

A 2 Player Maze Game

Ujjawal Sankhwar - 2019CS10412, Vivek Choudhary - 2019CS10413

May 2021

1 Introduction

We have designed a 2D 2 player maze game where one player has to catch the other player and one with higher aggregate score at the end of 4 rounds wins. The characters in this game are **Pacman** and **Blinky**. In this document Pacman is referred as Player A and Blinky is referred as Player B. The initial spawn position of Pacman and Blinky in the first round are referred as Position X and Position Y respectively.

Details about **Compiling and Opening the game** are given in **README.md**

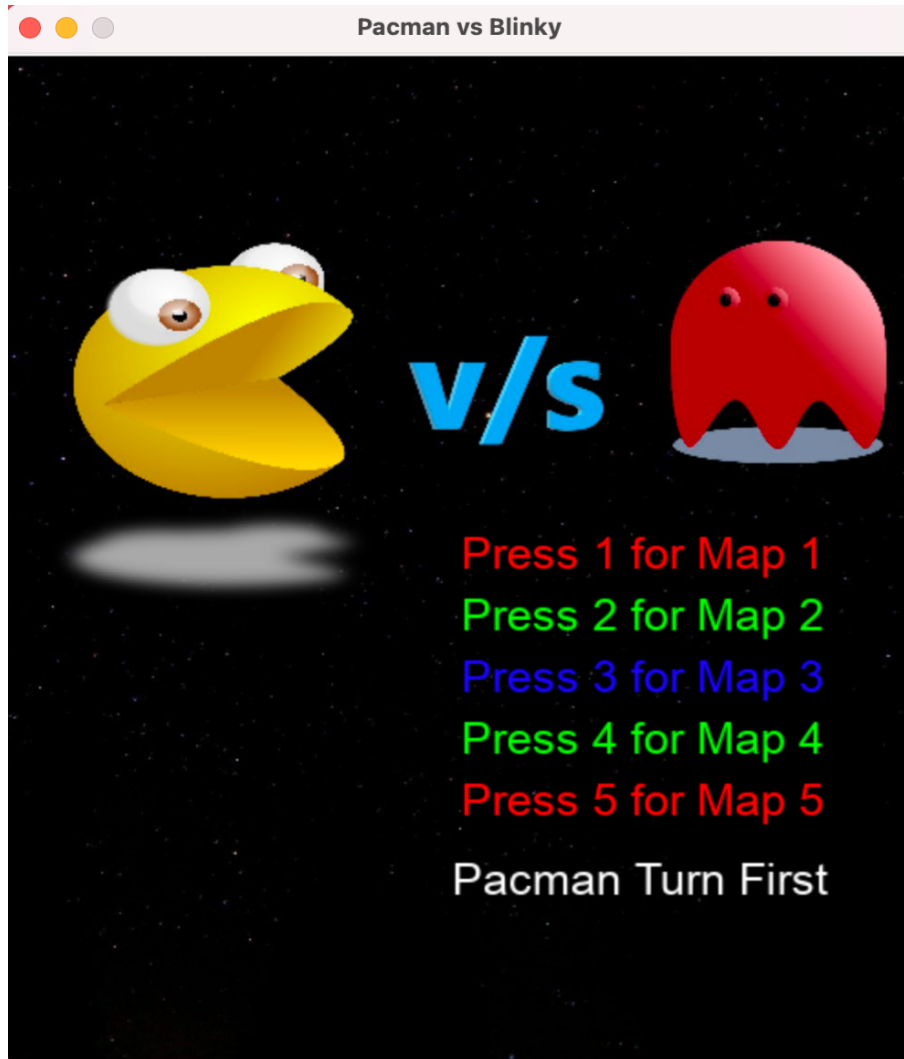
2 Game Rules

- Each match has 4 rounds. Each player gets 2 rounds to score.
- Score is calculated by the number of seconds spent by a player in a round.
- Scores are updated and displayed on the bottom left corner of the game window while playing.
- Pacman moves from the Arrow Keys while Blinky moves from w, a, s, d keys on the keyboard.
- Each player spawns at Position X and Y two times each. While spawning at a particular location, players gets to score in one turn and catch the other player in other turn.
- Each map has blue walls and black paths. Characters can move on the black path but cannot move through blue walls.
- A player can score atmost 60 points(Max Points) in a round.
- Round is over when the maximum score achievable in a round is reached or when both the characters collide.
- Player with higher aggregate score wins the match.

