

Title: Development of Enigma Escape - A Maze Game in C

1. Introduction

The report outlines the development process and key aspects of "Enigma Escape", a maze game implemented in the C programming language. The game features dynamic maze generation, player interaction, scoring mechanisms, and a time limit for added challenge.

2. Objectives

The primary objectives of the project were to:

- Develop a maze game in C with dynamic maze generation.
- Implement player movement, scoring, and time management features.
- Create a visually appealing user interface with ASCII-based graphics.

3. Methodology Design:

The game mechanics were designed, including maze generation using the Recursive Backtracking algorithm, player movement controls, scoring based on collecting food items, and time management.

Implementation: The game was implemented in C, using standard libraries for input/output and random number generation. Functions were developed for maze generation, player movement, scoring, and time tracking.

Testing: Extensive testing was conducted to ensure the functionality and correctness of the game

Optimization: The code was optimized for efficiency and performance, especially in maze generation and player movement algorithms.

4. Challenges Faced

Several challenges were encountered during the development process, including:

- We faces a lot of difficulty creating the GUI. We tried several libraries like gtk, qt, windows etc. But we were not able to create the UI
- Faced lot of challenges in integrating different functions together ,in passing proper arguments.
- Debugging the code also consumed a lot of time.

5. Results

The Enigma Escape project successfully achieved its objectives, resulting in a fully functional maze game with the following outcomes:

- Dynamic maze generation with varying difficulty levels (easy, medium, hard).

- Player interaction via keyboard controls for movement and food collection.
- Scoring system based on collected food items and reaching the exit within the time limit.
- Colorful ASCII-based graphics for maze elements, enhancing the visual experience.

6. Future Improvements

Several areas for improvement and future enhancements were identified, including:

- Enhanced Graphics: Implementing more detailed and visually appealing ASCII art for maze elements and player characters.
- Additional Features: Adding power-ups, obstacles, or enemy characters to increase game-play complexity and excitement.
- Multiplayer Mode: Introducing a multiplayer mode for competitive or cooperative game-play experiences.

7. Conclusion

The Enigma Escape project demonstrates the successful implementation of a maze game in C, providing an engaging and challenging gaming experience for players. By addressing key objectives, overcoming challenges, and achieving desired outcomes, the project highlights the potential of C programming for game development. With continued development and refinement, Enigma Escape has the potential to become a popular and enjoyable game for players of all ages.

8. Acknowledgments

We acknowledge the contributions of all team members involved in the development of Enigma Escape.