Sound and Image Processing
Project Process Log
Project: Lindenmayer System

Idea
This project is based on the understanding of the Konch Snowflake by continuously adding two ellipses for each initial circle until it reaches the designated parameter. I want to create a circular shape, mimicking the form of a macramé, hence increasing the angle and using sin.

Pattern Code
The function bellow is a class function that I use to arrange the ellipses in order for it achieve the macrame shape.

```
class Particle {

    constructor(radius, angle) {
      this.pos = p5.Vector.fromAngle(angle);
      this.pos.mult(radius);
      this.r = 5;
    }

    update() {
      this.pos.x -= 1;
      this.pos.y += random(-2, 2);

      let angle = this.pos.heading();
      angle = constrain(angle, 0, PI/10);
      let position_magnitude = this.pos.mag();
      this.pos = p5.Vector.fromAngle(angle);
      this.pos.setMag(position_magnitude);
    }

    show() {
      fill(r, g, b, 127);
      stroke(255, 150);
      ellipse(this.pos.x, this.pos.y, this.r * 2);
    }

    intersects(macrame) {
      let final_macrame = false;
      for (let s of macrame) {
        let d = dist(s.pos.x, s.pos.y, this.pos.x, this.pos.y);
        if (d < this.r * 2) {
          final_macrame = true;
          break;
        }
      }
```

```
      return final_macrame;
    }

    finished() {
      return (this.pos.x < 1);
    }
  }
```

The particle is them repeated multiple time using this function

```
for (let i = 0; i < 20; i++) {
    rotate(sin(30)/3);
    initial.show();
    for (let a of macrame) {
      a.show();
    }

    push();
    scale(1, -1);
    initial.show();
    for (let a of macrame) {
      a.show();
    }
    pop();
  }
```

Building Interactivity

To add interest I added the mousePressed() function for interactivity that allows the user to change the colour of the macramé by clicking on the canvas.