3 Game Interface

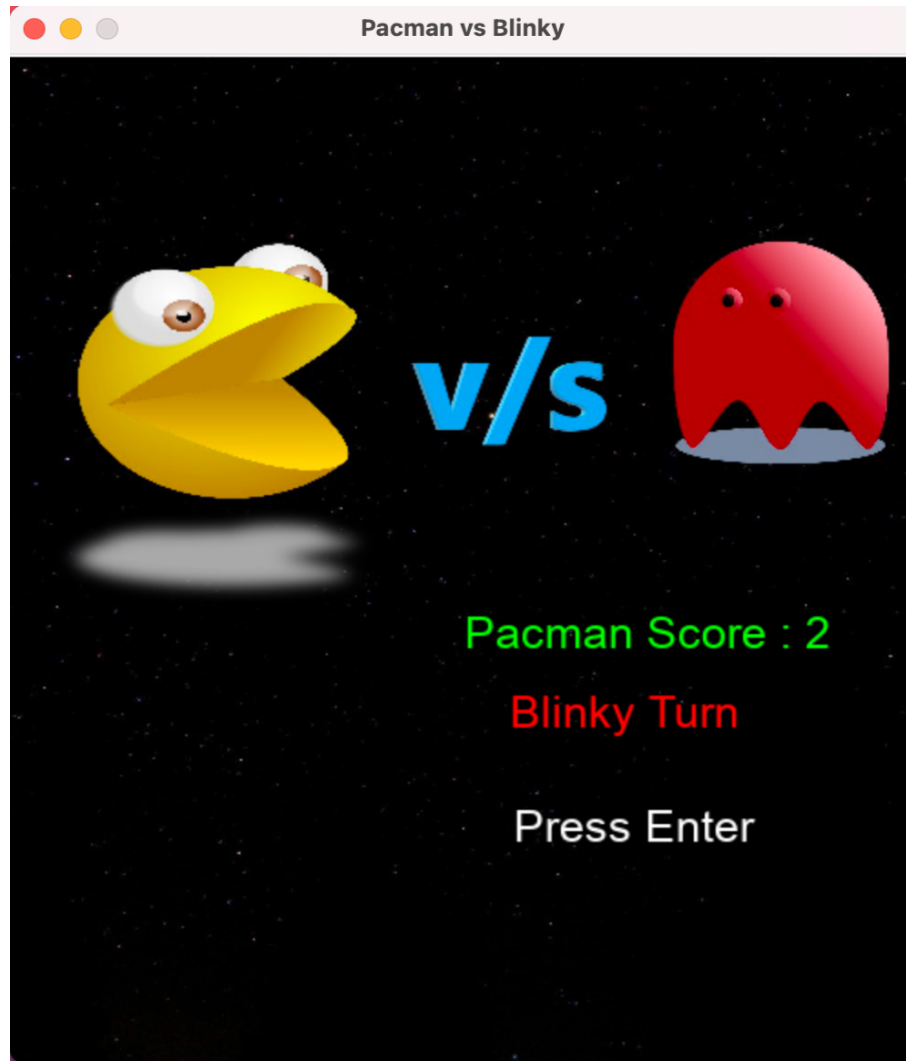
After starting the game window, it can be closed anytime by clicking on the close button on the game window or escape key on the keyboard.

