

# **Snake Game Project**

This is a classic Snake Game that I built using Python and the Turtle graphics library. I created this project to practice Object-Oriented Programming (OOP) and understand how to manage game loops.

## **How to Play**

The goal is to move the snake, eat the food, and grow as long as possible without hitting the walls or your own tail.

Controls:

- Up Arrow: Move Up
- Down Arrow: Move Down
- Left Arrow: Move Left
- Right Arrow: Move Right

## **How to Run the Game**

1. Make sure you have Python installed.
2. Download all the files in this repository.
3. Run the file named "snakemain.py".

## **How I Made This (Code Explanation)**

I broke the game down into four main parts using Python Classes:

### **1. The Snake (snake.py)**

The snake is not just one object, but a list of turtle segments.

- Movement: To make the snake move, I used a loop that moves the last segment to the position of the one in front of it. The head moves forward last. This makes the tail follow the head.
- Direction: I added checks so the snake cannot reverse direction immediately (it cannot go down if it is currently going up).

## 2. The Food (Food.py)

This class inherits from the Turtle class.

- It appears as a small circle.
- Every time the snake touches it, it moves to a random X and Y coordinate between -320 and 320.

## 3. The Scoreboard (scoreboard.py)

This handles the text on the screen.

- It keeps track of the score starting at 0.
- When the game ends, it moves to the center and writes "GAMEOVER".

## 4. The Game Loop (snakemain.py)

This is the main file that runs the game.

- It turns off automatic screen animation (tracer) so I can update the screen manually. This makes the movement smooth.
- It checks for collisions with the wall (coordinates greater than 350) and collisions with the tail.