

Final Project Proposal Dungeon Crawler

We want to create an RPG within a maze.

We will use a dungeon-generating algorithm in order to carve up randomly generated dungeons for each level. The dungeon generating algorithm will allow us to have infinite levels with a unique dungeon in each level. The hero will go around from floor to floor, traveling through dungeons. We will have a class that keeps track of the score, time, and other details which will be shown at the end of the game.

In generating a dungeon, our process works by generating rooms within a larger 2D array, and then carving a maze in the areas around the rooms. We then open paths from the rooms into the maze, and then use pre-order traversal to recursively “uncarve” dead ends, for a less cramped dungeon design.

After the maze is created, we will add in the RPG elements. We will create different instances of items, characters, and monsters. The hero will be able to move using the WASD keys. There will be randomly generated chests that appear in each room with randomly generated items. There will also be randomly generated healing tiles that will heal you for a random amount of HP. However, this amount will be capped.

The combat between the hero and the monsters will be kept in a queue to determine the attack order. The monster will move one tile in a random direction every time the hero moves. However, when the hero is close enough to the monster (3 tiles), the monster will automatically initiate the combat system. This way, the hero can choose to avoid interacting with the monsters.

We will use piggybacking to restore the original tiles that the hero steps on while moving.

We will only show the portion of the map that the hero is in and we will move the frame, with the hero at the center.

We will code it in the terminal for now, but if we have time after coding the above, we will try to implement this in processing.