A Project Report

On

Snake Game

Submitted in partial fulfillment of the requirement for the award of the degree of

BACHELOR OF TECHNOLOGY

GALGOTIAS UNIVERSITY

(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

B. TECH

Session 2023-24
in

Computer Science & Engineering

By
ABHINAV KUMAR RAI-22SCSE1012005

ANSH TRIPATHI-22SCSE1011726

Submitted to
DR. VIMAL KUMAR

SCHOOL OF COMPUTING SCIENCE AND ENGINEERING DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

GALGOTIAS UNIVERSITY, GREATER NOIDA
INDIA

Jan, 2024

SCHOOL OF COMPUTING SCIENCE AND ENGINEERING

GALGOTIAS UNIVERSITY, GREATER NOIDA

CANDIDATE'S DECLARATION

I/We hereby certify that the work which is being presented in the project, entitled **"Snake Game"** in partial fulfillment of the requirements for the award of the B. Tech. (Computer Science and Engineering) submitted in the School of Computing Science and Engineering of Galgotias University, Department of Computer Science and Engineering, of School of Computing Science and Engineering, Galgotias University, Greater Noida.

Abhinav Kumar Rai (22SCSE1012005)

Ansh Tripathi(22SCSE1011726)

This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Dr. Vimal Kumar
Professor SCSE

CERTIFICATE

This is to certify that Project Report entitled “Snake Game” which is submitted by Abhinav Kumar Rai 22SCSE1012005, Ansh Tripathi 22SCSE1011726, in partial fulfillment of the requirement for the award of degree B. Tech. in Department of School of Computing Science and Engineering Department of Computer Science and Engineering

Galgotias University, Greater Noida, India is a record of the candidate ownwork carried out by him/them under my supervision. The matter embodiedin this thesis is original and has not been submitted for the award of any other degree

Signature of Professor(s)

Date: 24 Jan, 2024

Place: Greater Noida

ACKNOWLEDGEMENT

It gives us a great sense of pleasure to present the report of the B. Tech Project undertaken during B. Tech. Third Year. We owe special debt of gratitude to ***Professor Dr . Vimal Kumar****, Department of Computer Science & Engineering,* Galgotias University, Greater Noida, India *for his constant support and guidance throughout the course of our work. His / Her sincerity, thoroughness andperseverance have been a constant source of inspiration for us. It is only his cognizant efforts that our endeavors have seen light of the day.*

We also do not like to miss the opportunity to acknowledge the contribution of all faculty members of the department for their kind assistance and cooperation during the development of our project. Last but not the least, we acknowledge ourfriends for their contribution in the completion of the project.

Signature:

Name: Abhinav Kumar Rai

Roll No.: 22SCSE1012005

Signature:

Name: Ansh Tripathi

Roll No.:22SCSE1011726

Introduction

The Snake Game is a classic and iconic video game that has stood the test of time. Originally created in the 1970s, the game has undergone various adaptations across different platforms and technologies. This report aims to provide a comprehensive overview of the Snake Game, covering its history, gameplay mechanics, popular implementations, and its cultural impact.

Snake is a sub-genre of action video games where the player maneuvers the end of a growing line, often themed as a snake. The player must keep the snake from colliding with both other obstacles and itself, which gets harder as the snake lengthens. It originated in the 1976 two-player arcade video game Blockade from Gremlin Industries where the goal is to survive longer than the other player. The concept evolved into a single-player variant where a snake gets longer with each piece of food eaten often apples or eggs. The simplicity and low technical requirements of snake games have resulted in hundreds of versions some of which have the word snake or worm in the title for many platforms

History

The Snake began with the 1976 arcade video game Blockade developed and published by Gremlin. It was cloned as Bigfoot Bonkers the same year. In 1977, Atari, Inc. released two Blockade-inspired titles: the arcade game Dominos and Atari VCS game Surround. Surround was one of the nine Atari VCS launch titles in the US and was sold by Sears under the name Chase. That same year, a similar game was launched for the Bally Astrocade as Checkmate. Mattel released Snafu for the Intellivision console in 1982.

The first known home computer version, Worm, was programmed by Peter Trefonas for the TRS-80 and published by CLOAD magazine in 1978. Versions followed from the same author for the Commodore PET and Apple II. An authorized version of the Hustle arcade game, itself a clone of Blockcade, was published by Milton Bradley for the TI-99/4A in 1980.

