Snake Game in C++

A Synopsis Report

Submitted to

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INTRODUCTION

The Snake game is a classic video game that has been popular since the 1970s. It involves controlling a snake that moves around a screen and eats food while avoiding obstacles such as walls and its own tail. The game becomes progressively more challenging as the snake grows longer with each piece of food it consumes.

In this project, we have implemented the Snake game using the C++ programming language and the graphics.h library. The graphics.h library provides functions for creating and manipulating graphical objects such as lines, rectangles, and circles.

The game starts with a small snake on the screen, and the player must use the arrow keys to move the snake around the screen. The snake moves continuously in the direction it was last moved until a new direction is inputted by the player. The player's objective is to guide the snake to eat the food that appears randomly on the screen while avoiding colliding with the walls or its own tail.

The game includes several features such as a score counter, game over screen, and leaderboard. The score counter keeps track of the player's score, which increases each time the snake eats food. The game over screen appears when the snake collides with a wall or its own body, and the player has the option to restart the game.

Overall, this project demonstrates how to create a simple video game using the C++ programming language and the graphics.h library.

OBJECTIVE

The Snake game with file handling has the following objectives:

1. Implement a classic video game that is enjoyable and challenging for players.
2. Provide the players with the ability to control a snake on the screen using arrow keys and to guide the snake to eat food while avoiding obstacles.
3. Integrate file handling functionality to allow the game to store player information such as name, score, and time played.
4. Create a leaderboard to display the highest scores achieved by players and their corresponding names.
5. Allow players to compete against each other and improve their scores by playing the game multiple times.
6. Ensure that the game is user-friendly, easy to navigate, and visually appealing.
7. Implement error handling features to prevent crashes and bugs during gameplay and file handling.
8. Encourage players to continue playing the game and attempt to achieve the highest score possible by providing them with a challenge and a sense of accomplishment.

FEATURES

The Snake game typically includes the following features:

1. Snake movement: The player controls a snake on the screen using arrow keys or other controls. The snake moves continuously in the direction it was last moved until a new direction is inputted by the player.
2. Obstacles: The game includes obstacles such as walls or the snake's own body that the player must avoid colliding with.
3. Food: The game features food that appears randomly on the screen that the player must guide the snake to eat. The snake grows longer with each piece of food it eats.
4. Score Counter: The game keeps track of the player's score, which increases each time the snake eats food.
5. Game Over Screen: The game ends when the snake collides with an obstacle, and the player is shown a Game Over screen.
6. File Handling: As mentioned before, some versions of the game may incorporate file handling functionality to allow the game to store player information such as name, score, and time played.

HARDWARE / SOFTWARE REQUIREMENT

Hardware Requirements:

- A computer with a suitable amount of storage space to store the player's score data.
- A sufficient amount of RAM to run the system efficiently.
- A monitor with a minimum resolution of 1200 x 720 pixels.
- A keyboard and mouse.

Software Requirements:

- An operating system such as Windows, Linux, or MacOS.
- A C compiler such as GCC or Microsoft Visual C++.
- A code editor or IDE for reviewing the code.
- *Graphics.h* Library by BGI (Borland Graphics Interface).

CONCLUSION

In conclusion, the Snake game is a classic video game that has been popular for decades. The game involves controlling a snake that moves around a screen and eats food while avoiding obstacles such as walls and its own tail. The game becomes progressively more challenging as the snake grows longer with each piece of food it consumes.

Overall, the Snake game with file handling is an excellent example of how to use object-oriented programming concepts to create a simple yet enjoyable video game. It provides a challenge for players and allows them to compete against each other while providing a sense of accomplishment as they attempt to achieve the highest score possible.

THANK YOU!

USE CASE DIAGRAM