IIT BHUBANESWAR
PDS Project Submission Report - 2024
Snake Game

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i. Motivation: Why did you choose the project?

The Snake game is a classic and well-known game that involves implementing several core concepts such as movement, user input handling, and dynamic growth of the snake. We chose this project because it allowed us to apply our knowledge of C programming and explore libraries like `ncurses`, which was outside our comfort zone. The project gave us an opportunity to create something visually engaging with real-time feedback.

ii. Important Highlights of the project:

- Implemented a fully functional Snake game in C.
- Used the `ncurses` library for handling terminal-based user input and graphics.
- Random food generation and snake growth implemented.
- Snake movement wraps around screen edges, and the game ends when the snake collides with itself

iii. What did you learn from this exercise?

We learned how to use the `ncurses` library for controlling terminal output, handling non-blocking keyboard input, and managing screen updates. We also became comfortable with managing multidimensional arrays for the snake's body and handling real-time game loops. Working with a text-based interface in `ncurses` was new and challenging for both of us.

iv. Areas of Improvement:

With more time, we could improve:

- **Game Difficulty:** Adding difficulty levels, such as increasing the snake's speed as it grows longer.
- **Scoring System:** Implementing a scoring system to track the player's progress.
- **Graphics:** Enhancing the visuals with more detailed output or using a different library for richer graphics.

v. Future Scope:

In the future, this project can be extended in several ways:

- **Scoring System:** Adding scores based on how long the snake survives or how much food it eats.
- **Levels:** Introducing levels of increasing difficulty.
- **Multiplayer Mode:** Adding the option for multiple players to control different snakes on the same screen.

vi. Contribution:

- Raj Varshney:
  Responsible for coding the snake movement, game logic, collision detection, random food generation. Managed the GitHub process, created the README file, and uploaded the files. Recorded and edited the demo video.

- Ramisetty Siva Sravan:
  Worked on integration of the `ncurses` library for input/output handling, debugging, and preparing the submission report. Assisted with initial brainstorming and provided feedback during discussions.