Functions/ Classes

LO: IWBAT to use P5-JS to create multiple functions/classes within my programs.

Functions

A JavaScript <mark>function</mark> is a block of code designed to perform a particular task.

A JavaScript function is executed when "something" invokes it (calls it).

```
1  function setup() { //This function creates our
   Canvas and fills it with color
2    createCanvas(400, 400);
3    noStroke();
4    fill(0);
5  }
```

A JavaScript function is defined with the function keyword, followed by a name, followed by parentheses ().

Function names can contain letters, digits, underscores, and dollar signs (same rules as variables).

The parentheses may include parameter names separated by commas:

(parameter1, parameter2, ...)

Classes

Classes are a template for creating objects. They encapsulate data with code to work on that data.

Classes are in fact "special functions", and just as you can define function expressions and function declarations, the class syntax has two components: class expressions and class declarations.

One way to define a class is using a class declaration. To declare a class, you use the class keyword with the name of the class ("Rectangle" here).

```
class Rectangle {
  constructor(height, width) {
    this.height = height;
    this.width = width;
  }
}
```

Classes

A class expression is another way to define a class. Class expressions can be named or unnamed. The name given to a named class expression is local to the class's body. However, it can be accessed via the name property.

```javascript
1   // unnamed
2   let Rectangle = class {
3     constructor(height, width) {
4       this.height = height;
5       this.width = width;
6     }
7   };
8   console.log(Rectangle.name);
9   // output: "Rectangle"
10
11  // named
12  let Rectangle = class Rectangle2 {
13    constructor(height, width) {
14      this.height = height;
15      this.width = width;
16    }
17  };
18  console.log(Rectangle.name);
19  // output: "Rectangle2"
```

Find the Functions and Classes

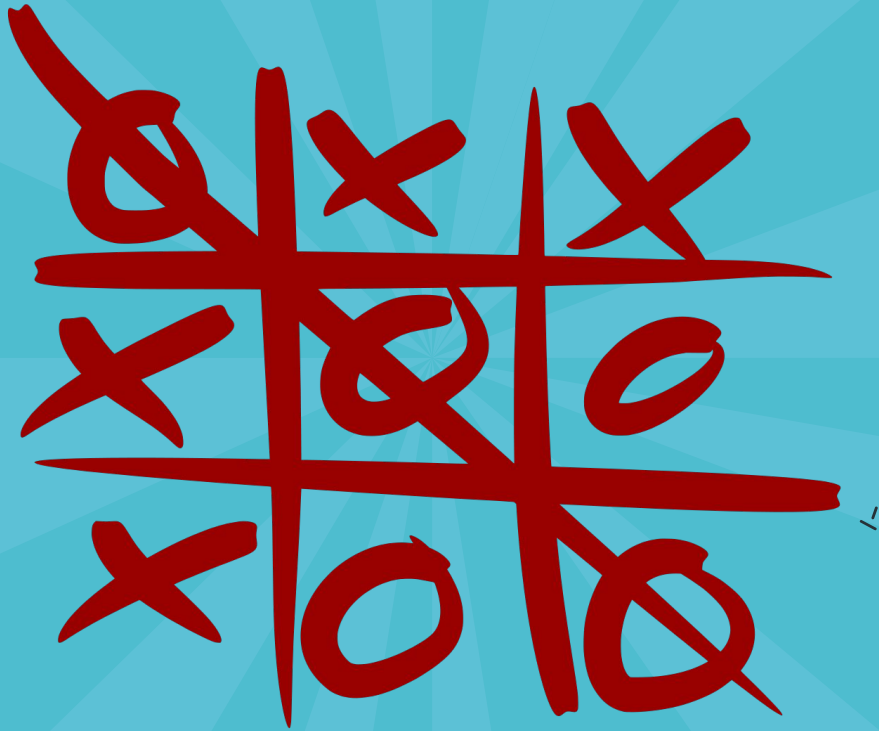Work with a partner and look through the following program.

Look for instances where functions and classes were used.

Label what you think they each do in the program.

https://github.com/CodingTrain/website/blob/main/beginners/p5js/6.2-classes/P5/sketch.js

When done, name file "Functions" and run the program to compare your results.

Functions	Purpose	Class	Purpose

Activity

Using everything we've learned, create a very simple Tic-Tac-Toe game.

Needs to have:

- Game board
- When clicked, X or 0 shows
- Functions and classes