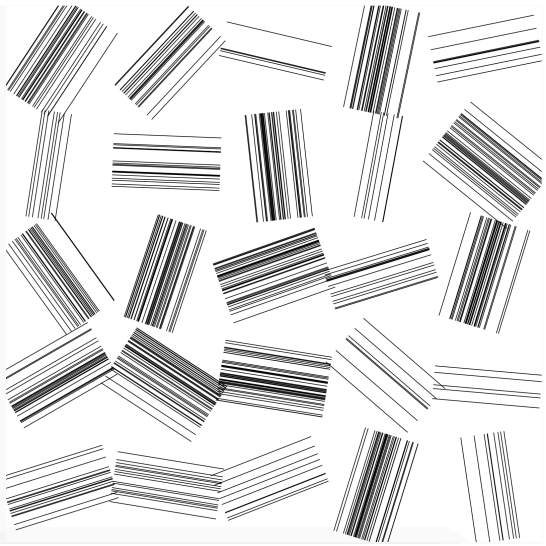
VIZUALIZATION TECHNOLOGIES
MINI-PROJECT 1

PART A

Implement a series of moving patterns in a grid of 5 by 5. Each pattern contains a series of parallel lines that change in position according with a noise function. Each pattern has its own angle of inclination. Each pattern has its own speed, meaning that their lines will move faster or slower depending on that speed. Try to replicate the effect seen in “p1.mp4”.



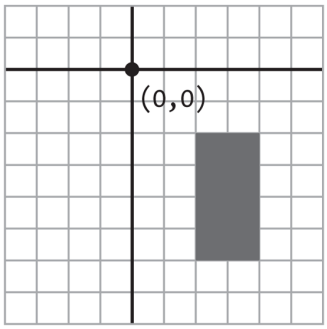
PART B

Implement the following behavior: when you click near the center on one of the patterns, one of its lines is deleted. In order to do this, you will need to create an array to keep track of how many lines each pattern has. Additionally, you will need to keep track of the position of each pattern in order to detect wether the mouse position is near it.

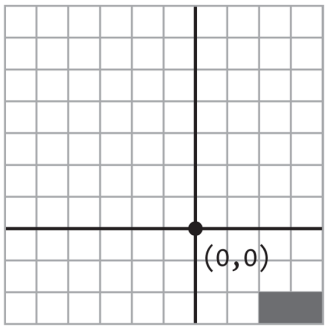
TRANSFORMATIONS: TRANSLATE, ROTATE, SCALE

These transformations change the screen coordinate system.

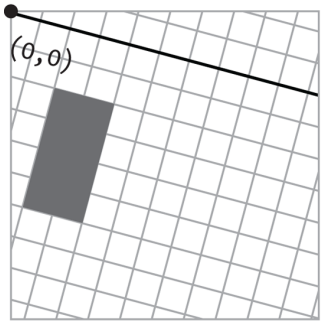
```
translate(40, 20);
rect(20, 20, 20, 40);
```



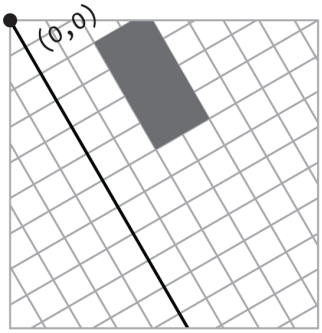

```
translate(60, 70);
rect(20, 20, 20, 40);
```



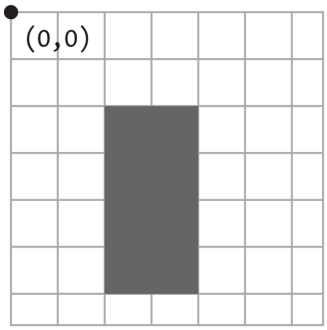

```
rotate(PI/12.0);
rect(20, 20, 20, 40);
```



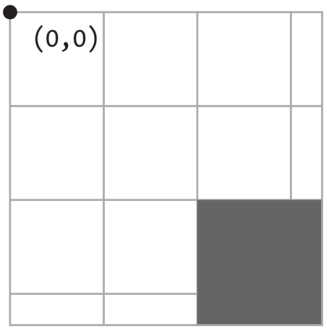

```
rotate(-PI/3);
rect(20, 20, 20, 40);
```




```
scale(1.5);
rect(20, 20, 20, 40);
```




```
scale(3);
rect(20, 20, 20, 40);
```



These transformations are cumulative. For example, if translate(0, 20) is called twice, that would be the same as calling translate(0, 40) once. It is possible to undo transformations by inverting then. For example rotate(PI/6) can be undone by a rotate(-PI/6) if called before any other transformations. In a similar way, a scale(2) can be undone by a scale(0.5). The order in which transformations are applied is important. A translate(width/2, height/2) followed by a rotate(PI/6) is different from a rotate(PI/6) followed by a translate(width/2, height/2). Test this. You should also consult Chapter 6 of “Make: Getting Started with p5.js”.

Assignment in class

By using translations and rotations, obtain a similar effect to the one in a1.mp4. You should also use rectMode(CORNER) and rectMode(CENTER).

The push() and pop() functions isolate the effects of transformations so that they do not affect drawing and other transformation calls. When push() is called, a copy of the current coordinate system is stored in memory, which is restored when pop() is called.

ASSIGNMENT 5

By using translations and rotations, as well as the push() and pop() functions, replicate the effect seen in a2.mp4.

READING FOR NEXT CLASS

Read chapter 7 of “Make: Getting Started with p5.js”.