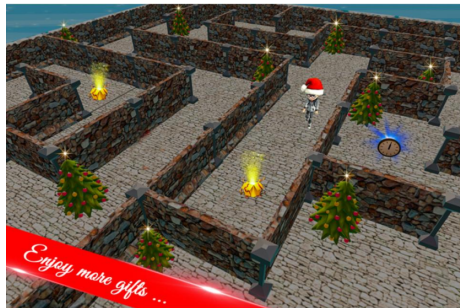# 3350 Project Proposal

Team #7:

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Overview:

We are proposing a maze game, where there are 3 pre-defined maps total that will each be presented to the player after the previous maze is solved. The maps will be presented in the order of difficulty, from easy to hard.
The game will time how long it took the player to solve each stage + the entire game, and show that screen after beating the game.

- 3D
    - Option 1: Image-based liked (first choice)

    Source of Image:
    https://apkpure.com/christmas-maze-runner-3d/com.fukat.games.MazeRunner

    - Option 2: give character first person view of the scene while running around? (back up choice)

    Image Source:
    https://steprimo.com/android/us/app/com.EntertainmentTheory.EscapeTheGlade/Maze-Runner-3D-MAZE/

Functional Requirements/Features:

- Welcome Screen
    - Display Title
    - A button to rules page
    - A button to start game
    - A button to scoreboard (if time / optional)
    - A credits page

- General Controls
    - Start the game
    - Pause/end game
    - Save/load game (if time / optional)
    - Music
        - On/Off
        - Volume (if time / optional)
    - Color: Dark themed
- 3 maze maps:
    - First stage: easy
    - Second stage: medium
    - Third stage: hard
    - Potential for different themes across different stages (if can tie into plot)
        Example Plot - escape room idea like squid game:
        - First stage: escaping from a cage
        - Second stage: escaping from the castle
        - Third stage: trying to find a plane to leave the stranded island

- A character controlled by arrow keys
    - cannot walk through walls
    - need to find exit

- Game will time player:
    - From start to end of a stage
    - From start to end of all 3 stages

Non-Functional Requirements:

- Be reliable: don't crash mid-game.
- Scalability: structured in a way that preserves the ability to implement more stages and/or other features in the future

Design Constraint

- Main framework programmed in C++
- Platform: Windows 10 and above?
- Graphics… potentially with openGL

Goals:
- Start simple, add features as time allows
    - Complete the basic barebone of a maze game first, then add features as time allows (e.g. don't focus on adjusting volume first or styling)

Plan (Order of development):
- Integrate map
- Movement first
- Map interaction first
- Timer
    - How to calculate duration
    - How/When to present in a formatted way
- Welcome screen
- End screen
- Pause game
    - Timer

Other Features if time:
- music/theme
- save/load game
    - Timer
    - Stage
    - Player position
    - Avatar

Thoughts on Potential Features to Implement if Time:
- Other color themes
- Damage system
- Coin-points system
- Boost in Speed (Like Mario Mushroom)
- Game buff system (positive to enhance movement, negative to hinder player's goal)
- Adjusting player speed

Potential Meet Times:

Monday: 11-12
Thursday: 12:30 - 1:30
Sunday: 2pm - 4pm (most likely just 1 hr, but stating it for now just in case)