Project Description

Jumpman!

A game where you control a player who is in a maze and has the objective of saving someone at the top. On the way he has to eat coins or power ups to jump higher and faces different enemies guarding random rows.

Competitive Analysis

Similar projects I have seen online to Jumpman include Pacman and the game "Jump King". My goal is to combine the two to make a maze like game with enemies that still involves the jumping component. The project will be similar to Pacman with enemies and coins to collect, but will differ through the jumping aspect and end level. Similarly, the project will differ from Jump King with the consistent enemies rather than 'bosses' and an overall more maze-like feel.

Structural Plan

The project will be organized into subsections so that it is easier to create the game.

- Maze Generation for the initial background
    - Uses a created 'cell' object
- Player movement
    - Through key presses
- Enemy and Coin creation
    - Random generation but checking legality consistently
- Player and Enemy/Coin interaction
    - Making health changes is player 'loses' fight
    - 'Killing' enemy if played 'wins'
    - 'Eating' coins to gain jump powers
- Jumping component
    - Want to make this out of key press sensitivity
    - Depending on how long you hold the spacebar, that's how high you will jump
- End Level
    - Special level with final boss
    - Has different actions similar to Mario

Algorithmic Plan

Maze generation - solving through recursive depth first search algorithm which uses backtracking.

Path finding (for enemies) - A* algorithm (similar to Dijkstra's algorithm) might have to implement a Graph class in order to simplify logic.

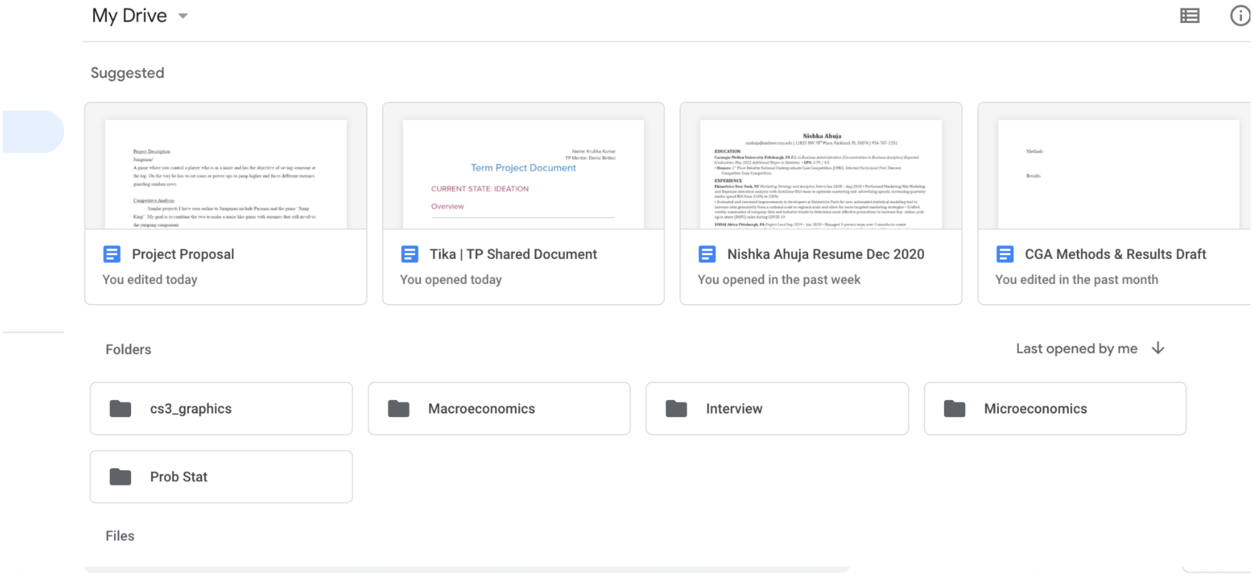
Timeline Plan

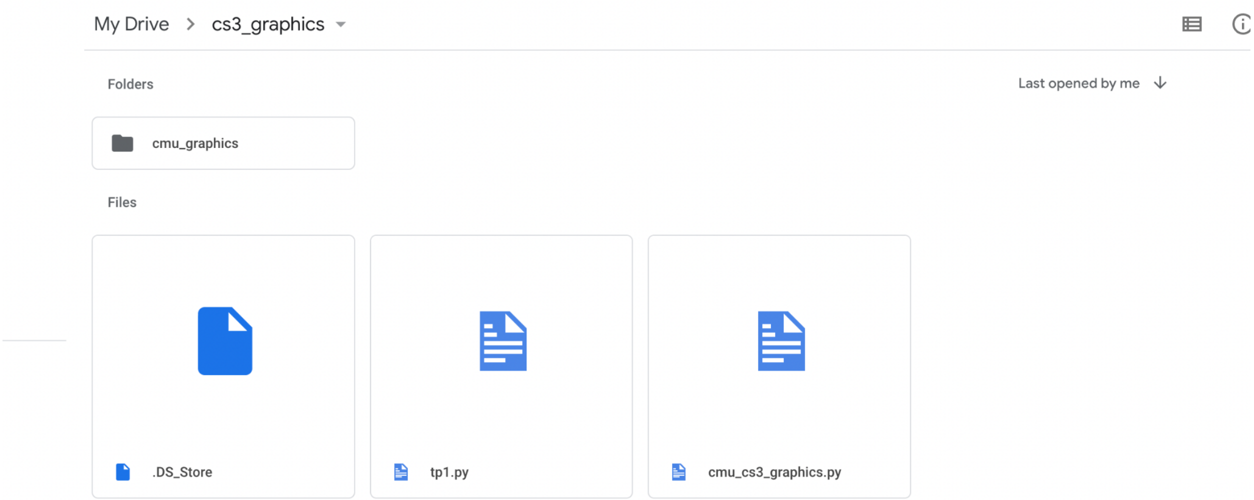
TP1 - maze creation, player movement, enemy/coin generation

TP2 - jumping mechanism, enemy interaction, end level

TP3 - side scrolling and other additional features after MVP

Version Control Plan





Module List

None!!

TP2 Update

I changed my design quite a bit. There is no longer the plan to have a jumping mechanism (maybe after I reach mvp). I'm renaming my Project " Save 112! ", where the goal is to go from "your dorm", the starting point of the maze, into "112 lecture", in order to save 112. The maze has these coins that you need to eat (the number depending on the level of difficulty) in order to unlock the "112 lecture hall". Finally there are enemy(s) that approach your player and if they reach you, your score gets dropped by ½ and you have to eat more coins to unlock the lecture. My maze is still using DFS generation but is now using BFS path finding.

TP3 Update

Added pathfinding onto my enemy(s) through BFS and runs automatically without key press. Added the end screen and all the cool graphics features as well as the direction section. Made an "ouch" graphic for when the player and enemy collide. Allowed for collision to occur not only when the player moves into the enemy but vice versa as well. Added a power up that can be used if you give up a certain amount of coins in order to move a random enemy to a random location.