**Project Description** [2.5 pts]: The name of the term project and a short description of what it will be.

The name of the term project is tentative, but as it stands it is called “Enter the 112 Dungeon”.

Basic Description:

The player is loaded into a “dungeon” where there are enemies you must defeat using the weapons given to you. There are various obstacles and other objects in the map that the player can interact with to block or evade the enemies. There are varying enemy types and obstacle types, and the goal for the player is to travel as far into the dungeon as possible. Each round, the obstacles change, and the enemy waves increase in difficulty. When you defeat all the enemies the round ends. As you explore deeper into the dungeon, more powerful weapons await the player, but with that comes more powerful enemies appear. How deep can you explore the dungeon? What treasures await the player in the depths of the dungeon?

**Competitive Analysis** [2.5 pts]: A 1-2 paragraph analysis of similar projects you've seen online, and how your project will be similar or different to those.

This game is modeled off of the game “Enter the Gungeon”. In this game, the player starts off with a series of different playable characters, each with its own unique skill set and abilities. After selecting a character, the player enters to dungeon, and begins travelling from room to room, clearing the enemies from each room until all the enemies on that floor are dead. Sometimes there are bosses that appear, as well as some other NPCs for the player to interact with. There is a shop, some minions that can be hired, and a currency system.

Compared to my project, “Enter the Gungeon” has way more elements and aspects, as well as customizable abilities and a lot of enemy types. Each floor has multiple rooms, each room is unique, and each floor is randomly generated when the game starts. There are way more features included in the real game, and for my project I just want to create a simple game with one single room, with a few objects and a few enemy types. I am not sure if I will do bosses yet, but the goal for my project is just an extremely watered-down version of the real game.

**Structural Plan** [2.5 pts]: A structural plan for how the finalized project will be organized in different functions, files and/or objects.

Structure:

I wanted to organize my final project into multiple pieces, I will create separate files for various different elements in the game and have one centralized location where I will combine the elements together. I also am using folders to separate the images for different elements in the game, and I will call them accordingly in my code.

**Algorithmic Plan** [2.5 pts]: A detailed algorithmic plan for how you will approach the trickiest part of the project. Be sure to clearly highlight which part(s) of your project are algorithmically most complex and include details of the algorithm(s) you are using in those cases.

For my MVP, the goal is to create a map generation structure, so I will be using map generation resources to figure out the logic for my game. I want to use the cellular automata algorithm, that way I can better portray the “dungeon” element of my game in the map.

From the lecture, and modified a little bit for my code, here is the logic I will be following:

1. Take each cell in the background and randomly assign the cells as 1 or 0.
   1. 1 will be obstacle/wall, and 0 will be open space
2. Take a new grid, which will be used for the real background, and assign it’s values based on some conditionals:
   1. (Subject to change) If cell is 1 and at least 4 of the neighbors are also 1s
      1. OR
   2. (Subject to change) if cell is a 0 and at least 5 of its neighbors are 1s
      1. Then the new cell will be a 1.
   3. Otherwise, grid cell is 0.
3. From new newly generated grid/map, I want to pick out the open space and insert in new objects that act as obstacles.
   1. Random assignment of obstacles in open space
   2. (Obstacles are subject to change and this is past the MVP goals)

* **Timeline Plan** [2.5 pts]: A timeline for when you intend to complete the major features of the project.

Week (4/17-4/22):

Sunday:

* Finish up edits on character movement
* Interaction with “walls”

Monday:

* Begin working on map generation
* Polishing character and projectiles

Tuesday:

* Finish up body of code for map generation
* Be done with character movement and projectiles
* Begin work on enemies

Wednesday:

* Polish map generation
* Finish body of code for enemies

Thursday:

* Should have a character that can move through a randomly generated map smoothly
* Random enemies that are a work in progress (some bugs to fix)

Week (4/23 – 4/29):

Goals for this week:

* Implement skins
* Polish game code
* Death animations?
* UI?

* **Version Control Plan** [1.5 pts]: A short description **and image** demonstrating how you are using version control to back up your code. Notes:
  + **You must back up your code somehow!!!**
  + **Your backups must not be on your computer** (ideally, store them in the cloud)

I’ve been saving my code in drafts and making copies each time I decide to make a fundamentally large change. The copies are stored in a separate file on my local hard drive and backed up on my “Onedrive” in the cloud.

* **Module List** [1 pts]: A list of all external modules/hardware/technologies you are planning to use in your project. Note that any such modules must be approved by a tech demo. If you are not planning to use any additional modules, that's okay, just say so!

Not using modules

**TP3 Update:**

Major changes:

* Enemies don’t shoot projectiles; they just walk towards and try to get on top of player
* Projectiles can destroy map, and help player dig to enemies that are separated from them
* Added a UI, and navigation shortcuts to go between Start Screen, Game Over, and Main Game