The single-player Snake Byte was published in 1982 for Atari 8-bit computers, Apple II, and VIC-20; a snake eats apples to complete a level, growing longer in the process. In Snake for the BBC Micro (1982), by Dave Bresnen, the snake is controlled using the left and right arrow keys relative to the direction it is heading in. The snake increases in speed as it gets longer, and there is only one life.

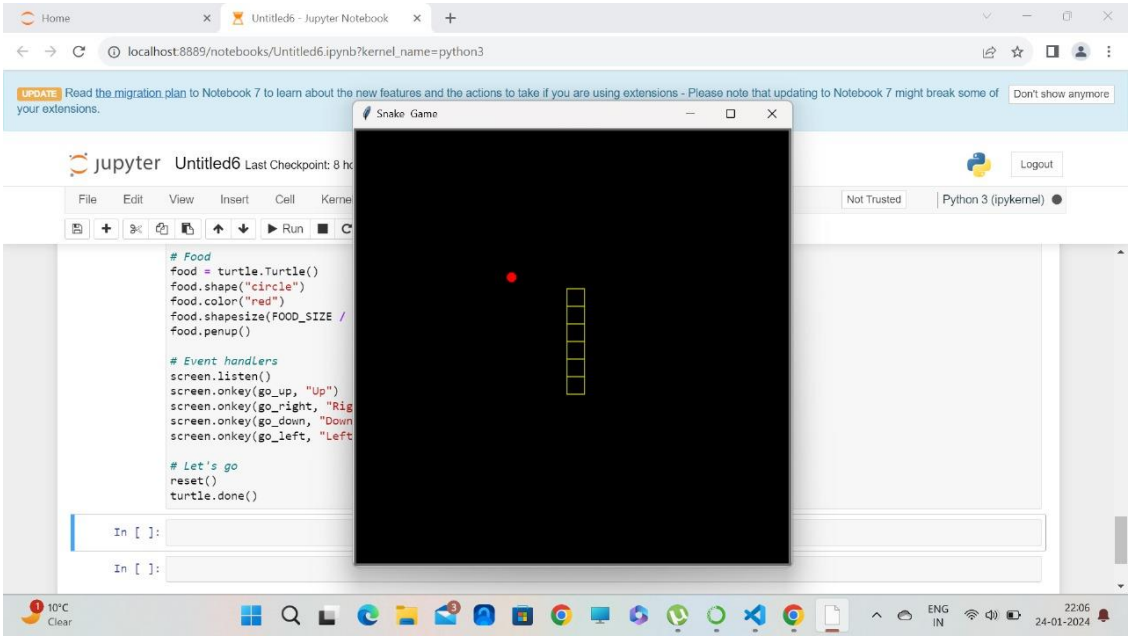
Nibbler (1982) is a single-player arcade game where the snake fits tightly into a maze, and the gameplay is faster than most snake designs. Another single-player version is part of the 1982 Tron arcade game, themed with light cycles. It reinvigorated the snake concept, and many subsequent games borrowed the light cycle theme.

