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Final Project Prototype

Pacman

Summary:

Pacman is a game where the user controls a yellow blob who traverses a 2-dimensional maze collecting dots while avoiding ghosts who chase after him. The user wins by collecting all of the dots on the board before dying to a ghost. Pacman dies whenever he comes into contact with one. There are also powerups that the user can collect, which give Pacman a temporary power boost. While under the effects of the powerup, whenever Pacman touches a ghost, the ghost will die instead. The game ends when either Pacman dies to a ghost, or he collects all of the dots.

Features:

* Control Pacman’s movement using WASD keys
* Traverse a game board collecting dots
* Death when touching ghosts
* Powerups that allow Pacman to eat the ghosts, and disabling them for the rest of the game
* Game end when all dots have been collected
* Timer

Detailed Description:

The game will be played and displayed using Processing. The game will detect input of WASD keys, which will change the direction of Pacman, as long as there is no wall in that direction. The board will be a 2-dimensional array that stores Walls, Dots, Food, and Blanks. The moving objects, Pacman and the ghosts, will not be contained inside the array, but instead they will have x and y coordinates that correspond to a spot in the array. Pacman and each of the three ghosts will spawn in one of the corners of the board. Two of the ghosts will track Pacman and move after him, while the third will move randomly. Pacman will move at twice the speed of the ghosts. Each time Pacman moves, dots and food will be removed from the corresponding square on the board, which will be checked by translating (x,y) into 2D array indices. Pacman and ghosts will be stopped from moving into walls also by converting (x,y) into 2D indices. When a food is moved over, it will be consumed and a timer will start indicating how much time is left, and the ghosts will change color for the duration. Collision is checked by comparing x and y coordinates of ghosts/Pacman. When Pacman dies, the game will stop and the user will receive a message indicating a loss. When Pacman eats a ghost, it will be sent into prison, unable to move for the rest of the game and unable to harm Pacman. When all the dots are collected, the game will stop and the user will receive a message indicating a win.