USER_NOT_FOUND

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Abstract

User_Not_Found is an upcoming survival horror video game. The player takes the role of a detective as they investigate the mysterious appearance of a girl and the circus monsters that followed. The AI in the game is used to give the non-playable enemy characters unique behaviors that allow them to navigate the world and interact with the player. Various algorithms and structures were designed to achieve this.

Working with Spectimation

The project is an endeavor between students of two departments. Spectimation is responsible for creating the models, animation, visual concepts and other artistic elements. Their team is supervised by Mr. Steve Carpenter. Donkey Bob Studio handles the implementation of their design by programming it into the game.

Technologies

unity

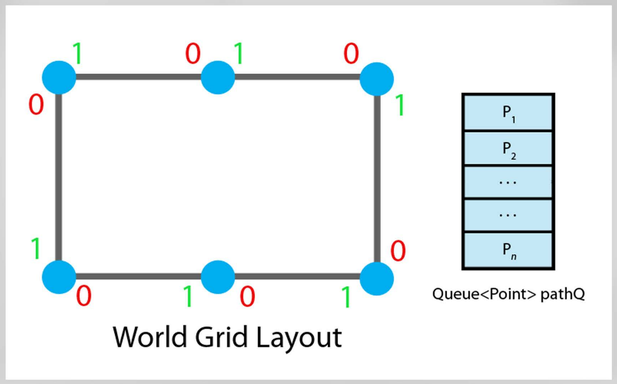
MAYA

blender

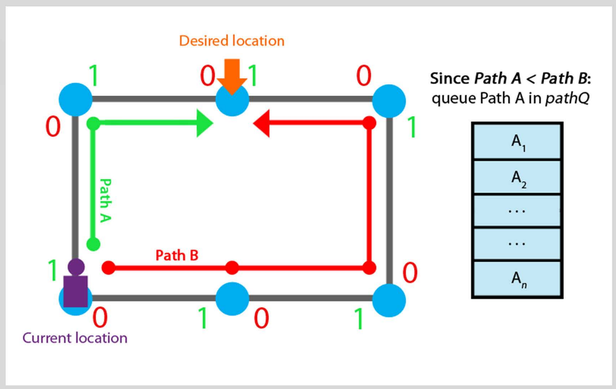
Visual Studio

Pathfinding & Navigation

- First, a world point grid was set up to determine the world coordinates that the enemy could move to
- Each point has an array with its neighbor points. Index 0 is leftmost neighbor, index 1 is right.



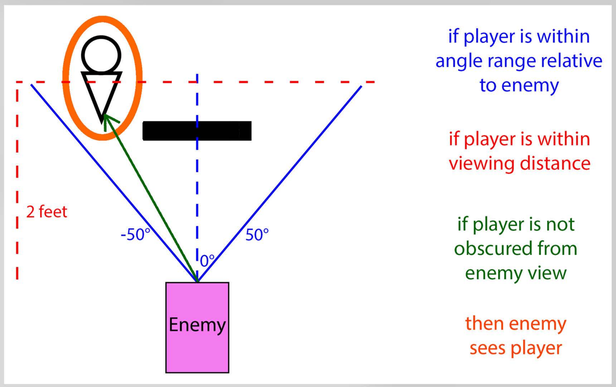
- To get to a desired point, a depth-first search is done in each direction from last point touched until it reaches the destination
- The shortest of the two paths is returned, and the points traversed in it are queued to *pathQ*



Player Detection

Player is considered seen if the following conditions are met:

- Ray from enemy to player is within angle range relative to the enemy
- Player is within the viewing distance from the enemy
- Ray from enemy to player is does not collide with other objects (not obscured)



Random Spawns

- Certain enemies appear spontaniously. Whether they appear is randomly determined.
- If the player enters the coordinate range of their area, appearance is decided by probablity rate
- If the enemy can appear and the player gets too close to their spawn point, they appear