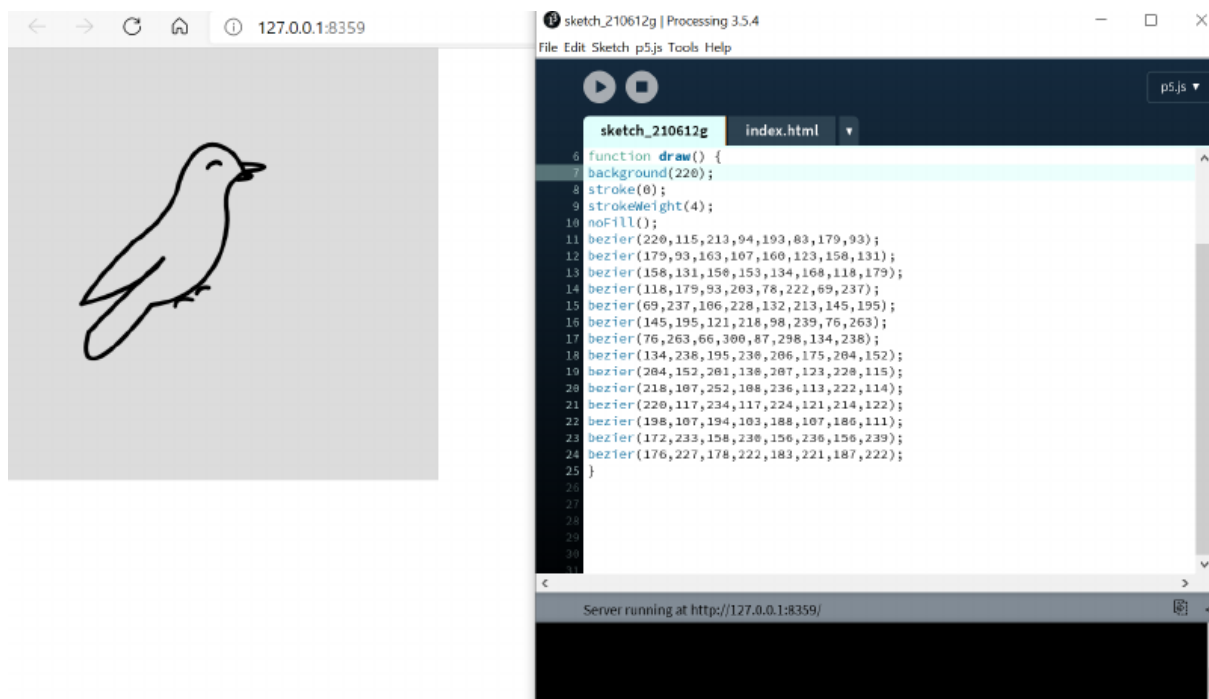


## CSE2006 LAB 13

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```
function setup() {  
  createCanvas(400,400);  
}  
function draw() {  
  background(220);  
  stroke(0);  
  strokeWeight(4);  
  noFill();  
  bezier(220,115,213,94,193,83,179,93);  
  bezier(179,93,163,107,160,123,158,131);  
  bezier(158,131,150,153,134,168,118,179);  
  bezier(118,179,93,203,78,222,69,237);  
  bezier(69,237,106,228,132,213,145,195);  
  bezier(145,195,121,218,98,239,76,263);  
  bezier(76,263,66,300,87,298,134,238);  
  bezier(134,238,195,230,206,175,204,152);  
  bezier(204,152,201,130,207,123,220,115);  
  bezier(218,107,252,108,236,113,222,114);  
  bezier(220,117,234,117,224,121,214,122);  
  bezier(198,107,194,103,188,107,186,111);  
  bezier(172,233,158,230,156,236,156,239);  
  bezier(176,227,178,222,183,221,187,222);  
}
```