3.1 Home Screen



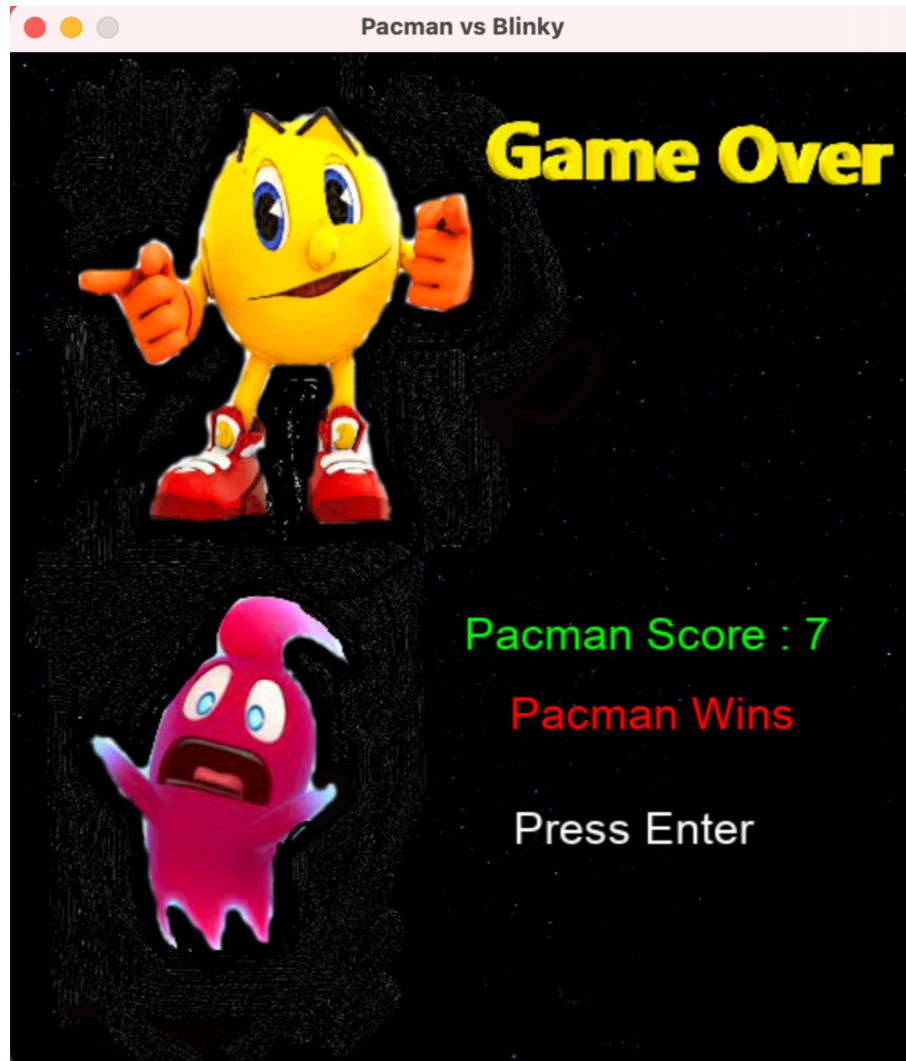
As shown in the image, player needs to select the map by pressing the appropriate key on the keyboard corresponding to a specific map to contest a match. Pacman gets the first chance to score in every match.

3.2 Intermediate Window



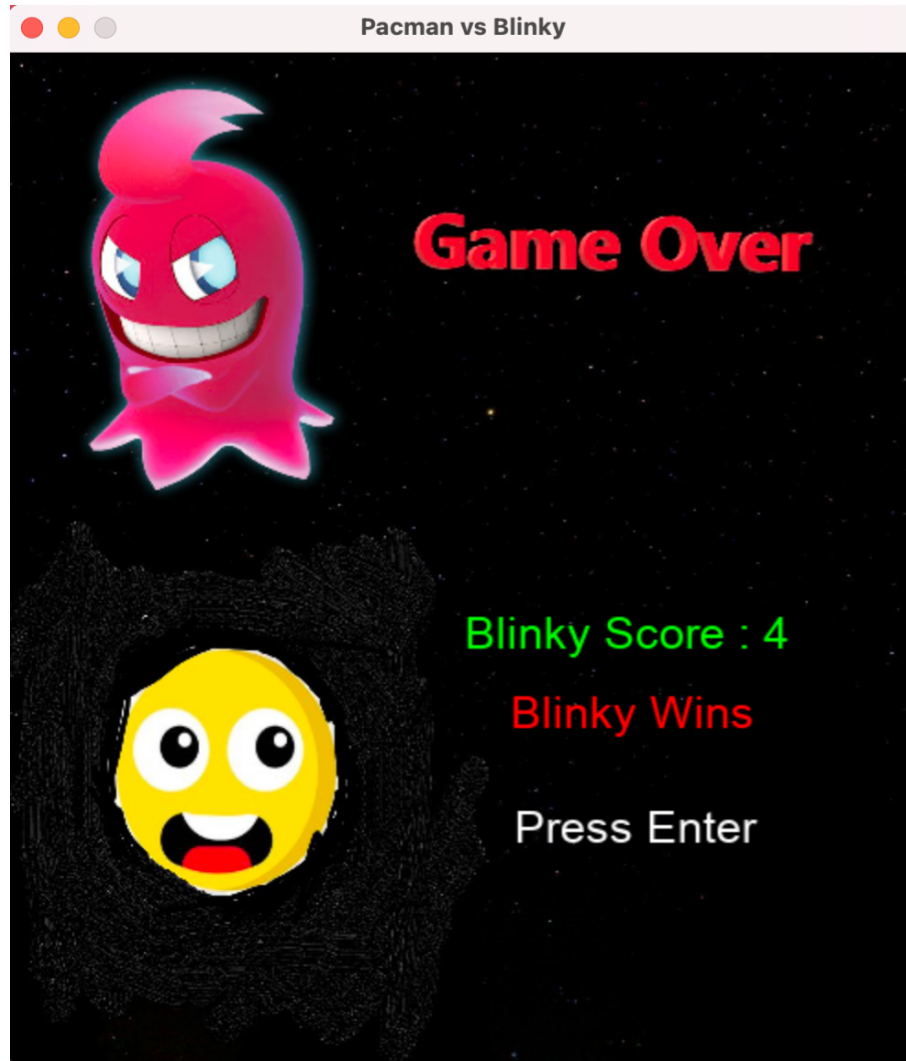
For every intermediate window, enter key needs to be pressed to start the next round.

