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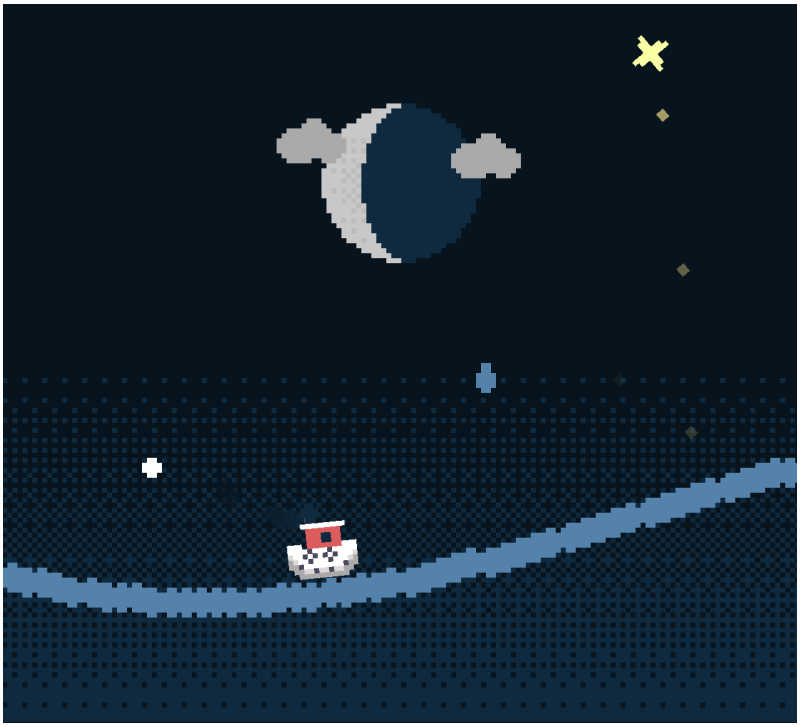
CART 253
Pre-Reflection

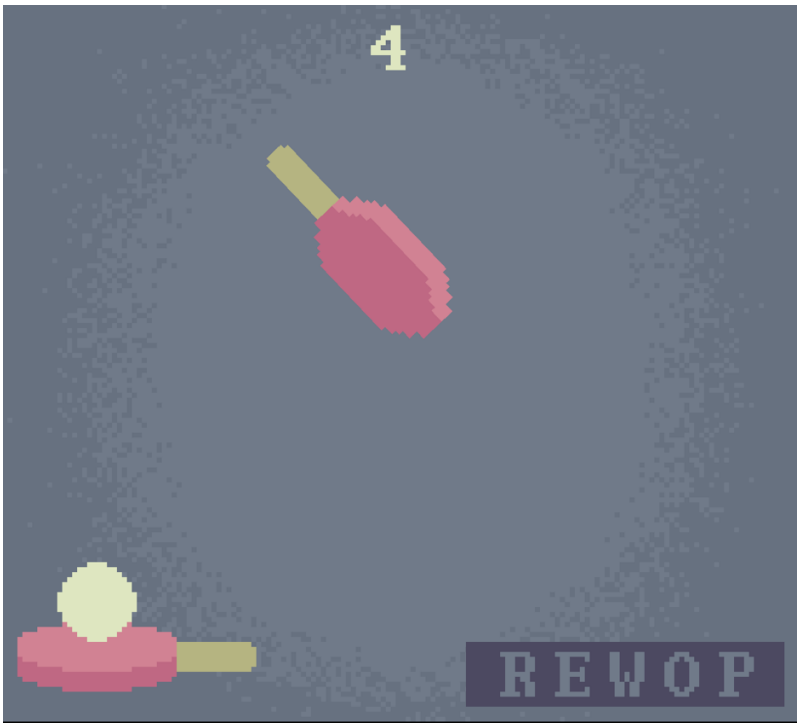
<u>My relationship to creative coding:</u>

My relationship with coding exists mainly through my experience working with Unity and C# to make small video games as a hobby and form of creative expression. I started teaching myself how to code with these tools roughly 1 and a half years ago from zero coding knowledge, and have since finished 3 small games, all during 48-hour to 2-week game jams. I'm in the process of finishing a longer game (~55 screens) which I have been working on intermittently since I first opened the Unity engine. I also have some experience working with Max MSP's visual scripting language for audio processing and creation.

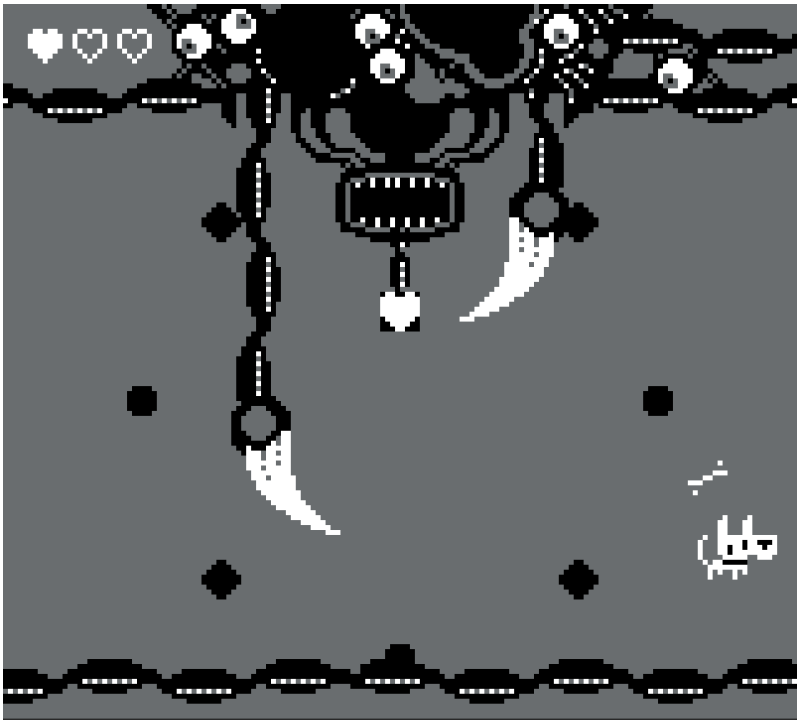
Some projects I've worked on:



