CODE! Fall 2023

Module 5 - Classes/Objects

The goal of this week is to understand **Classes and Objects.** It is okay to take a previous assignment and restructure it so that nothing changes for the user, but the code is more organized. It is also okay to start fresh to understand the process of creating classes and objects from scratch. Aim to have your setup() and draw() code as minimal as possible, with all the calculations and drawing done in classes that you write yourself.

Classes allows us to create independent copies of similar entities ("things"). Each individual copy is a called an object. Think of classes as a blueprint. In a class, you broadly define what this thing has and what it can do. Then, you can use the blueprint to create many objects that look or behave similarly.

```
// define
class Person{
  constructor(n){
      this.name = n;
  }

  sayHi(){
      console.log("Hi! My name is", this.name);
  }
}

// create a Person object
let p = new Person("Julie");

// use object
p.sayHi();
```

Step 1: Watch Module 5 Videos

Watch the videos listed on Brightspace in the 'Content' tab linked under Module 5. These videos consist of 1 main topic:
- Object Oriented Programming

Step 2: Prompt

Create a sketch that uses classes and objects to structure your code. You may modify a previous assignment, create something completely new, or follow the steps below. Whichever you choose, your sketch should have **at least one class, and at least two objects from that class, such as in [this gravity ball sketch](#).**

Note: Even if you are following a tutorial, it is important to write your own code and not copy/paste. Add your own creative spin to the sketch, and show us where you put your effort! Including your own comments as you go along dramatically increases your rate of learning.

Example Steps:

You are welcome to modify a previous sketch or create something new of your choice, but if you are unsure where to start then you can follow the steps and examples below:

1. Create a Ball class that stores an X and Y position, and a colour..
2. Add a function (or "method") to the class that draws a ball at the X and Y position.
3. *Declare** and *instantiate** a new ball object.
4. Call the function you made to draw the ball, using the ball object (this might look like: `myBall.drawBall()`)
   - **By now your sketch might look something like [this](#)**
5. Create another function (or "method") in your Class that does something else to the ball. This could change the colour, move the ball, change the size, whatever you like. Don't forget to call that function too.
6. Declare and instantiate *another* ball object in your sketch.
   - **By now your sketch might look something like [this](#)**
7. *(Optional)* Try to move your Class code into a new file (*remember to update the index.html file as well!*)

   *Declare: This is when you create an empty variable, e.g. `let ball;`
   *Instantiate: This is when you create a new object and assign it to the variable, e.g. `ball = new Ball();`

✱ Step 3: Coding Assignment

1. Create a sketch as described in the "Prompt" section.
2. Share your sketch as a new post on this week's discussion board. **Write a ~ 200 word description about what you made and your process**. You can write anything, but if you're stuck here are some guiding questions:

   - *What did you originally intend to create?*
   - *Narrate the process of creating your sketch.*
   - *What resources and examples did you draw on to create your sketch? What was most helpful / least helpful from this week's materials.*
   - *What problems/discoveries did you encounter along the way?*

3. Paste the link to your post as your assignment submission.
4. Please also write a short response on at least two other classmate's sketches on the forum. Review the Feedback Guide (especially the "Content" section) for ideas on what to talk about. *Note: It's okay to do this step after the deadline, when everyone has submitted!*