3.3 Pacman Wins Window



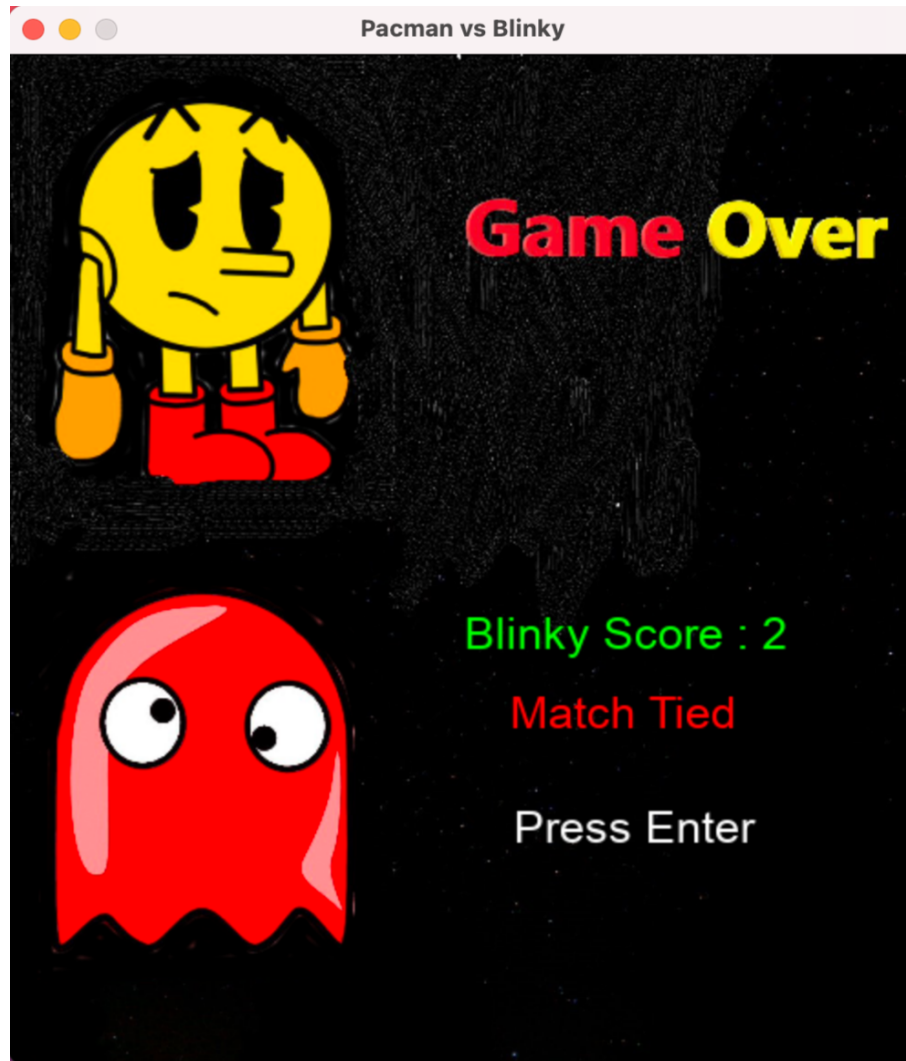
Enter key needs to be pressed to return to the Home Screen.

