Learning the Art of Game Development: Developing Code, Art, and Music with Godot

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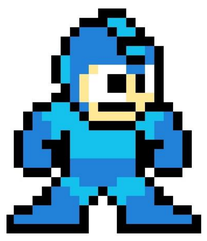
Introduction

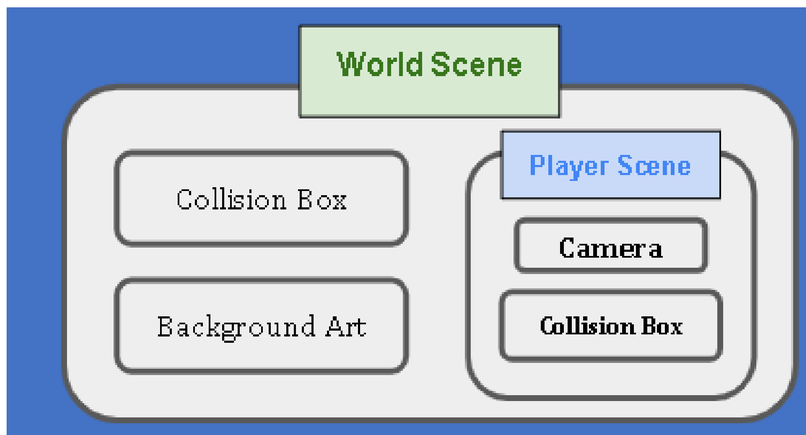
My project is an exploration of computer science, art, and music through game development using Godot, a cross-platform, open-source game engine.
I aimed to merge my technical skills as a computer science major with my passion for games to make a 2D platformer!



Gimmick!(right) and Mega Man were my biggest inspirations throughout my project's life!

Game Scenes

Godot works by constructing game scenes out of Nodes. Nodes are utilized to display images, play sounds, and execute game logic every frame, shaping core game components.



A simple example of an interconnected Godot Scene

Choosing the Right Engine

A big part of my project was deciding which game engine to start developing in. I tried two different game engines before finally settling on Godot – every engine has pros and cons, but for the scope of my project, Godot satisfied all of my needs.

My project's starting point, until I was thwarted by versioning issues ☹

My 2nd choice, Bevy, falied due to many compatibility issues and massive compile times

Career Goals

This project served as an effective exhibition to refine my coding and project management skills, both of which are crucial for my future. More importantly, I feel this project has helped me re-discover a strong desire to create, and I will work to incorporate this wherever I end up in the future.

Future Work

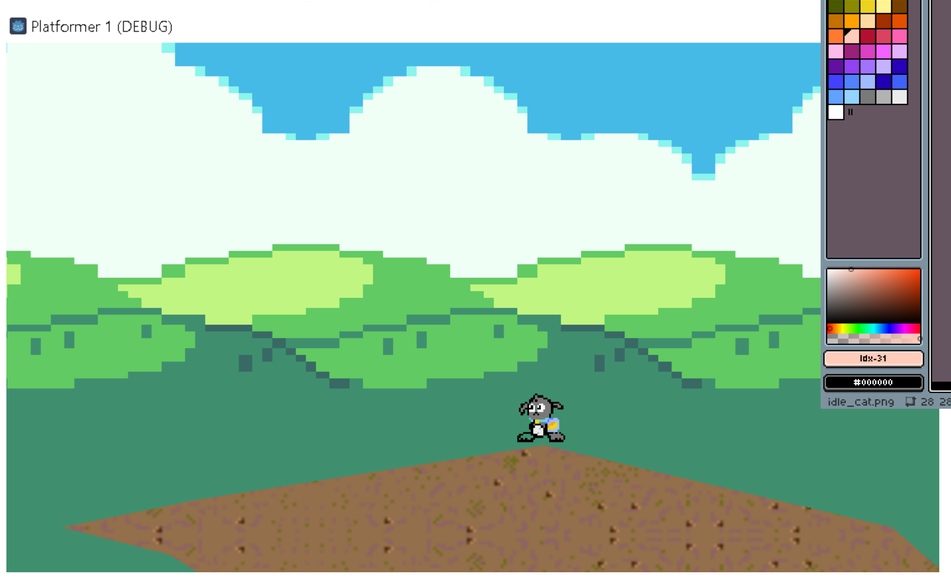
There were a lot of features I couldn't implement due to the brevity of my project. I'd like to continue creating assets, specifically music, and build upon the groundwork this project helped me lay. Godot is extremely flexible, and I may experiment with creating other game genres, utilizing Godot's built-in GDExtension framework and Plugin system to create custom tools, or simply invest time in polishing and improving the base game I was able to create.

