National College of Computer Studies

Tribhuvan University

Institute of Science and Technology

Project Report on

"Text-based Choice Game"

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Abstract

Text-based Choice Game is a console game that offers players the chance to make choices and solve puzzles in various scenarios. It presents an intriguing storyline where players' decisions dictate their progress through the levels. The player is trapped in the room and must escape by making various decisions. Some decisions can change the direction of the whole storyline.

This game was developed in C programming language using different data structures such as linked lists, arrays etc. The main objective of this project is to create a captivating text-based adventure game with interactive choices, inventory management, and save/load functionality. It contains a story in which players must make decisions or solve different puzzles to complete and escape. It also uses files to save the state of the game so that players can load the game from wherever they had left off before.

The project was successful in achieving this objective, resulting in a fully functional console game using the C language and various data structures.

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1. Introduction

1.1. Introduction to project

The project revolves around developing a text-based console game using the C programming language. This game provides players with the opportunity to engage in decision-making and puzzle-solving within a variety of scenarios. The central aspect is its captivating storyline, where the choices made by players shape their advancement through different levels.

Enhancing the gameplay, the game includes an inventory system where players must effectively manage crucial items to overcome challenges. Moreover, the integration of checkpoints allows players to save their progress and resume from saved points, facilitated by efficient file handling techniques.

1.2. Problem Statement

The challenge was to design and develop an interactive text-based adventure game using the C programming language. The game will provide the player with the ability to navigate through different scenarios, make choices and solve puzzles. It will present a compelling storyline driven by player decisions, emphasizing their strategic thinking and decision-making skills. Additionally, the game is expected to incorporate an inventory system where the player must manage the items needed to progress. In addition, the project aims to implement a checkpoint mechanism, allowing players to save their progress and resume from the point of interruption using efficient file management techniques.

1.3.Objective

The project aims to develop a C-based text-based game where players can make choices and solve puzzles within different scenarios. The objective is to create an interactive and engaging gaming experience that involves decision-making and inventory management, allowing players to save and resume their progress.

2. Implementation

2.1. Tools Used

This project was written in C programming language that is compiled using MinGw compiler. Additionally, the project employees Visual Studio Code (VS Code) as the integrated development environment (IDE) to write, debug, and manage the code efficiently. VS Code offers a range of features such as syntax highlighting, code completion, and debugging tools, making the development process smooth and productive.

2.2. Implementation detail of module

This game allows players to make a decision that is based on current puzzles or situations. Here is the brief description of the features that is implemented on this game:

Story/Puzzles : The main story or puzzles are implemented using the concept of trees. The structure contains description, node id and pointer to left or right pointer to next node. The next node is determined by the choice of players.

Choice and Inventory : Every story node contains its own choice list which is implemented using a linked list. The list contains choice and different variables to indicate whether to proceed to next node, whether this choice lose a life, whether the choice is already completed etc. Also the program consists of a global linked list called Inventory that contains items added to inventory.

Checkpoint : There is also a stack called checkpoint which is implemented using linked list. The address of the current node is pushed into the checkpoint stack so that the player can resume from the checkpoint if all the lives are lost.

Save File : File handling is used to save the current game locally. The node id, inventory and life are saved on the file locally so that if the user opens the game after quitting he/she can resume the game from the point where he/she left previously. If the file is empty then the game begins from the root node of the tree.

3. Conclusion

The main objective of this project is to build a console-based choice game using different data structures to implement different features such as story/puzzles, choices, inventory, checkpoint, save in file etc. Through this project, I learned the importance of planning, organization, and attention to detail in software development. At the completion of this project we are able to make a choice game implementing data structure and hence the project is completed successfully.