3.4 Blinky Wins Window



Enter key needs to be pressed to return to the Home Screen.

3.5 Match Tied Window

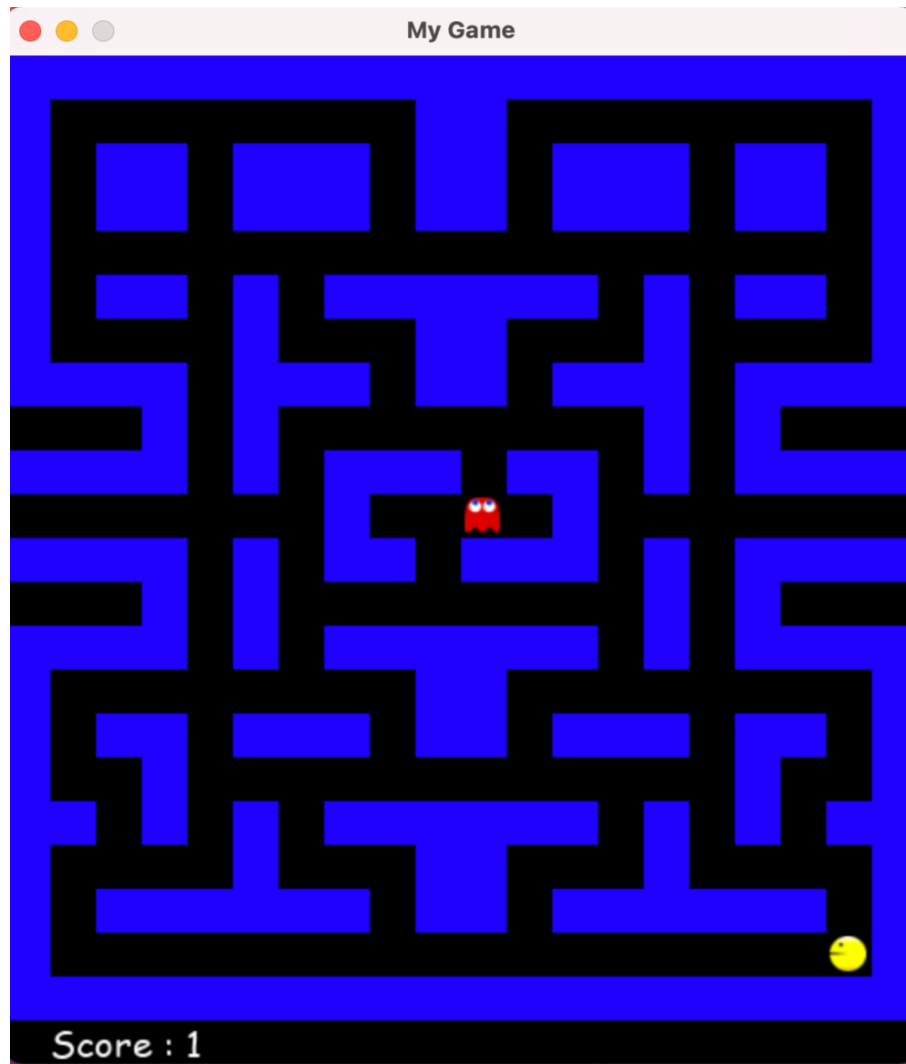


Enter key needs to be pressed to return to the Home Screen.

