

Artificial Intelligence (CSE 2225) MINI PROJECT REPORT ON

**Classic Snake Game using AI Algorithms**

*SUBMITTED TO*

**Department of Computer Science & Engineering**

*by*

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**Rules for report making**

**Font – Times New Roman**

**TITLES Font Size – 14 pt BOLD**

**Subtitle – 12 pt BOLD**

Content – 12 pt.

**All figures and tables should be labelled.**

**Organization of Report:**

CONTENTS

1. Introduction

2. Literature survey, with brief descriptions of the contributions in each of the paper referred. / Course content from the syllabus

3. Methodology

4. Results and discussion

**Chapter 1: Introduction**

1. **Introduction**

The Snake game is a classic arcade game where a snake moves around a grid, eating food and growing longer. The player controls the snake's direction, aiming to avoid walls and self-collision. As the snake grows, the game becomes more challenging. It's a simple yet addictive game that tests reflexes and strategy.

1. **Problem Statement**

1. \*\*Initial State:\*\* The agent (snake) starts in a specific position on the grid, typically at the center or a designated starting point. The grid also contains food pellets.

2. \*\*Possible Actions:\*\*

- Move Up: Snake moves one grid unit upward.

- Move Down: Snake moves one grid unit downward.

- Move Left: Snake moves one grid unit to the left.

- Move Right: Snake moves one grid unit to the right.

3. \*\*Transition Model (What Each Action Does):\*\*

- Move Up: Updates the snake's position by decrementing its vertical coordinate.

- Move Down: Updates the snake's position by incrementing its vertical coordinate.

- Move Left: Updates the snake's position by decrementing its horizontal coordinate.

- Move Right: Updates the snake's position by incrementing its horizontal coordinate.

4. \*\*Goal Test:\*\* A given state is a goal state if the snake's head occupies the same position as a food pellet, signifying that the snake has eaten the pellet and grown longer.

* Path Cost Function: In the Snake game, the path cost function is typically defined as the number of steps (actions) taken by the snake to reach the goal state. Each step incurs a cost of 1, so the total path cost is the sum of these individual step costs.

5. Conclusions and future enhancements, if any

6. Reference(s)