

CRC Cards

Class: UserUI

- handling user input, passing it to Player class
- displaying game state (eg. Number of cheeses, prompt for input)
- can display end of game menu

Interacts with:

Maze
Player (Entity)

Class: DisplayMaze

- converting the integer Maze into character format
- storing the UI maze
- displaying the UI maze

Interacts with:

Maze
GameState

Class: Maze

- randomly generate a navigable 2D maze with set width and height
- create and store Entities existing inside the maze
- populate maze with said Entities on game start
- place cheese inside the maze at a random location far from the player
- update coordinates of each entity after each turn
- updates the maze when called to do so

Interacts with:

GameState
DisplayMaze
Entity
Cheese

Class: Entity

- stores entity's coordinates in row and column format
- stores entity's next move once input
- checks to see if a move attempted is valid (eg. Not trying to go into a wall)
- checks for all possible moves from the Entity's current location
- handles movement and changing of its own coordinates

Interacts with:

Maze

Class: Player (Subclass of Entity)

- receives input from the UI and changes Player's location in the maze accordingly
- counts number of cheese collected by the player
- checks if Player is caught by a cat
- checks if Player collects a piece of cheese

Interacts with:

Maze
UserUI
Cheese

Class: Cat (Subclass of Entity)

- stores previous move so the cat doesn't backtrack
- takes in all possible moves and randomly chooses one. Avoids picking previous location if possible

Interacts with:

Maze

Player

Class: Cheese

- stores position of cheese
- updates its own position when collected

Interacts With:

Maze

Class: GameState (Main)

- instantiates all UI and game logic
- does not directly manipulate any data
- handles turn-based system, runs until game ends

Interacts With:

Maze

UserUI

DisplayMaze