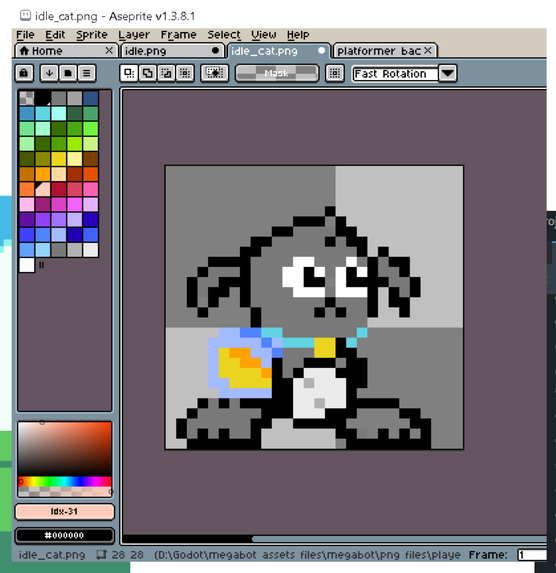
Summer Work

- Sketch and sprite unique character and background tiles for my game, as well as cleverly utilizing open-source assets.
- Developed the game system, coded the respective scripts to make my game run properly.
- Wrote and produced music to fit my game setting.
- Learned and re-learned how to use different game engines, and what advantages they have over others.
- Playtest, debug and reviewed project files, applying the proper data structures and ensuring they worked seamlessly.
- Managed art block and rediscovered my own creative side ☺

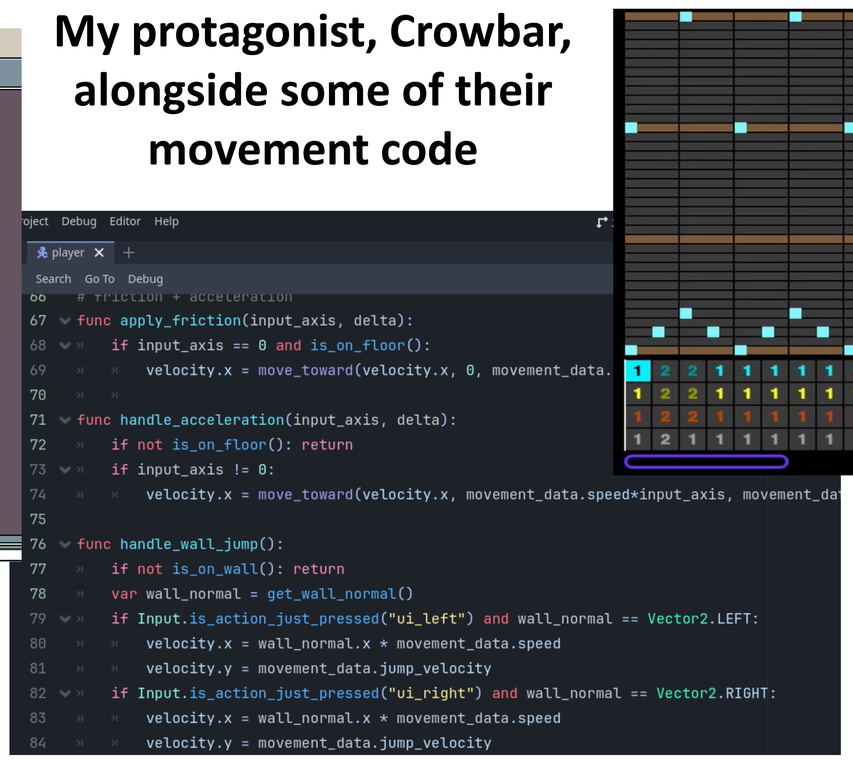
Final Result

A screencap of Crowbar walking around in the debug build of the game

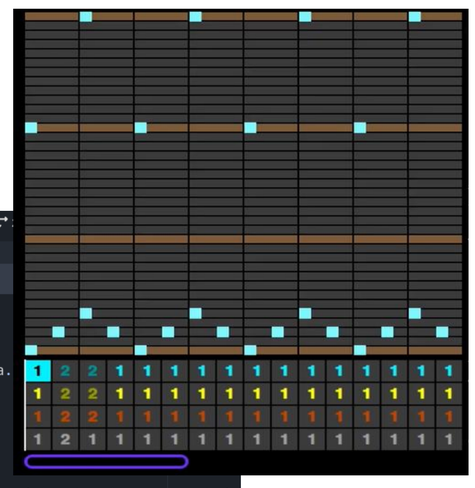




My protagonist, Crowbar, alongside some of their movement code



A song created in BeepBox



Acknowledgements
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Works Cited

Godot Engine. Nodes and scenes. Godot Engine documentation. https://docs.godotengine.org/en/stable/getting_started/step_by_step/nodes_and_scenes.html