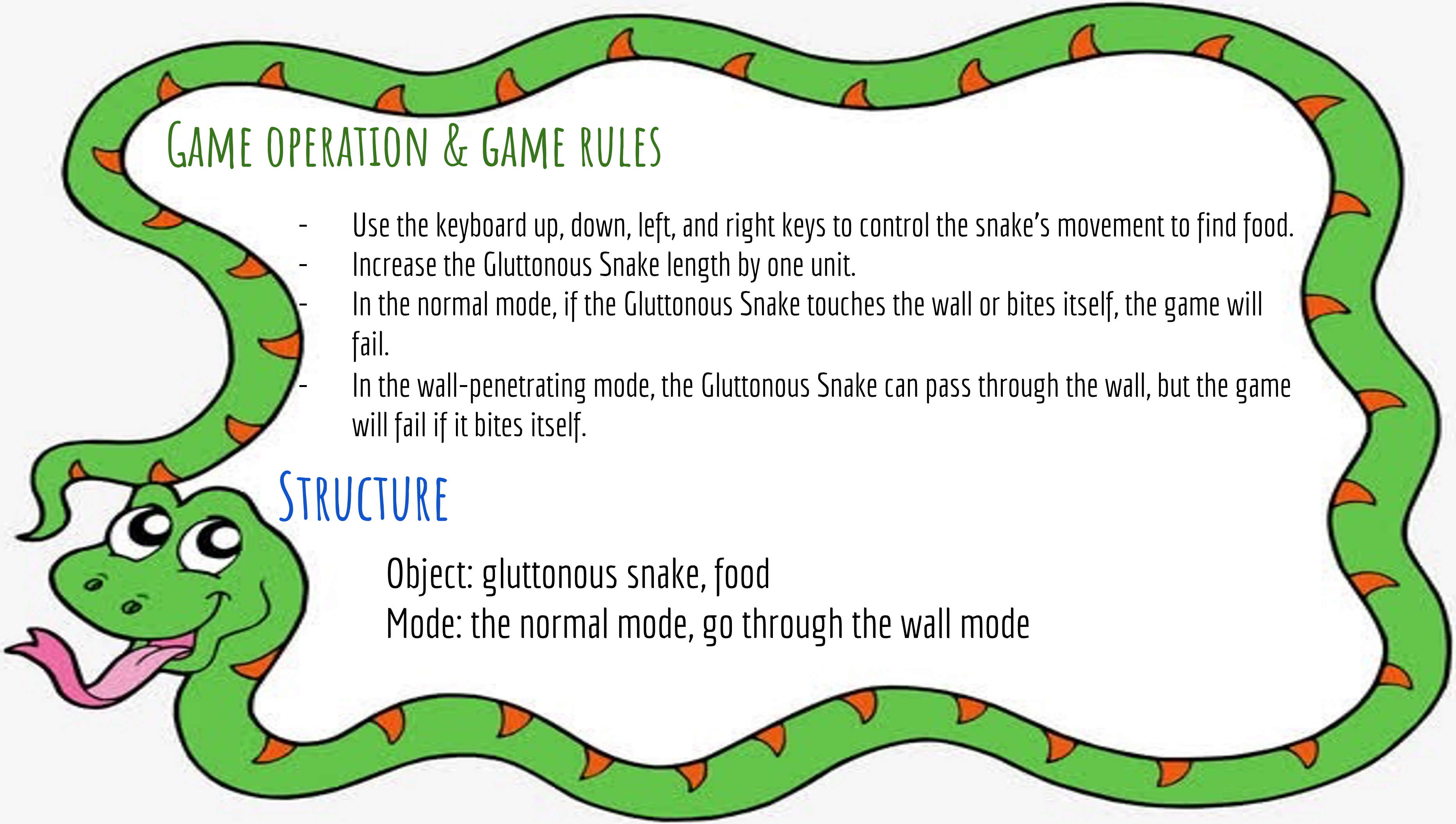
Gluttonous Snake Game

Sofia Chen



Game operation & game rules

- Use the keyboard up, down, left, and right keys to control the snake's movement to find food.
- Increase the Gluttonous Snake length by one unit.
- In the normal mode, if the Gluttonous Snake touches the wall or bites itself, the game will fail.
- In the wall-penetrating mode, the Gluttonous Snake can pass through the wall, but the game will fail if it bites itself.

Structure

Object: gluttonous snake, food

Mode: the normal mode, go through the wall mode

Game Design

- Snake object: including the head and body of the snake, with the headset separately and the body using a list to store it.
- Food object: including the initialization of the food object, random color, and random position settings.
- Initialization interface: in which three buttons with the text "Normal mode", "Going through the wall mode" and "Exit" are set for players to choose.
- Normal mode: including the settings of the game window display, main loop, and judgment of snake death.
- Going through the wall mode: including the settings of the game window display, the main loop, and the judgment of the death of Gluttonous Snake.
- Game end window: including the settings of the window display and last score display.

When the snake eats food:

- Determine if Gluttonous Snake ate the food, the head coordinate equals the food coordinate, then the food is eaten.
- If no food is eaten, then the snake is moving normally and the tail section is deleted.

First, the coordinates of Gluttonous snake and food are randomly generated.
Gluttonous snake starts with 3 sections long and is first set to move to the right.
Follows to the keyboard, the user presses the keyboard only to change the value of the direction, and then uses the move_snake(direction, snake_coords) function to update the snake coordinates.

When the snake bites itself:

- Head coordinates are out of map range
- The head coordinate is equal to a section of the body

Main functions

new_food() function: initializes the food object by passing in the coordinates of the snake's head. When the snake eats the food, a new food is generated by this function. If the coordinates of the newly generated food are the same as the coordinates of the snake's head, the new coordinates are regenerated.

start_game() function: initializes the snake and food in normal mode, controls the movement of the snake, updates the head and body of the snake, and keeps the score.

die_snake() function: determines the death of snake in normal mode, and the input parameters are the coordinates of snake head and snake body. The function sets the boolean variable die_flag to True if the snake died, and False if the snake did not die, and determines if the body coordinates are the same as the head coordinates by iterating through the snake body storage list. At the same time, determine whether the snake hits the wall, and determine whether the x and y coordinates of the snake's head are the width and height of the window, and if they are exceeded, the snake dies.

start_kgame() function: initializes the snake and the food, controls the movement of the snake, and updates the head and body of the snake and the score statistics.

through_snake() function: determines the death of a snake in wallable mode, passing in the coordinates of the snake's head and body as parameters. The boolean variable die_flag is set to True if the snake is dead, and False if the snake is not dead.

Gluttonous Snake:

- a tuple to store the coordinates of each part of the snake's body
- write a method to draw the snake based on the tuple coordinates

Food:

- Store the coordinates and finally draw them

The Movement Of Gluttonous Snake:

- Based on the user's keystrokes, the direction of movement is recorded using the direction variable
- update the coordinates inside the snake tuple
- draw uniformly

thank you