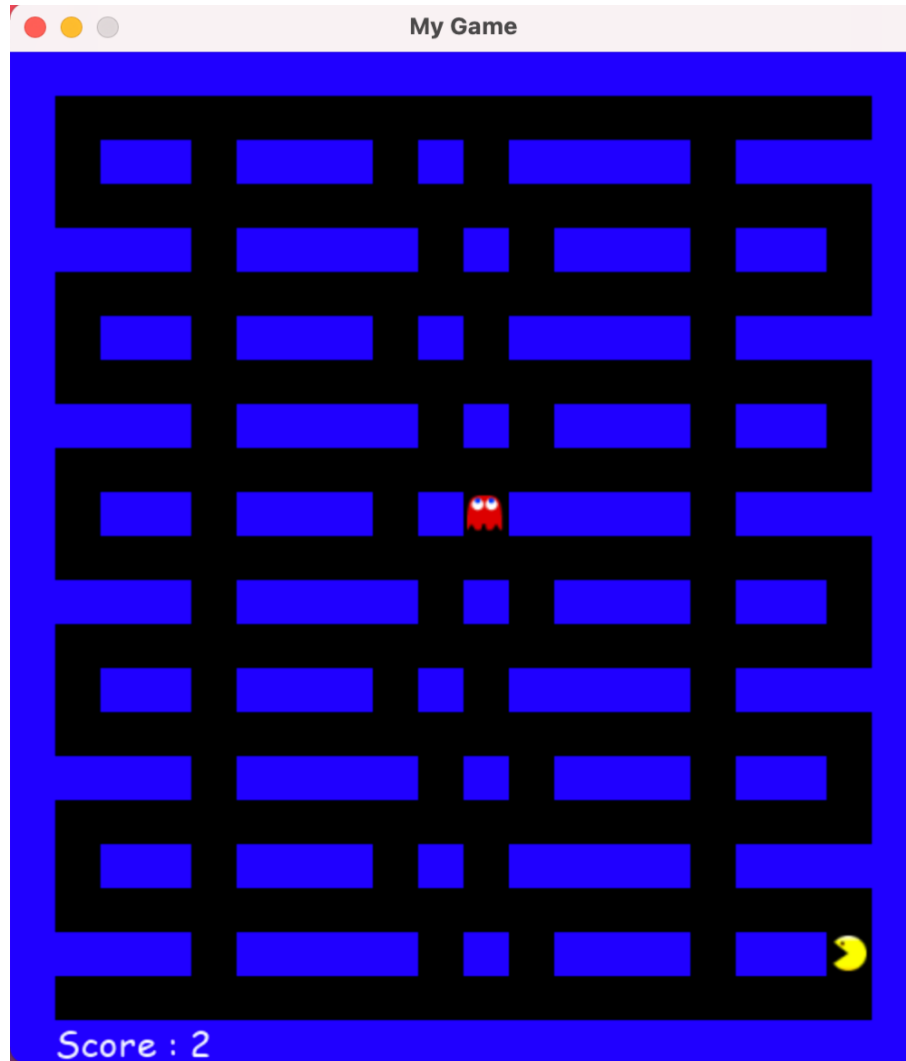
4 Game Maps

Each map has blue walls and black paths. Characters can move on black paths but not through blue walls.

