

Project Overhaul  
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APCS pd6

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## Final Project Proposal Random Forest

We will create a procedurally generated maze, using 2D arrays.

There will be 4 paths that branch off into 3 branches each, with each branch branching off into 2 paths.

There will be 2 endings, and the rest will be dead ends.

The character will start at the center of the maze, and will have the option to move up, down, left, or right. He has a vision of 3 units, as well as wherever he has gone.

Walls will be represented by |, and open paths will be represented by -.

When we display the array for the player to see, we will remove the commas.

The player will have to escape the maze within a certain amount of time.

We will also record the amount of moves.

Possible additions:

Difficulties

- This will affect the amount of dead ends
- Larger mazes with higher difficulties

Monsters

- Monsters could be at dead ends, and will make the time go up

Methods:

generate()

- Start in middle
- 4 paths lead from middle in each direction
- Each path will move forward designated amount of spaces
- Then branch into 3 paths each
- Paths will have random variable, allows it to turn in direction other than direction it came from
- If a space touches 2 paths, it we set it to 2, which is a protected space that can't be moved into
  - Every time we create a new 0 (path), we check all the values around it, and if those values touch a 0, that value becomes a 2
- We will randomly choose one of the paths to iterate through until the end of the maze, and the others will be set to iterate through a set amount of times to become dead ends (there is a chance that they will become exits, but there is a guaranteed exit)