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Number Theory

Final Project Report

Python Snake Game

With this project, I originally aimed to learn Python game development's foundations and create a working game while implementing a number theory concept. There were a few ideas on the board in terms of the genre of the game and what number theory concept to implement. From a classic Street Fighter style 2D fighter to a 2D or 3D platformer and even a 3D Space Invaders type game and a 3D car game as well. To start, I started learning about the most popular Python game development library, Pygame, and another 3D Python game development library called Ursina, and attempted to implement these different game ideas, however, I would run into some difficult hurdles that proved to be beyond me. With the 2D fighter game, I had difficulty implementing the sprites and animating them, and with the 3D games, I faced similar issues and struggled to comprehend and implement some of the logic.

Eventually, I settled for the 2D snake game coded with Pygame while implementing a function with prime numbers into the game. I did plan to implement the game with 3D graphics, however, due to time crunch I was not able to accomplish that. Overall though I am bitter about not being able to implement the game in 3D and not even being able to add textures and sprites to it but I am satisfied with the overall gameplay of the game.

Sources

- <https://www.geeksforgeeks.org/pygame-tutorial/>
-  3D Game Development in Python with Ursina
-  Pygame Tutorial for Beginners - Python Game Development Course
- <https://www.youtube.com/@mkcodingspace>
- <https://github.com/mk-codingspace/Python>
- <https://www.geeksforgeeks.org/snake-game-in-python-using-pygame-module/>
-  Python snake game 
-  Street Fighter Style Fighting Game in Python using Pygame - Complete Tut...
-  Let's code 3D Snake Game in Python [DEPRECATED]
- <https://www.javatpoint.com/pygame>
- <https://www.ursinaengine.org>
- <https://www.pygame.org/>
- <https://www.jetbrains.com/pycharm/>