PyGame Snake

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1 Introduction

The goal of this semestral project was to develop a clone of Snake game using Python and the Pygame library. The game features dynamic obstacle generation, high score tracking, and two difficulty levels to enhance the player experience. Additionally, the game should be easily configurable and provide a user-friendly interface.

2 Methods and Algorithms

To realize the game, I used the following tools and methodologies:

Pygame Library: This library was utilized for game development, including rendering user interface, handling events, managing the game loop.

Object-Oriented Programming: Key game components such as Snake, Food, and Obstacle were implemented as classes to ensure modularity and reusability.

Randomization: Dynamic generation of food and obstacles was achieved through randomization.

High Score Management: File I/O operations were implemented to save and load high scores, enabling persistent score tracking across game sessions.

Background and Music Management: Implemented file handling to load different background images and music tracks.

3 Results

The project successfully resulted in the following:

A playable Snake game with dynamic obstacle generation and responsive controls.

High scores are saved to a file and displayed at the end of each game session. Implemented two levels of difficulty that can be selected from the start screen.

Developed a user-friendly interface with options to start the game, view settings, and quit.

The game loads different background images based on user settings, enhancing visual appeal.

Different music tracks are played based on the game state, improving the overall gaming experience.

4 Conclusion

Developing this project provided valuable insights into the complexities involved in creating an application. The process of integrating dynamic obstacles and custom backgrounds presented challenges, but also opportunities for learning and improvement. The final product is a functional Snake game with features that enhance its classic gameplay.

There are many possibilities for further development. Adding more bonus items, refining animations, and potentially introducing a multiplayer mode could make the game even more engaging.

Reference

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