```

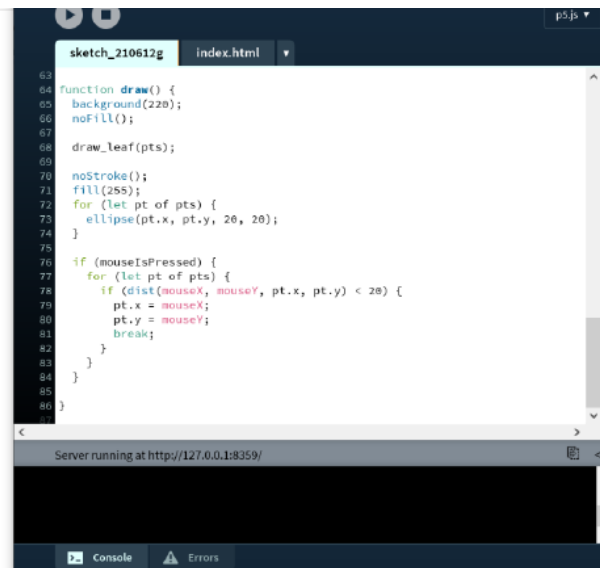
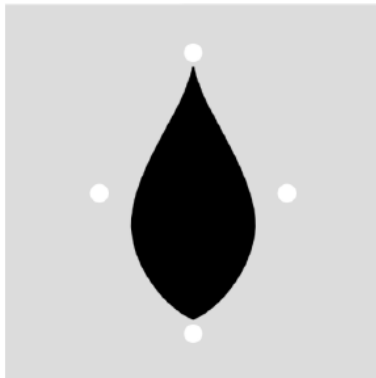
let pts = [];
function setup() {
  createCanvas(400, 400);
  pts = [
    createVector(200, 50), //top
    createVector(100, 200), //left
    createVector(200, 350), //bottom
    createVector(300, 200) //right
  ];
}
function draw_leaf(points) {
  curveTightness(-0.2);
  noStroke();
  fill(0);
  let p1 = p5.Vector.lerp(points[1], points[2], 0.5);
  let p1_reverse = p5.Vector.lerp(points[3], points[2], 0.5);
  let p2 = p5.Vector.lerp(points[0], points[2], 0.95);
  let p23 = p5.Vector.lerp(points[2], points[3], 0.75);
  let p23_reverse = p5.Vector.lerp(points[2], points[1], 0.75);
  let p3 = p5.Vector.lerp(points[1], p23, 0.95);
  let p3_reverse = p5.Vector.lerp(points[3], p23_reverse, 0.95);
  let p4 = p5.Vector.lerp(points[3], points[0], 0.8);
  let p4_reverse = p5.Vector.lerp(points[1], points[0], 0.8);
  let p_5 = p5.Vector.lerp(p4, points[1], 0.09);
  let p_5_reverse = p5.Vector.lerp(p4_reverse, points[3], 0.09);
  let p6 = p5.Vector.lerp(points[0], points[2], 0.05);
  beginShape();
  curveVertex(p1.x, p1.y);
  curveVertex(p2.x, p2.y);
  curveVertex(p3.x, p3.y);
  curveVertex(p_5.x, p_5.y);
  vertex(p6.x, p6.y);
  curveVertex(p_5_reverse.x, p_5_reverse.y);
  curveVertex(p3_reverse.x, p3_reverse.y);
  curveVertex(p2.x, p2.y);
  curveVertex(p1_reverse.x, p1_reverse.y);
  endShape();
}
function draw() {
  background(220);
  noFill();
  draw_leaf(pts);
  noStroke();
  fill(255);
  for (let pt of pts) {
    ellipse(pt.x, pt.y, 20, 20);
  }
}

```

```

if (mouseIsPressed) {
  for (let pt of pts) {
    if (dist(mouseX, mouseY, pt.x, pt.y) < 20) {
      pt.x = mouseX;
      pt.y = mouseY;
      break;
    }
  }
}

