**# Project Report: Escape Maze Room Game**

**## Abstract**

The Escape Room Game with Alarm System is a computer graphics project developed using OpenGL and C++ that simulates an interactive maze-like environment. In this game, the player's objective is to navigate through the maze and deactivate an alarm system by entering the correct code. The project aims to provide an entertaining and challenging gaming experience while showcasing the capabilities of OpenGL and C++ graphics programming.

**## Introduction**

Escape Room games have gained popularity as real-life entertainment experiences where players are locked in a themed room and must solve puzzles and riddles to escape. This project takes inspiration from this concept and presents a digital escape room with a unique twist—an alarm system that must be deactivated by inputting the correct code. The game leverages OpenGL for rendering 3D graphics and C++ for programming logic, providing an immersive and engaging gaming experience.

**## Methodology**

### 1. Game Environment

The game environment is designed as a 3D maze using OpenGL's graphics capabilities. The maze is generated procedurally to ensure variability in each playthrough, making the game more challenging and replayable. Textures and lighting effects are applied to create a visually appealing and immersive environment.

### 2. Player Controls

The player controls a first-person perspective character using keyboard and mouse input. The character can move in four directions (forward, backward, left, and right) and can look around to explore the maze.

### 3. Alarm System

A central element of the game is the alarm system. The alarm is triggered when the player enters a specific area within the maze. To deactivate the alarm, the player must solve a code-based puzzle.

### 4. Code Puzzle

The code puzzle consists of a series of clues and hints scattered throughout the maze. The player must gather these clues and deduce the correct code to turn off the alarm. The code may involve numerical sequences, patterns, or riddles, adding an element of mystery and challenge to the game.

### 5. Graphics and Rendering

OpenGL is used to render the 3D graphics of the maze, character, and alarm system. Lighting, shading, and texture mapping techniques are applied to enhance the visual quality of the game.

### 6. User Interface

A user-friendly interface is implemented to display vital information, such as the player's progress, collected clues, and a keypad for entering the code. The interface provides a seamless and immersive gaming experience.

**## Conclusion**

The Escape Room Game with Alarm System project successfully demonstrates the integration of OpenGL and C++ for creating an interactive and visually appealing gaming experience. By combining procedural maze generation, challenging code-based puzzles, and realistic 3D graphics, the game offers an entertaining and engaging escape room adventure. This project showcases the potential of OpenGL and C++ graphics programming in game development and interactive simulations, opening up possibilities for future enhancements and game expansion.