CSE 2225 Artificial Intelligence FISAC (Mini Project)

TITLE: AI-powered Classic Snake game

Problem statement:

The project aims to revolutionize the classic Snake game by integrating advanced artificial intelligence (AI) algorithms. In this game, a snake confined within a grid, tasked with consuming blocks while evading collisions with itself or the grid walls. As the snake devours blocks, its length increases, intensifying the challenge and complexity of the game.

Constraints:

- The snake cannot collide with wall of the grid in which it is confined.
- The snake cannot collide with itself while making maneuvers.

If any of these constraints are violated the game gets over.

Objective:

- Develop an AI based agent that can determine the best path to reach the block avoiding collision with the walls and snake itself.
- Look for the best possible search algorithm so that snake reaches the target/block in the least number of maneuvers accounting for minimum time.

Course content mapped:
The project will design suitable representation of the snake game with all the specified constrained including the position of snake, position of target, direction in which snake is moving, length of the snake, etc. It will utilize search algorithms like A* search to tackle the obstacles and reach the target in the least amount of time and maneuvers.

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