Kevin Xiang

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Professor Katherine Bennett

Creative Coding Section B Fall

Final Self-Assessment

**Critically analyze/evaluate how much time was spent learning syntax & structure, programming concepts vs. actually programming, and how does this reflect on the final quality of your end result.**

This has been quite an interesting semester with Creative Coding, and I’ve been pleasantly surprised by this class. Since in the past I’ve only ever coded for backend purposes and crunching numbers for various physics equations, this class has both been a nice refresher for dusting off my knowledge on prior coding concepts I haven’t used in a while as well as learning more about the creative side of coding and using visuals to express my creativity, at least for the first half of the semester. As such a large majority of my time was spent learning new syntax for p5.js and actually programming to see all the interesting new things I could do with code visually. Once OOP was introduced however, things took quite the turn. OOP was completely new to me, so I had to learn most of the material from the ground up. Looking at textbook references and understanding the key concepts took time but, in the end, I was able to grasp a pretty good understanding which I actually enjoyed quite a lot. The organization of OOP as well as how efficient it is for recreating similar objects opened up all sorts of new ways to write code that I hadn’t known were possible before. As such when it came to the final, I knew I wanted to test my skills and OOP and created my Boid based game. Now looking back, it would definitely have been easier to have used the p5.play library, which I try for a while, but ultimately because I had written so much of the code already with custom classes and objects it was just easier to continue with it. I found the Boid game to be great practice for OOP and it really solidified my understanding of its key concepts.

**Comment on your successes and frustrations with Processing and P5.js.**

Regarding Processing and p5.js, some of my biggest frustrations was relearning syntax, which is why I’d spent a lot of time on it. There were many times throughout the semester where given some task I’d logically know how to code it in python or MATLAB, except implementing it into processing and p5.js left me running into error after error only to realize I’d missed a curly bracket somewhere. This combined with often confusing p5.js and processing just made syntax a nightmare at times, though it did get better as the semester went on.

**Compare and contrast OOP versus Procedural Programming. How are they similar? How are they different?** I am looking for you to explain this in your own words, what these concepts are. I am NOT looking for you to tell me how you used these in your project.

Procedural programing (PP) involves a top down approach to writing code. In essence, it’s a list of instructions that the computer will basically go down line by line and execute. Object Oriented Programming (OOP) is a programming model based around objects which area data storages with multiple attributes. Classes are also used as template which creates these objects and executes class specific code in the form of methods. Their similarities are they both need to have defined variables, and both take an input to produce a desired output. Their differences are that while PP is based around functions OOP based around objects. Also, PP doesn’t have access specifiers will OOP does, these specifiers are like private, public, protected etc.

**Specifically considering your final project: What programming concepts solidified in your final project? What did you learn with reference to programming? Did you have a breakthrough?**

Regarding my final project, I’d reiterate that it immensely helped improve my understanding of OOP. I’d understood most major concepts pretty generally before but working specifically with boids and vector coding meant that each class had loads of variables and methods really gave me the hands-on practice I needed to fully understand its intricacies. I’d also learnt a lot about the p5.play library which I attempted to implement for a while, but due to the fact that I’d already written most of the code with custom classes, it was too much work to port it over so I ultimately abandoned it. This was actually prompted by a major breakthrough where originally, I had created boids with hitboxes in the form of sprites that followed the boid objects, and I was trying to delete the boid except for the longest time I couldn’t figure out how to delete the sprite with it as well at the same time. This was a major headache that took several days before I decided not to use the p5.play sprites and instead wrote my own code for hit detection. This cleaned up the code a lot and made the final product a lot more organized.

**Specifically considering your final project: Were you able to resolve your own bugs? What tricks did you learn in the process to help? Did you do any debugging?**

There were tons of bugs and roadblocks that I ran into as expected with any sort of coding assignment. One of the major bugs I encountered was that when attempting to delete a single object, all objects were deleted. It turned out there was a missing bracket causing the for loop with the delete function to run through the entire array. The trick I used for finding this was actually a print statement and looking at the console to see how many times the for loop was being triggered. This print statement method was my main method of debugging and I used it countless time just to check to make sure that certain loops were running a correct amount of times or if statements were triggering.

**What was your intended milestone? Did you make it? Did another one pop up? Tell me about this. Tell me how you resolved it.**

Originally my intended miles stones were

1. Getting the basic player set up with the boid enemies
2. Setting up and interface, polishing the gameplay and making a score system
3. Polishing the interface and adding title screens and menus

And I was able to accomplish all of these in a fairly organized manner, though I think they could have been more evenly distributed because the first milestone by far took the most time. The game itself runs pretty smoothly and has pretty intuitive menu screens. I’d even had the time to implement an additional gameplay mechanic I wanted to do which was orbs that would spawn around the map which the player could “eat” in order to gain bonus points and to kill one of the chasing boids.

**What are you most proud of, with reference to your final project?**

I’m actually quite happy with how my game turned out and I’d even sent it to a few of my friends to play test and get some feedback. Aside from a few pointers and bug fix suggestions, they told me that the main gameplay loop was quite enjoyable and even made a competition among themselves to see who could get the highest score! For the record it was not me, I might have made the game, but I was at the bottom of the score board. Technical coding wise I’m really happy with the function I wrote for creating a dead zone around the player where boids cannot spawn because this involved a lot of vector manipulation which was quite tedious but accomplished the task pretty well.

**How do you think you'll move forward with programming? Will you keep doing it? How does this relate to other classes you are either taking or wish to take?**

I already do programming for my other classes, but this class has definitely opened by eyes to the graphical and creative side of it. I’ve really enjoyed making this game for my final project and will definitely be looking to make more games in the future for personal enjoyment and just general coding practice.