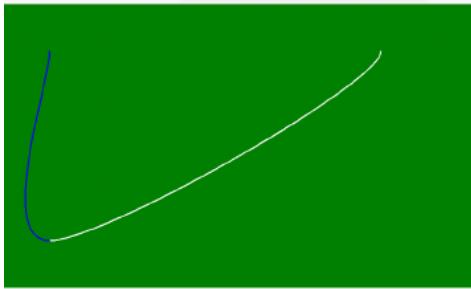
```



```

function setup() {
  // Create canvas of given size
  createCanvas(500, 300);
  // Set the background of canvas
  background('green');
}
function draw() {
  // Use noFill() function to not fill the color
  noFill();
  // Set the stroke color
  stroke('white');
  // Use curve() function to create curve
  curve(50, 50, 400, 50, 50, 250, 50, 50);
  // Set the stroke color
  stroke('blue');
  // Use curve() function to create curve
  curve(400, 50, 50, 250, 50, 50, 50, 50);
}

```



```

sketch_210612g index.html
1 function setup() {
2   // Create canvas of given size
3   createCanvas(500, 300);
4
5   // Set the background of canvas
6   background('green');
7 }
8
9
10 function draw() {
11   // Use noFill() function to not fill the color
12   noFill();
13
14   // Set the stroke color
15   stroke('white');
16
17   // Use curve() function to create curve
18   curve(50, 50, 400, 50, 50, 250, 50, 50);
19
20   // Set the stroke color
21   stroke('blue');
22
23   // Use curve() function to create curve
24   curve(400, 50, 50, 250, 50, 50, 50, 50);
25 }

```

Server running at http://127.0.0.1:8359/

```

function setup() {
  createCanvas(100, 100, WEBGL);
  curveDetail(5);
}
function draw() {
  background(200);
  curve(250, 600, 0, -30, 40, 0, 30, 30, 0, -250, 600, 0);
}

```



```

sketch_210612g index.html
1 function setup() {
2   createCanvas(100, 100, WEBGL);
3
4   curveDetail(5);
5 }
6 function draw() {
7   background(200);
8
9   curve(250, 600, 0, -30, 40, 0, 30, 30, 0, -250, 600, 0);
10 }
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

```

Server running at http://127.0.0.1:8359/

```

function setup() {
  createCanvas(600, 600);
  noFill();
  stroke(255, 0, 0); //red
  ellipse(100, 50, 10, 10);
  ellipse(400, 300, 10, 10);
}

```

```

line(100, 50, 400, 300);
strokeWeight(2);
curveBetween(100, 50, 400, 300, 0.3, 0.2, 1);
}
function draw() {
}
function curveBetween(x1, y1, x2, y2, d, h, flip) {
var original = p5.Vector.sub(createVector(x2, y2), createVector(x1, y1));
var inline = original.copy().normalize().mult(original.mag() * d);
var rotated =
inline.copy().rotate(radians(90)+flip*radians(180)).normalize().mult(original.mag() * h);
var p1 = p5.Vector.add(p5.Vector.add(inline, rotated), createVector(x1, y1));
rotated.mult(-1);
var p2 = p5.Vector.add(p5.Vector.add(inline, rotated).mult(-1), createVector(x2, y2));
bezier(x1, y1, p1.x, p1.y, p2.x, p2.y, x2, y2);
}

```



```

sketch_210612g  index.html
1 function setup() {
2   createCanvas(600, 600);
3   noFill();
4
5   stroke(255, 0, 0); //red
6   ellipse(100, 50, 10, 10);
7   ellipse(400, 300, 10, 10);
8   line(100, 50, 400, 300);
9   strokeWeight(2);
10  curveBetween(100, 50, 400, 300, 0.3, 0.2, 1);
11
12 }
13
14 function draw() {
15
16 }
17
18 function curveBetween(x1, y1, x2, y2, d, h, flip) {
19   //find two control points off this line
20   var original = p5.Vector.sub(createVector(x2, y2), createVector(x1, y1));
21   var inline = original.copy().normalize().mult(original.mag() * d);
22   var rotated = inline.copy().rotate(radians(90)+flip*radians(180)).normalize();
23   var p1 = p5.Vector.add(p5.Vector.add(inline, rotated), createVector(x1, y1));
24   rotated.mult(-1);
25   var p2 = p5.Vector.add(p5.Vector.add(inline, rotated).mult(-1), createVector(x2, y2));
26   //line(x1, y1, p1.x, p1.y, p2.x, p2.y, x2, y2); //show control line
27 }

```

Server running at http://127.0.0.1:8359/

Console Errors