Luna Tone, a sound toy about moon phases and ocean tides.
https://picnictm.itch.io/luna-tone



Gnop Gnip, a Pong reversal game where you keep a flying paddle from going off screen.
https://picnictm.itch.io/gnop-gnip

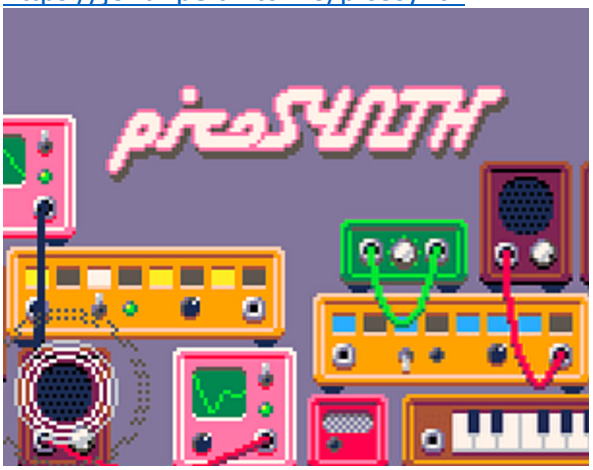

Fetch, a top-down adventure shooter about a dog with a bone.
(work in progress).

I have always wanted to make video games but have never felt that I had the ability, so it was very fulfilling to be able to get rid of some of the mystery & learn the basics. Learning to code has been extremely rewarding so far, and I very much enjoy the process of bringing my vague ideas into code step by step and iterating on it until it matches what I had in my head.

I feel that within the framework of making 2D games in Unity & C#, I'm competent at using the tools I know to be able to bring my ideas to life and create a working product, but outside of this context (i.e. in another language) I feel like a complete beginner and I know that there are plenty of concepts and tools that I haven't even heard of yet let alone know how to use.

Three inspirational projects:

Inspiration 1: picoSYNTH by Johan Peitz
https://johanpeitz.itch.io/picosynth



I have recently become interested in the idea of sound toys, which combine audio creation capabilities with game-like visuals. picoSYNTH is a synthesizer made with the pico8 engine, which allows you to make music through customizing your gear's arrangement & playing different patterns.

I have done a lot of audio exploration including using modular synths, and I am enamored with the idea of creating programs which manipulate the basic components of audio signals. I have made one sound toy, and I ran into a wall with Unity's audio capabilities as they are somewhat limited, so the idea of being able to work with sound at a lower level is very inspiring. I would also like to learn how to make my own audio plugins after working in Max MSP and getting a glimpse at simplified audio programming, but I could see making something like picoSYNTH being a good first step to understanding that world.

Inspiration 2: A Short Hike by Adam Robinson-Yu
https://adamgryu.itch.io/a-short-hike

A Short Hike is a beautiful game. The first thing that attracted me to this game was its pixelated 3D graphics, and I learned that the way this is done is through graphics shaders. The shader used in this game takes simple 3D forms and applies a pixelation effect on top of them. Shader coding seems extremely complicated, but I am interested in learning the basics because the things that I have seen done with it are varied and impressive and seem to simplify graphics creation processes in some cases, like here where the pixel shader allows the 3D modeling to be extremely simple while still having a great aesthetic.

Inspiration 3: Enter the Gungeon by Dodge Roll
https://store.steampowered.com/app/311690/Enter_the_Gungeon/

Enter the Gungeon is an inspiration for me mainly for the procedurally generated levels. So far one of the parts of game development that has been a struggle for me has been level design, as I have found it can be tedious. There are probably workflows that can streamline it, but I am also drawn to procedural generation as a method for creating levels because you can hypothetically do a certain amount of work up front and then have endless possibilities. I see procedural generation being useful in many other aspects of coding outside of level design or video games entirely, as a sort of "controlled randomness".
I have heard of algorithms like A* and Wave Function Collapse, and I do not feel like I need to get a to a place of completely understanding this kind of algorithm, but I do want to at least be able to utilize them.

All of my biggest inspirations in coding are things that I am intimidated by due to their complexity and my lack of knowledge about them – this is true for audio coding, shader coding, and algorithms. In the same way that I was once intimidated by the concept of coding in general and have since overcome that through learning how it actually works, I hope to be able to one day put my fear of these behind me.

A Dream Project:

My dream project would be something similar to A Short Hike, a 3D world larger in scale than anything I've worked on (but still with a modest scope when compared to other 3D games). So far, I have only coded 2D spaces and I would love to make something in 3D space. The math required seems to me a lot more complicated - the few times that I have worked with Quaternions I have been extremely confused, and I imagine that working in 3D would take simple tasks like calculating direction and make them more complex. That's not to mention lighting, 3D modeling and animation, and the organizational coding required of a large project like saving & UI which I am also clueless about.

I do not feel ready for a project this big as I am still learning the basics and want to make a lot more small projects before looking at something of this size, but it is a dream project that I want to attempt at some point, after I have developed solid workflows, tools, and coding knowledge to allow me to tackle it without monumental effort. I would like to be able to utilize shader coding, procedural generation, and audio coding in projects of this kind as well. 3D coding seems like a large hurdle & milestone, and I am looking forward to someday trying it out.