

2Awesome Studio Programmer Test

After thinking about the possibilities you offered me, I decided to make the snake game using Unity. The game has been developed with Unity 2020.314f2 version.

I ended with a solution based on a grid system, there is a board class that controls where the food is, when and where to spawn it, Also checks the player position on the grid, its size is 20x20.

The board spawns a food at the start of the game, instead of using prefabs for the food, I thought the food was so simple that it wasn't necessary. I ended up instantiating a GameObject dynamically, with just two components, A sprite renderer and a BoxCollider2D (which will be used for raycast detection later on). Then, check for a valid position to spawn the food and update its position.

The other main class is the snake, it's responsible for the input, the movement, etc. It has two lists, one for storing the list of BodyParts, and another one for storing all the positions and directions of all segments of the snake. When the snake eats an apple, a bodyPart is created dynamically (as well as food) and inserted on the list. The SnakeMovePosition class stores the position and direction of all parts, also the previous position and direction, this is useful to handle the corners of the snake and rotate the body parts to create the sensation the snake is turning.

The snake movement is made by steps, by default the snake will move 1 grid position each 0.05 second, this variable can be raised or lowered in order to change the game difficulty. There are no actual map limits, if the snake hits one of the borders, it will appear on the opposite side of the map. Controls: W,A,S,D or arrows to move the snake.

All the collisions are handled by Raycast, A ray is casted from the snake's head to its forward vector, multiplied by a length. If the Raycast intersects food, the snake will grow up and score will update, if it's a body part, the game will end and you will be redirected to the game over screen.

The game flow is the following : Splash Screens -> Main Menu -> Game -> GameOver. The Game scene has a Pause (P key), you can resume the game or go back to the main menu.

In order to fulfill all the test requirements I implemented sounds, animations and particles.

I didn't find any good snake sprite animation, so I ended up doing one myself. I edited the head sprite and used the animation and animator unity provided to make the snake open and close the mouth.

The particle system, it's really simple, just a particle system that is played when the snake eats an apple, I tweaked some values from the component to make it look better.