Group 14

SHEHRYAR DAWOOD, JAMES DWYER, LUIS ZAYAS GUERRERO, PRANAV SHARMA

Purpose

We developed this game to use object-oriented programming and demonstrate how useful it can be in the development and production of software that others will have fun using.

Our motivation behind making this game was to demonstrate our creative potential while exercising the skills we have.

Alternatives

Some alternatives to our game would be other games, such as Silent Hill, Five Nights at Freddy's, or even the Outlast series

Our game is different because our game generates random mazes every time you play, resulting in a new and different experience which each time you play

Core Features

- Random mazes that increase in size by level
- Armor that can be picked up throughout levels
- Multiple enemies roaming around the maze
- Items to pick up and increase visibility for a certain duration
- Engaging combat between the player and enemies
- A point system to keep you trying to beat your high score

Technologies

Our primary technology for implementation was the use of Unreal Engine 4, as well as coding in C++ to run the system. Visual Studio was also used to build the game while compiling the code.

Algorithms

In order to generate the maze, we used a backtracking algorithm to essentially carve out the maze from a square grid

For the enemies AI, a chase algorithm was used, checking if the player was in the field of view of the enemy, then running to the location of the player, or where it last saw the player.

To spawn items, we looped through all of the accessible areas for the player and spawned items based on index, ensuring that no two items would spawn on top of each other.

Future

Our future plans for the game will include adding more items and enemies to the game, allowing the player to have more weapons, and switching to a currency system instead of a point system

Our game can be improved by making gameplay and combat smoother, and improve the functionality of certain features and items.