**Programming Project Report**

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**Problem Statement:**

The goal of this programming project is to create a retro video game in OpenGL. The player will explore a 2D maze to find and collect hidden treasure. In this project, the tasks were split into two different projects. The first task was to create and display a 2D maze made of texture mapped cubes. This task is to add treasures at random locations in the maze and implement player navigation to collect these treasures while exploring the maze.

**Design:**

For this programming project, I used Dr. Gauch’s texture3 and the code I wrote for the last assignment as starting code. There were no major choices being made for this assignment as everything was chosen for the first part. I did, however, use mt19937 random number generator in my code to determine where to put the gems and gold blocks. My code for the random number generator is below:

**Implementation:**

To start this assignment, I started by updating the way I handled the textures, as my last implementation was very slow and annoying. After that update, I finished the movement portion by adding callbacks to a collect function that will handle deleting the gold and gems block and print statements. After finishing that, I then moved on to cleaning up my code.

**Testing:**

For testing, the only inputs that were allowed were x, y, z, r, t, w, a, s, and d. At the end of the assignment, everything was working as expected.

**Conclusions:**

Overall, this project was a success. The program displays a 2D model of a map from a text file that is filled with eight randomly placed treasures that the user can pick up. This project probably took about three hours to complete.