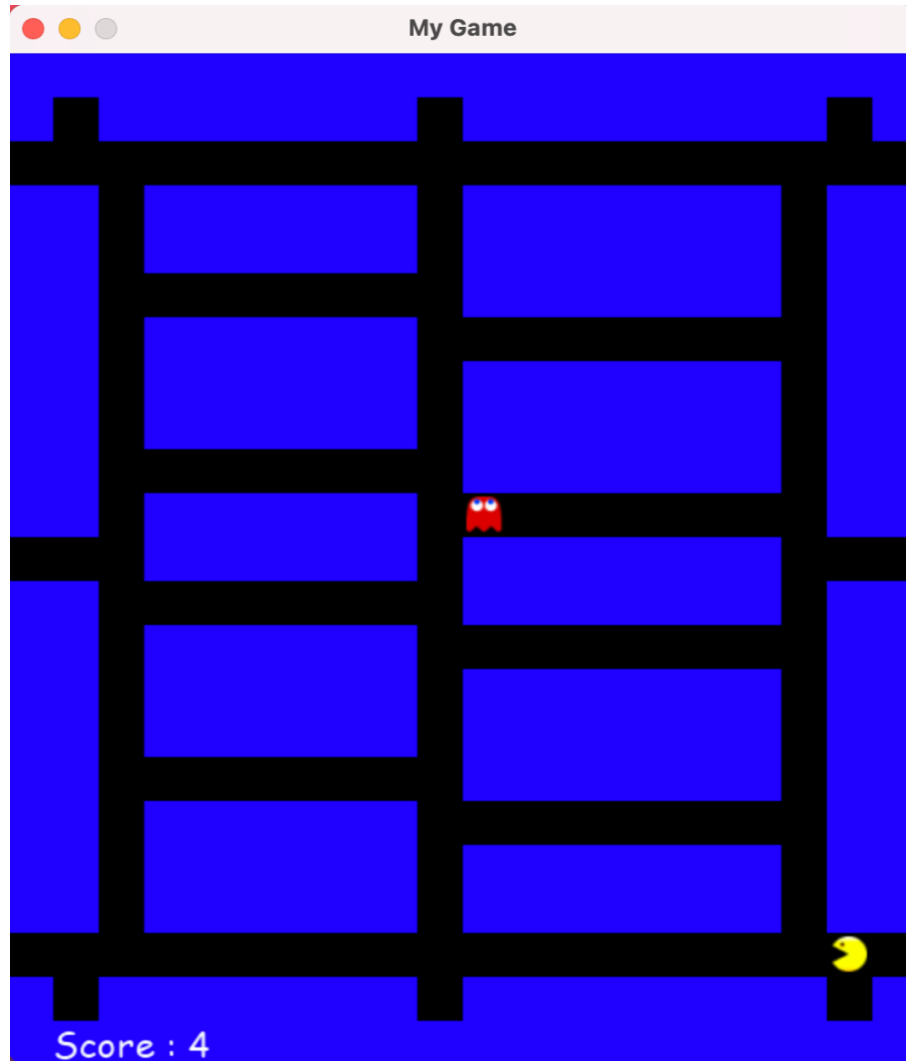
4.1 Map 1



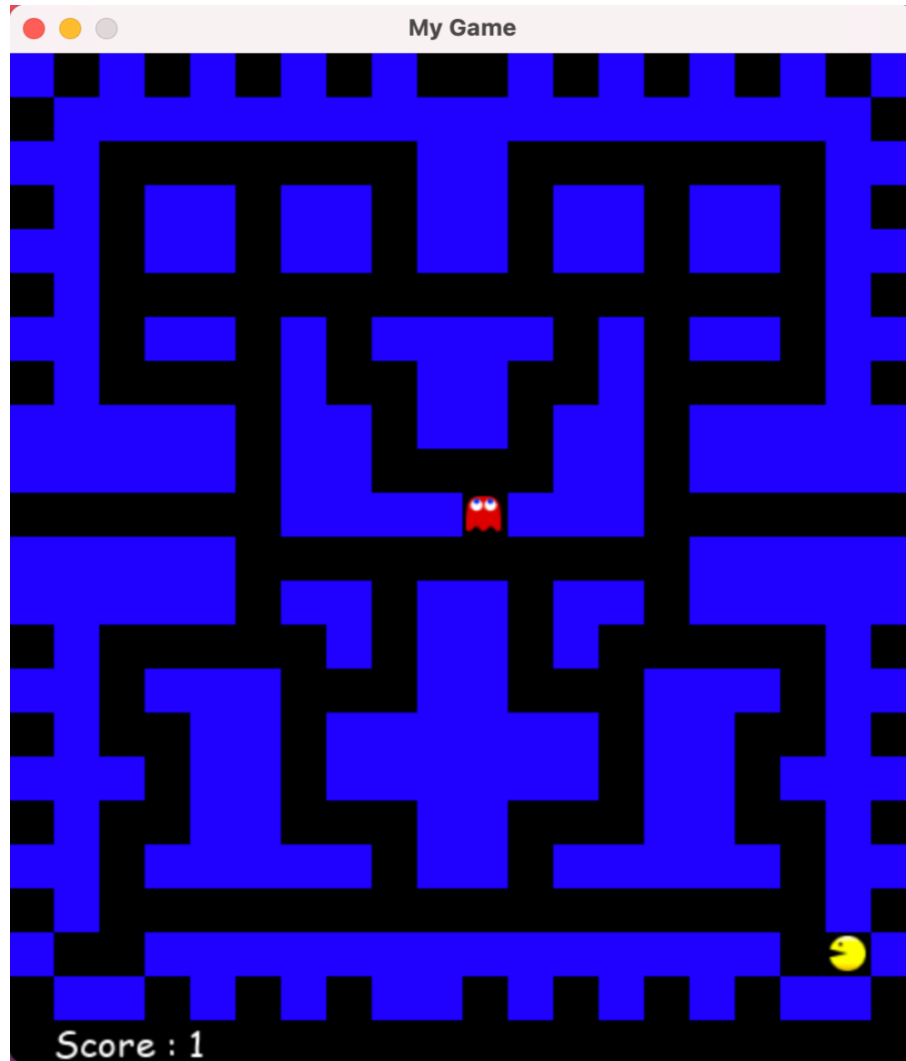
4.2 Map 2



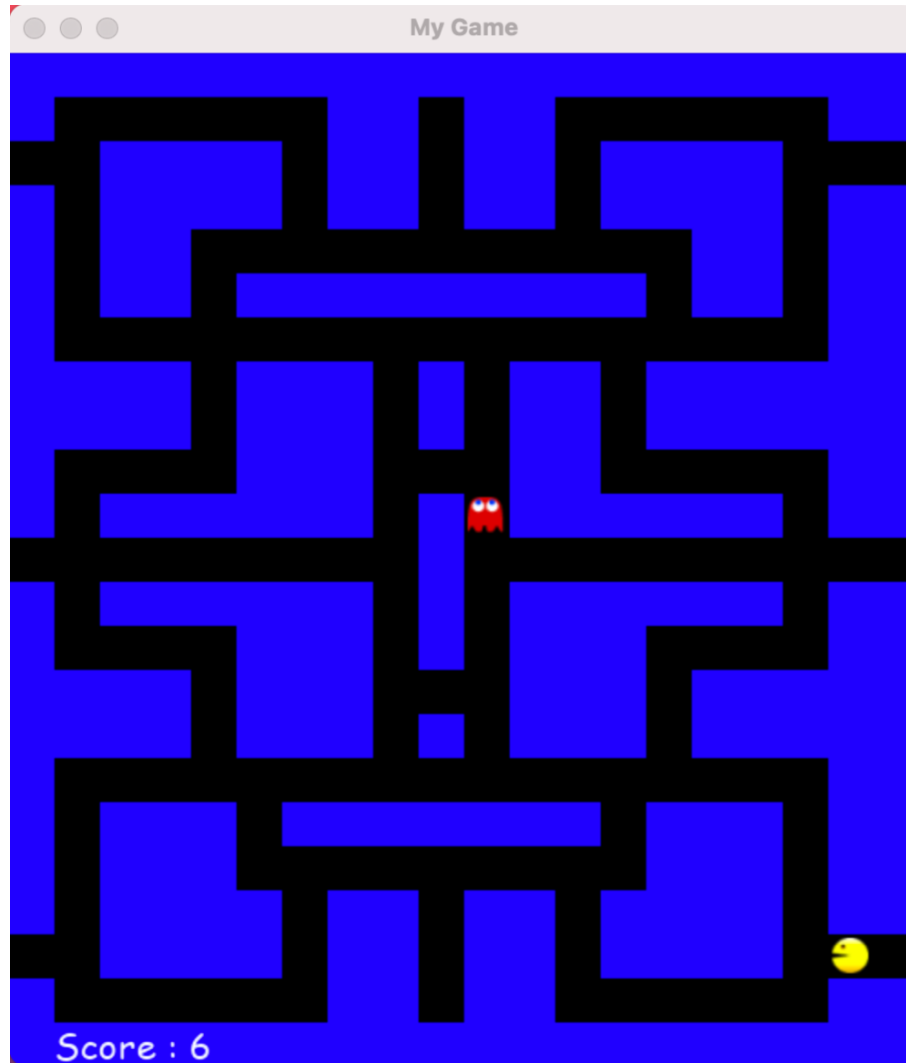
4.3 Map 3



4.4 Map 4



4.5 Map 5



5 Winning Logic

- Player with higher aggregate score after all the 4 rounds will win the match.
- If the aggregate scores after all the rounds is same, then the match is **Tied**.
- If the net difference between the aggregate scores after 3rd round is greater than the maximum points achievable in a round, then **Player A wins** as Player B cannot score more than the maximum points.

Required Condition : **Player A Score 1 + Player A Score 2 - Player B Score 1 > Max Points In Round**

- If the net difference between the aggregate scores after 3rd round is less than 0, then **Player B wins** as Player B scored more points in 2nd round than aggregate score of Player A.

Required Condition : **Player A Score 1 + Player A Score 2 - Player B Score 1 < 0**

6 Resources

- Let's Make Games
- Lazy Foo