# Design Overview for Snake Games

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# Summary of Program

# The game of Snake is a classic that has become extremely popular across various platforms. In this game, players control a snake and attempt to increase its length by eating food pieces that appear on the screen. However, players must avoid colliding with the snake's own body parts or any boundaries of the screen, as this will end the game.

# The interface of the Snake game typically includes a main screen displaying the play area, where the snake and food items will appear. The player's score and other notifications are also often displayed on this main interface. Additionally, there may be other visual elements such as background images or special effects to make the game more lively.

# Required Roles

Describe each of the classes, interfaces, and any enumerations you will create. Use a different table to describe each role you will have, using the following table templates.

Table 1: Classes

|  |  |
| --- | --- |
| Class Name | Description |
| SnakeGame | Manages the game loop, updates the snake's movement, handles collision detection, and manages the game state (e.g., running, paused, game over). |
| Snake | Controls the snake's movement, growth, and collision detection with itself and other objects in the game world. |
| Food | Manages the position of food items on the game board and handles collision detection with the snake. |
|  |  |

Table 2: Enumerations:

|  |  |
| --- | --- |
| Enumeration Name | Description |
| Direction | Represents the direction in which the snake is moving. It can have values such as UP, DOWN, LEFT, and RIGHT |
| GameState | Represents the current state of the game. It can have values such as RUNNING, PAUSED, and GAME\_OVER. |
| GameSpeed | Represents the speed level of the game. It can have values such as SLOW, MEDIUM, and FAST, indicating the speed at which the snake moves on the game board. |

# Class Diagram

A diagram of a computer

Description automatically generated with medium confidence

# Outline program and how does it works

The snake game program offers a classic gaming experience where players navigate a snake through a grid-based game area, aiming to eat food items to grow in length while avoiding collisions with the snake's own body and the game boundaries. The game employs event-driven programming, utilizing key presses to control the snake's direction and a game timer to manage the game loop. As the game progresses, the snake's position is updated based on player input, and collision detection determines whether the snake has encountered food, itself, or the game boundaries. Upon collision, the game ends, displaying the player's score and offering the opportunity to start anew. Additionally, players can take snapshots of their game screen, capturing their progress or achievements. Overall, the snake game program encapsulates the essence of the classic snake game, providing an engaging and nostalgic gameplay experience.