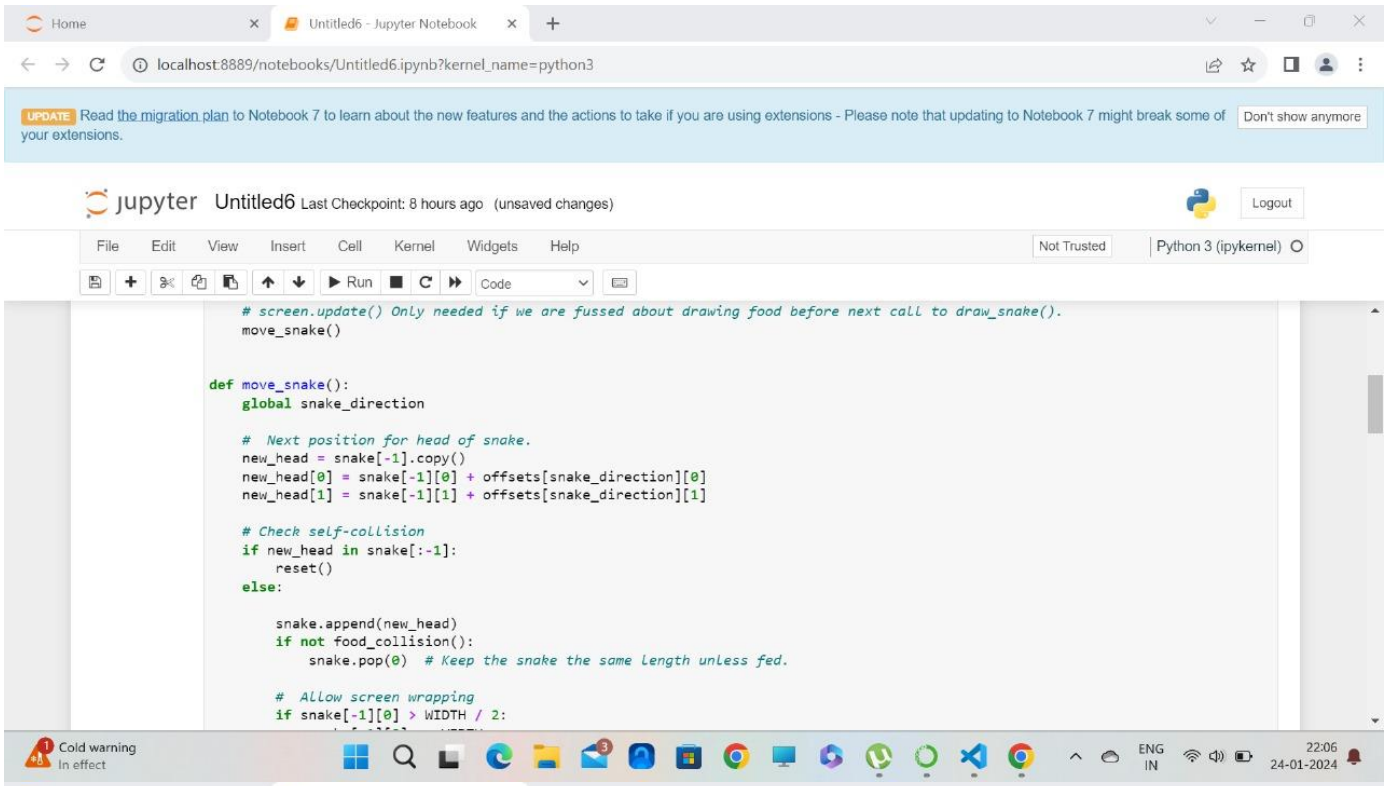
Starting in 1991, Nibbles was included with MS-DOS for a period of time as a QBasic sample program. In 1992, Rattler Race was released as part of the second Microsoft Entertainment Pack. It adds enemy snakes to the familiar apple-eating gameplay.

