue color values*

let r, g, b;

*//runs once*

function setup() {

  createCanvas(520, 600);

*//leftEye and rightEye values*

  leftEye = new Eye(210, 260, 20, 20);

  rightEye = new Eye(310, 260, 20, 20);

*// Pick colors randomly*

  r = random(255);

  g = random(255);

  b = random(255);

}

*//runs on loop*

function draw() {

  background(255);

*//Hair*

  noStroke()

  fill(214, 177, 77);

  arc(260, 320, 325, 500, QUARTER\_PI + HALF\_PI, QUARTER\_PI, OPEN);

*//Face*

  noStroke()

  fill(247, 221, 212);

  ellipse(260, 255, 200, 260);

*//Ears*

*//left ear*

  arc(150, 265, 40, 60, 0, PI + HALF\_PI, PI + HALF\_PI, OPEN);

*//right ear*

  arc(370, 265, 40, 60, 0, PI + PI + HALF\_PI, OPEN)

*//Earings*

  stroke(0,0,0);

  strokeWeight(1);

  fill(84, 201, 240);

  ellipse(150, 288, 13, 13);

  ellipse(371, 288, 13, 13);

*//Bangs*

  noStroke()

  fill(214, 177, 77);

*//left bang*

  arc(300, 150, 150, 100, 0, PI + QUARTER\_PI, CHORD);

*//right bang*

  arc(180, 120, 140, 148, 0, 0.75 \* Math.PI);

*//Eyebrows*

  stroke(214, 177, 77);

  strokeWeight(3);

  noFill();

*//left eyebrow*

  arc(210, 235, 45, 15, PI, TWO\_PI, OPEN);

*//right eyebrow*

  arc(310, 235, 45, 15, PI, TWO\_PI, OPEN);

*//Eyes*

  noStroke()

  fill(32, 19, 19);

*//left eye (black part)*

  ellipse(210, 260, 40, 40);

*//right eye (black part)*

  ellipse(310, 260, 40, 40);

*//Eye movement*

*//Updates eye variables on mouse cursor position*

  leftEye.update(mouseX, mouseY);

  rightEye.update(mouseX, mouseY);

*//displays left and right eye variables*

  leftEye.display();

  rightEye.display();

*//Nose*

  fill(235, 208, 141)

  triangle(260, 270, 270, 300, 250, 300);

*//Mouth*

  fill(255, 102, 102);

  arc(260, 325, 49, 35, 0, PI);

*//Jeans*

  stroke(0,0,0);

  strokeWeight(2);

  fill(7, 68, 166);

*//left leg*

  rect(220, 570, 80, 90);

*//right leg*

  rect(300, 570, 80, 90);

*//Jumper*

  fill(r, g, b);

  rectMode(CENTER)

  rect(260, 470, 205, 150, 20);

  Humorous();

*//Hood*

  fill(r, g, b);

  strokeWeight(2);

  stroke(0);

  triangle(135, 435, 170, 360, 330, 470);

  triangle(360, 380, 390, 460, 200, 435);

  fill(255)

  ellipse(300, 432, 15, 15);

  ellipse(220, 432, 15, 15);

  rect(300, 460, 8, 65, 20);

  rect(220, 460, 8, 65, 20);

  Forearms();

*//Neck*

  noStroke();

  fill(247, 221, 212);

  rect(260, 380, 50, 60, 20);

*//Jumper pocket*

  fill(r, g, b);

  strokeWeight(2);

  stroke(0);

  rect(263, 515, 90, 43);

}

function Forearms() {

  RightForearm();

  LeftForearm();

}

function Humorous() {

  LeftHumorous();

  RightHumorous();

}

function LeftHumorous() {

  fill(r, g, b);

  strokeWeight(2);

  stroke(0);

*//starts new drawing state*

  push();

  translate(width / 2, height / 2);

  rotate(170);

  rect(-45, 175, 30, 90);

  pop(); *// returns to original state*

}

function LeftForearm() {

  fill(r, g, b);

  strokeWeight(2);

  stroke(0);

  push();

  translate(width / 2, height / 2);

  rotate(90);

  rect(210, -20, 30, 115);

  pop();

}

function RightHumorous() {

  fill(r, g, b);

  strokeWeight(2);

  stroke(0);

  push();

  translate(width / 2, height / 2);

  rotate(50);

  rect(60, 180, 30, 90);

  pop();

}

function RightForearm() {

  fill(r, g, b);

  strokeWeight(2);

  stroke(0);

  push();

  translate(width / 2, height / 2);

  rotate(20);

  rect(220, 5, 30, 98);

  pop();

}

function Eye(tx, ty, ts) {

  this.x = tx;

  this.y = ty;

  this.size = ts;

  this.angle = 0;

*//updates function with varaibles mx and my*

  this.update = function(mx, my) {

*// sets this.angle to compute angle to arctangent angle of mouse y - this.y and mouse x - this.x position*

  this.angle = atan2(my - this.y, mx - this.x);

  };

  this.display = function() {

    push();

    translate(this.x, this.y);

    fill(73, 143, 9);

    ellipse(0, 0, this.size, this.size);

    rotate(this.angle);

    fill(255);

    ellipse(this.size / 4, 0, this.size / 2, this.size / 2);

    pop();

  };

}

*// When the user clicks the mouse*

function mousePressed() {

*// Check if mouse is inside the jumper*

  let d = dist(mouseX, mouseY, 260, 470);

  if (d < 100) {

*// Pick new random color values*

    r = random(255);

    g = random(255);

    b = random(255);

  }

}