Final Project Reflection

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Over the course of this class I have spent a lot of time both refreshing my own programming knowledge as well as learning more about javascript and how it works. Because of my prior programming experience I was able to quickly pick up on more advanced concepts like classes and object oriented programming, so a lot of the time in this class was spent on learning how to apply what I know and trying to actually program. This meant that a lot of the time working on the sketches and projects I was focusing more on trying to figure out how I want to execute what I was creating, opposed to refreshing up on the syntax and concepts we were learning in class.

In general I found programming in p5js a little bit more interesting and easier than processing because of it being a library for javascript. In processing a lot of it felt a bit more disconnected from other programming languages in the past and it felt a lot more limiting than using p5js. I felt being able to explore different libraries in p5js made it easier for me to get excited and begin to think more creatively in my projects.

Procedural programming is an approach in which you go for a top down approach to programming where the computer will read from top to bottom and execute the instructions as it goes. In object oriented programming, while instructions do execute one after another, it is more focused on having objects that will change across the execution of a project instead of having a set of instructions that will just execute in order. OOP also has more of a focus around the classes and objects that you make instead of the functions being the main focus of the program. The objects in OOP are the ones who do a lot of the functions (their own methods) as opposed to functions happening isolated from an object.

In my final project I was able to solidify my knowledge of how to deal with transitions and change over time with different conditions as well as understanding the screen coordinates well. In my snake game I had to use the coordinate system of the screen a ton when considering how I wanted to develop my game since I put the game on a grid. Because of this to make different difficulty modes I had to make the game very easy to

modify the amount of rows and the speeds. I was also considering using more object oriented aspects to the game, however I felt as though it didn't really make a ton of sense to do the snake head as an object since I could have the tails array and the snake head as too different objects which made development a little easier for me.

In my final project I ran into a few bugs when developing. One of the bugs I had was I needed to figure out a way to reset the array of tails since when I would replay the old tails were there and could kill you. This made me think more broadly and thought of using another function other than setup which can initialize the game state that is called every time I need to start a new game. I also had a bug where the fruit could spawn inside of the player or the tail, so I needed to find a way to handle this. I did this by having a flag that will check if any tail overlaps with the fruit positions as well as the player and if this ever does happen we will exit the loop and draw a new fruit. This slight optimization helped me also prevent the program from lagging towards the end of the game with constantly having to reset since it overlapped.

My intended milestone was to get the main gameplay of the game working. For the most part I was able to achieve this by the first submission time on December 5th, but the tails still had issues. I was able to fix the tails in the next week to solidify what I wanted as my milestone. The issue with the tails was how I was traversing the for loop and I found that swapping tail positions when we grow from the back to the front made it work correctly and updated all of the positions. I had another large milestone in the following week where I was able to get all of the menus and sound working for the game which started to bring a lot of the game to life.

In reference to my final project, I am most proud of making my game feel smooth to play as well as making it modular which made it very easy to add different levels such as making the map bigger or change the speed from the title screen which I would be able to add different difficulty levels and make the game have a lot more replayability than just a simple snake game.

Moving forward from this class, I will try to continue programming in a more creative way. Through this final project I have learned that I really enjoy programming games and other more creative projects and I want to try working with other APIs

and libraries over my break to see what other cool projects I can make. As a CS student I already am taking a lot of programming classes, but this made me want to continue to take other game development classes and other more creative IDM classes such as 3D modeling and Game Development Studio in order to get the skills to learn how to make games.