Procedural Pals
Dylan Davidson, Trevor Roman, Daniel Sledd, James Vincent

Assignment 3 - Make a Game

How To Play

Goal

The objective of Top Souls is to reach the exit and defeat the boss. The player starts out in a procedurally generated dungeon of enemies, and must fight their way to find the exit which leads to the final boss fight for victory.

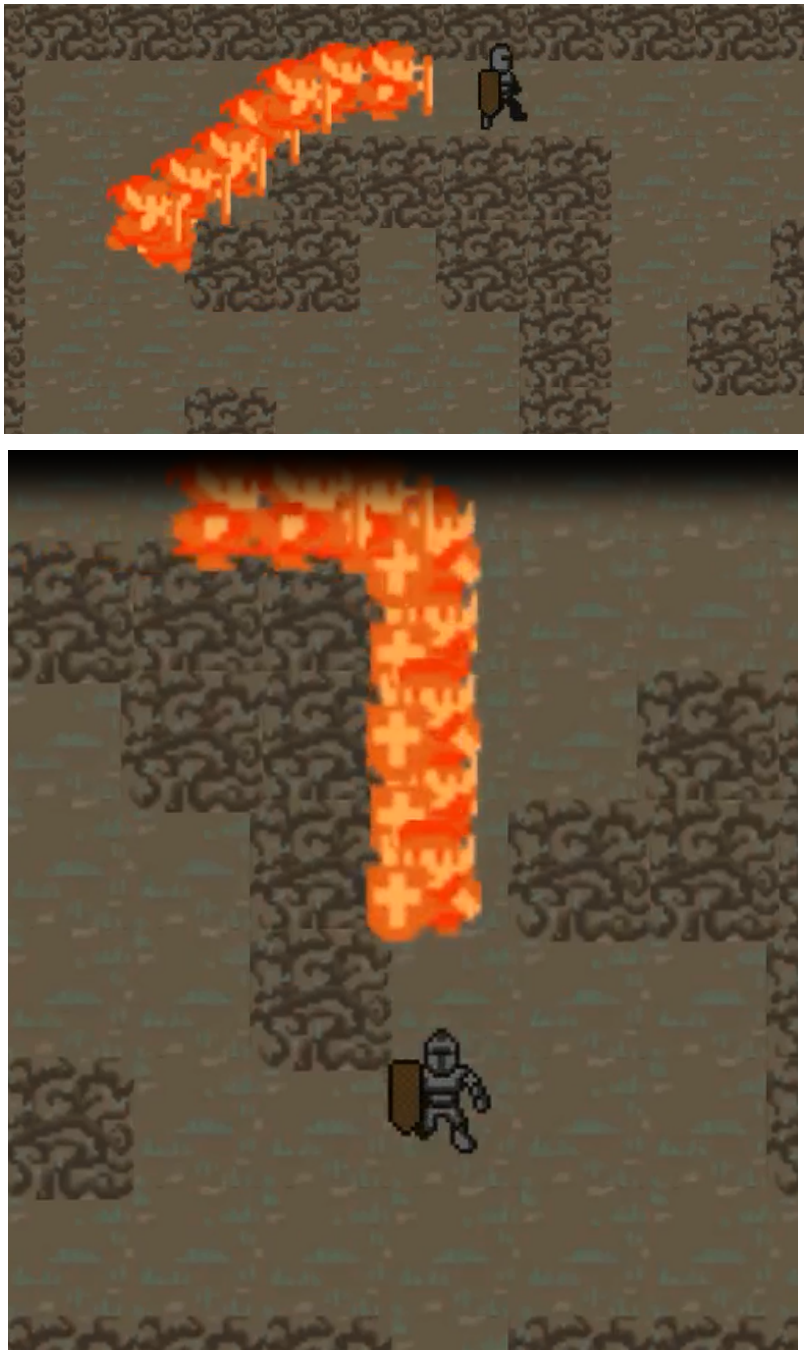
Controls

The player is moved using **W**, **S**, **A**, and **D** for Up, Down, Left, and Right. The player can attack using the **Arrow Keys** to swing the sword in the direction they pressed the arrow key. The player can use their shield with the **Shift** key to block enemy attacks. The player can dodge using the **Space** key to avoid enemies.

The player has a red health bar in the top left of the screen which indicates their current health. The green bar in the top left indicates the player's stamina, which is used up by attacking, dodging, or blocking enemy attacks.

Artificial Intelligence

Top Souls features three main aspects of Artificial Intelligence. The first is A* Pathfinding for the enemies. We define a node mesh when the map is generated, so the algorithm knows the location of walls and open tiles. **Example:**



The second is Procedural Map Generation. We mimicked the Spelunky algorithm for generating unique paths from the start to end rooms in our map. Every time the game starts, we generate a unique layout that has a guaranteed path from the left to right side, with side rooms that have random entrances.

Our third is Procedural Room Generation. The interior of each room is procedurally generated, using a probabilistic algorithm. Each room has a unique number of inner walls,

power-ups, and enemies. We also decide the number of enemies based on how far the room is from the player's initial spawn.

Examples:

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