

Assignment 3 Using noise function

I use the for loop to create many lines according to the vertical length and horizontal length. Both two of the end position of the point of the line change by using noise. As the movement of the noise is very similar to water wave movement. Therefore, I created water effect. I changed the color of the line to light blue and dark blue and the vertical line and horizontal line are crossing to each other. By using transparent, the water become transparent and look much more real.

```
float x = 0;
for (int i = 0; i < height; i++) {
  line(0,i,3 + noise(x, y) * 200 ,i);
  line(70 + noise(x, y) * 200,i,80 + noise(x, y) * 200 ,i);
  line(100 + noise(x, y) * 200,i,150 + noise(x, y) * 200 ,i);
  line(230 + noise(x, y) * 200, i, 255 + noise(x, y) * 200, i);
  line(290 + noise(x, y) * 200, i, 340 + noise(x, y) * 200, i);
  line(450 + noise(x, y) * 200, i, 600 + noise(x, y) * 200, i);
  x += 0.01;
}

stroke(206,233,255,50);

for (int i = 0; i < width; i++) {
  line(i,10 + noise(x, y) * 200 ,i,30 + noise(x, y) * 200);
  line(i,135 + noise(x, y) * 200 ,i,140 + noise(x, y) * 200);
  line(i,150 + noise(x, y) * 200 ,i,200 + noise(x, y) * 200);
  x += 0.01;
}
```



This idea was coming from the week8 lesson example6b and the exercise 4 in week 8. As the fill in the region under the noise wave give me this idea.

Then, I added the 12 tadpoles in random position and they are moving around the canvas. To duplicate the same effect and copy 12 tadpoles, I have used class function to make a lot of tadpoles. I have used two class to make copy the tadpoles randomly in the position of canvas. One class is for the tadpoles move from 0(bottom) to height. Another one is for the tadpoles to move from height to 0(bottom). The tadpoles' movement also add the noise function in order to create nature swimming motion. I use strokeWeight to create the body of the tadpoles. And using point to create movement. The tail is the transparent part of the previous point as the transparent background covers it.

```
class Circle {
  float num,ynum, movey, lastX, lastY,c,nsnum1,nsnum2,moveme;
  Circle() {
    num = 0;
    ynum=0;
    movey = random(0,height);
    c=random(0,width);
    nsnum1=random(0.01,0.03);
    nsnum2=random(0.0001,0.0003);
    moveme=random(50,150);
  }

  void move() {
    point(c + noise(num,ynum) * moveme, movey);
    movey=movey+1;
    if(movey > height){
      movey=0;
    }
    num=num+nsnum1;
    ynum=ynum+nsnum2;
  }
}
```



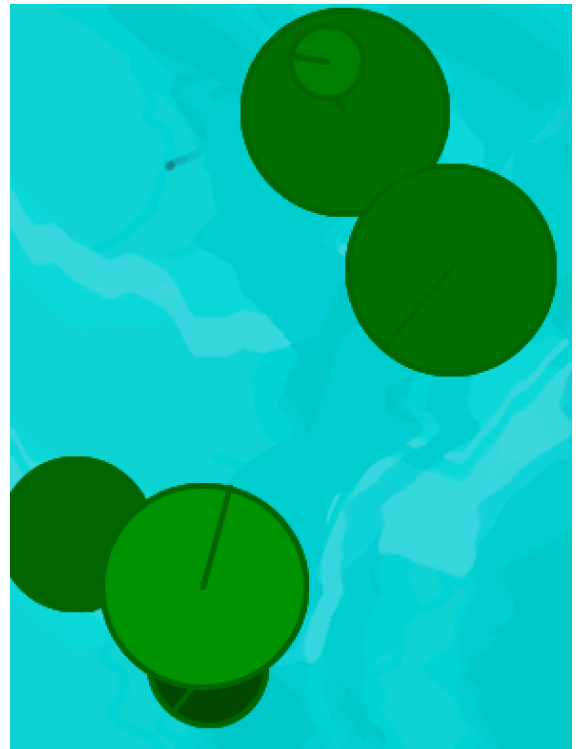
The tadpoles' idea was coming from the example 4 of week 8. The point move from bottom to the top of the canvas make it look like a small fish and water creature.

After that, I created some lotus leaf into the canvas which I created another class to duplicate the effect of the leaf and copy 8 lotus leaf. Using ellipse to create the shape of the leaf and use one rotating line to represent the movement of the leaf in order to create a motion about the rotating leaves influence by water wave.

The key effect of the leaf is line movement. I added noise function into the line so the leaf can be rotated more naturally. One of the point in the line fix on the center of the leaf. And another point rotated by radius and surrounding the center of the ellipse. I use strokeWeight to create the outline of the leaf.

```
class leCircle {
  float x2, y2, radius, centX, centY, tt, ttadd, gncolor;
  leCircle() {
    radius=random(10,55);
    centX=random(0,width);
    centY=random(0,height);
    tt=0;
    ttadd=random(0.0007,0.007);
    gncolor=random(70,150);
  }

  void display() {
    strokeWeight(3);
    float rad = noise(tt) * PI * 4;
    x2 = centX + (radius * cos(rad));
    y2 = centY + (radius * sin(rad));
    stroke(0, 102, 0);
    fill(0,gncolor,0);
    ellipse(centX,centY,radius*2,radius*2);
    line(centX, centY, x2, y2);
    tt += ttadd;
  }
}
```



This idea was coming from example3a 3b of week 9 and the exercise 1 of week 9. The example using line connect new point and previous point to make line and cover by transparent background to create point movement. However, I idea is the change it into a visible line that rotate base on the center and the noise.

Reference:

Week8—example4 & example6b & exercise4

Week9—exercise1 & example 3a & 3b