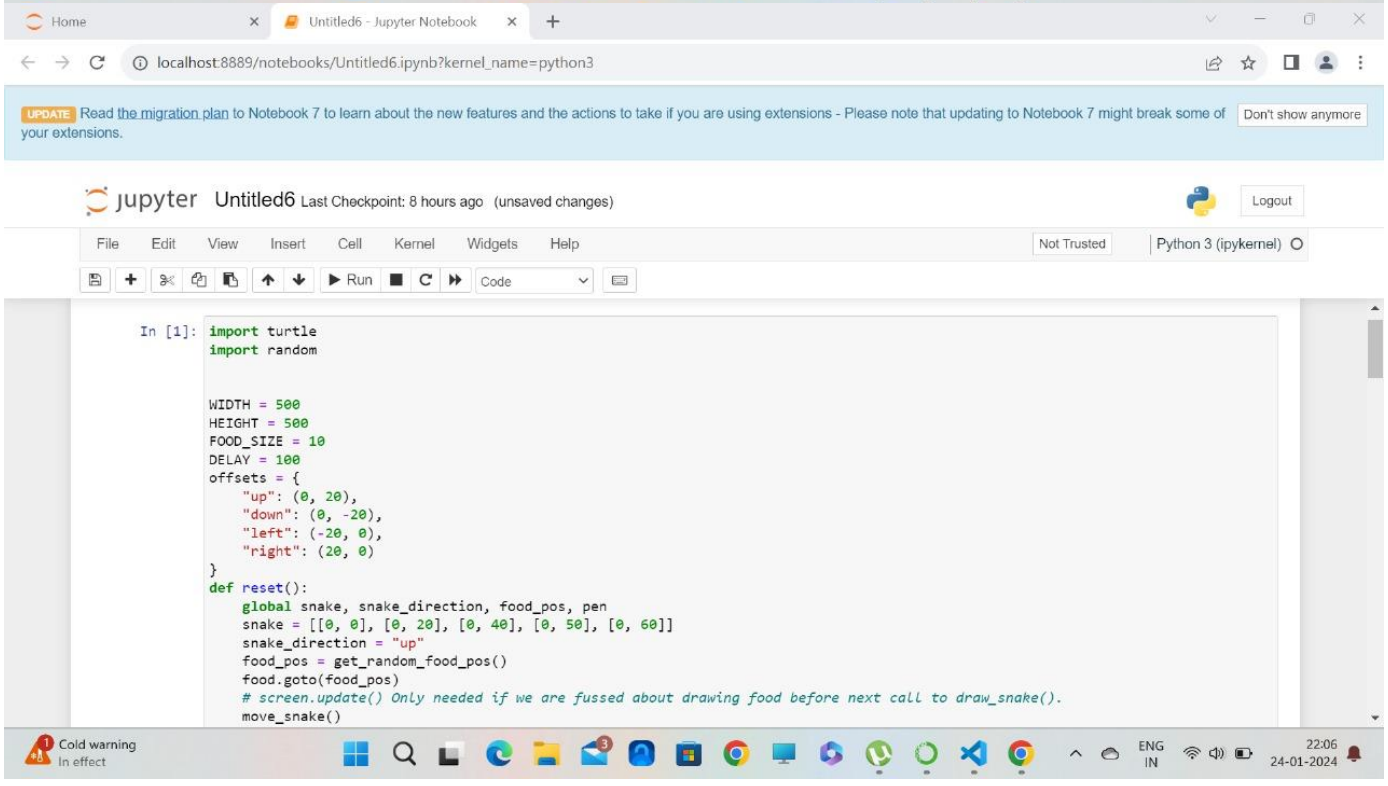
Gameplay Mechanics

The core gameplay mechanics of the Snake Game are simple yet addictive. Players control a snake that continuously moves in a specific direction. The objective is to eat food items, which causes the snake to grow longer. As the snake grows, the challenge increases, as players must navigate the increasingly crowded screen without colliding with the snake's own body or the game borders. The game continues until the snake collides with an obstacle, ending the round.

Implementation




Home
Untitled6 - Jupyter Notebook
localhost:8889/notebooks/Untitled6.ipynb?kernel_name=python3
UPDATE Read the migration plan to Notebook 7 to learn about the new features and the actions to take if you are using extensions - Please note that updating to Notebook 7 might break some of your extensions.
Don't show anymore
jupyter Untitled6 Last Checkpoint: 8 hours ago (unsaved changes)
Logout
File Edit View Insert Cell Kernel Widgets Help
Not Trusted
Python 3 (ipykernel)
Run
Code
# screen.update() Only needed if we are fussed about drawing food before next call to draw_snake().
move_snake()
def move_snake():
global snake_direction
# Next position for head of snake.
new_head = snake[-1].copy()
new_head[0] = snake[-1][0] + offsets[snake_direction][0]
new_head[1] = snake[-1][1] + offsets[snake_direction][1]
# Check self-collision
if new_head in snake[:-1]:
reset()
else:
snake.append(new_head)
if not food_collision():
snake.pop(0) # Keep the snake the same length unless fed.
# Allow screen wrapping
if snake[-1][0] > WIDTH / 2:
Cold warning
In effect
ENG
IN
22:06
24-01-2024


Home
Untitled6 - Jupyter Notebook
localhost:8889/notebooks/Untitled6.ipynb?kernel_name=python3
UPDATE Read the migration plan to Notebook 7 to learn about the new features and the actions to take if you are using extensions - Please note that updating to Notebook 7 might break some of your extensions.
Don't show anymore
jupyter Untitled6 Last Checkpoint: 8 hours ago (unsaved changes)
Logout
File Edit View Insert Cell Kernel Widgets Help
Not Trusted
Python 3 (ipykernel)
Run
Code
In [1]:
import turtle
import random
WIDTH = 500
HEIGHT = 500
FOOD_SIZE = 10
DELAY = 100
offsets = {
"up": (0, 20),
"down": (0, -20),
"left": (-20, 0),
"right": (20, 0)
}
def reset():
global snake, snake_direction, food_pos, pen
snake = [[0, 0], [0, 20], [0, 40], [0, 50], [0, 60]]
snake_direction = "up"
food_pos = get_random_food_pos()
food.goto(food_pos)
# screen.update() Only needed if we are fussed about drawing food before next call to draw_snake().
move_snake()
Cold warning
In effect
ENG
IN
22:06
24-01-2024

Conclusion

In conclusion, the Snake Game stands as a timeless classic in the gaming world. Its enduring popularity, simplicity, and adaptability across different platforms have solidified its place in gaming history. Whether experienced as a nostalgic throwback or a modern iteration on a smartphone, the Snake Game continues to capture the attention and enjoyment of players worldwide.