

MAZE GENERATION:

For generating the actual maze grid, a 2D array is created of type MazeCell is created. Initially, an empty maze is created, all internal walls. The initial maze is completely non-movable. Once the array has been fully populated, we move on to generating the pathways, which we did by using the "randomized depth-first algorithm", as explained by Wikipedia: https://en.wikipedia.org/wiki/Maze_generation_algorithm#Randomized_depth-first_search. TL;DR, we basically just have a complete block of walls and randomly travel through the array, carving out connected pathways that the player will be able to move through. Since all the MazeCells in the array are all have isMoveable set to false, each time it is visited and carved out, isMoveable is updated to true. On top of this, once the maze is generated, the player and cats are spawned in each of the corners and the cheese is spawned randomly.

MAZE DISPLAY:

For displaying the maze, the grid array is traversed, and reads the state of each MazeCell and prints the appropriate character. This results in the grid being generated essentially like how a CRT TV would render images, starting from the top left pixel (cell) and ending in the bottom right corner. Though the maze render is pretty fast so it's pretty much instantaneous. As well, we have the player being able to see a one cell radius around them, to see any walls or openings. This is done by finding the adjacent cells are in the radius and displaying them.