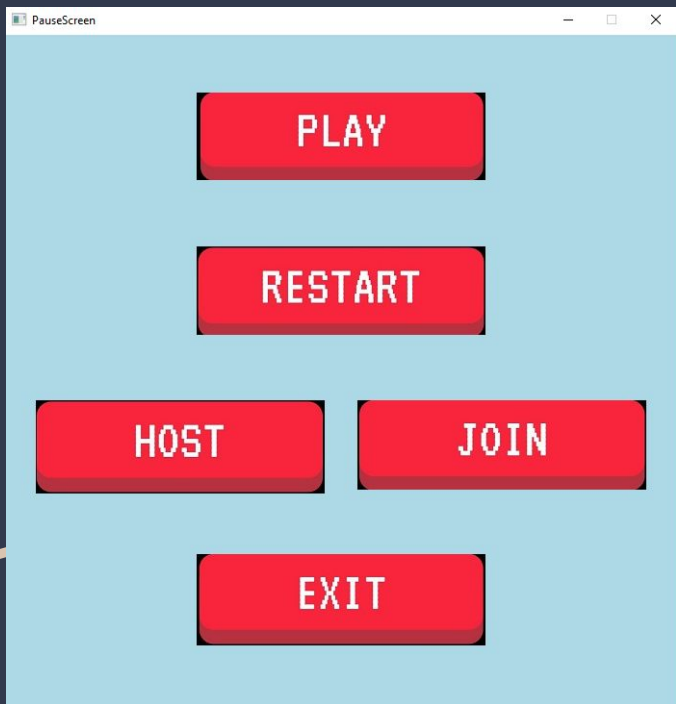# SDL Maze Game

Made By Kaustav Chattoraj and Arka Mandal

# Starting Screen and Others

When the game starts, the player is greeted with the following screen. All buttons are self explanatory but we will go over them one by one.

Play Button starts the game. If there is no connection made, then game starts with 2 players in same game with different controls for each. Restart button refreshes the game, closing all connections and loading a new map. Host button makes the game act as a Server and allows another game using the Join button to join this game with the unique room id. Exit stops the game and closes all windows.

Also, the game will keep printing out different statistics throughout the game for the Player to see what's going on. Whose turn it is, if connection is happening or failing, everything is displayed on terminal.

Game Screen
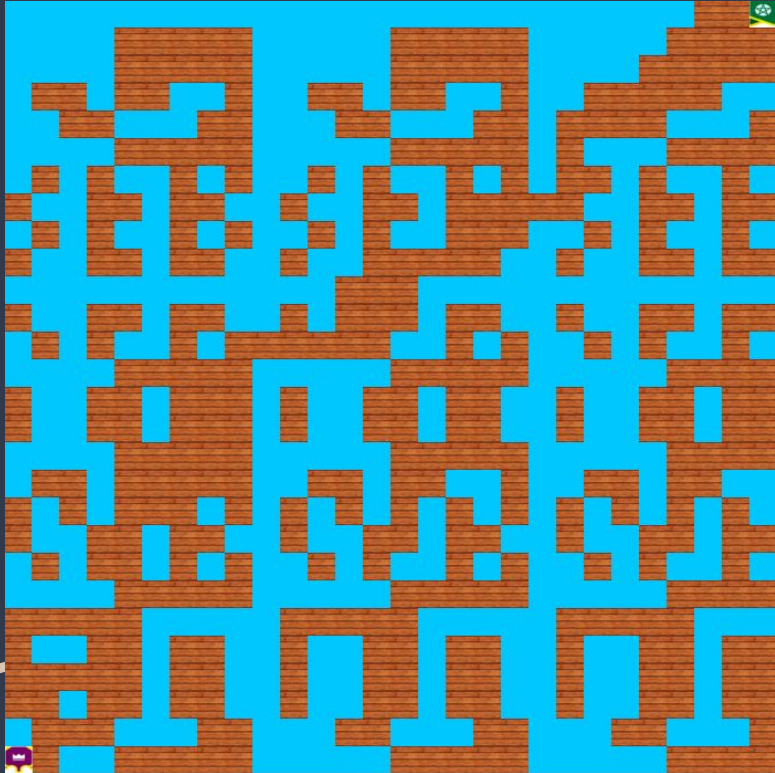
The game starts as shown. Both players at opposite corners. The bottom left purple flag refers to player 1 and top right green flag is player 2. They have to move towards each other and the player who overlaps the opponent position wins. This is a turn based game very similar to chess. The maze is randomly generated and will change every game.

Back-Story
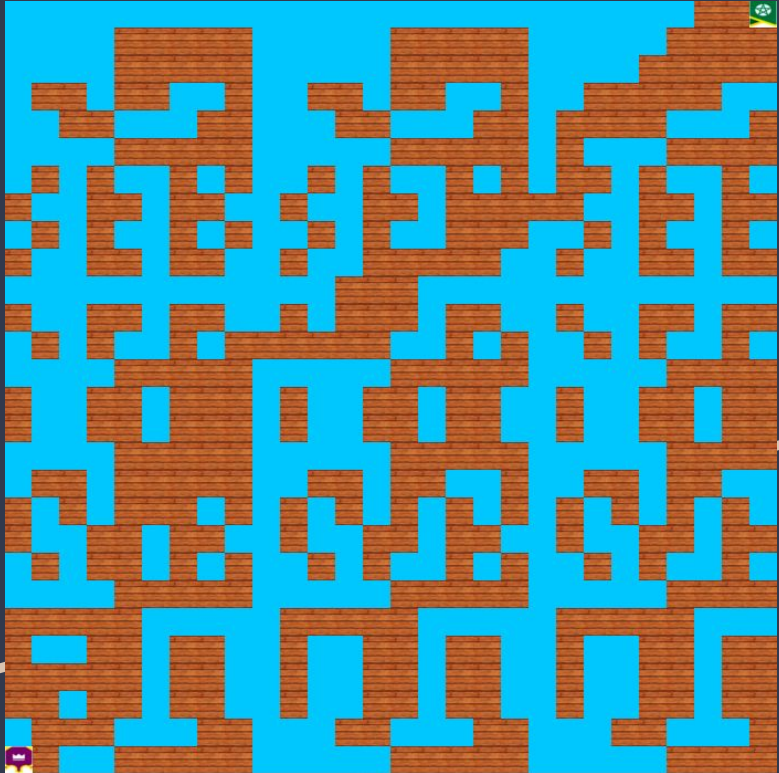
A war has been going on between the Purple Kingdom and the Green Kingdom. Two brave soldiers from these kingdoms are trying to infiltrate their enemy kingdom stealthily using an old broken bridge not used by anyone. They see each other and try to move to their opponent's position in order to get rid of them. The problem is that the bridge they are using is old and weak. When they move from one wooden tile to another, the tile breaks and falls down.

No Turning Back and Game Controls
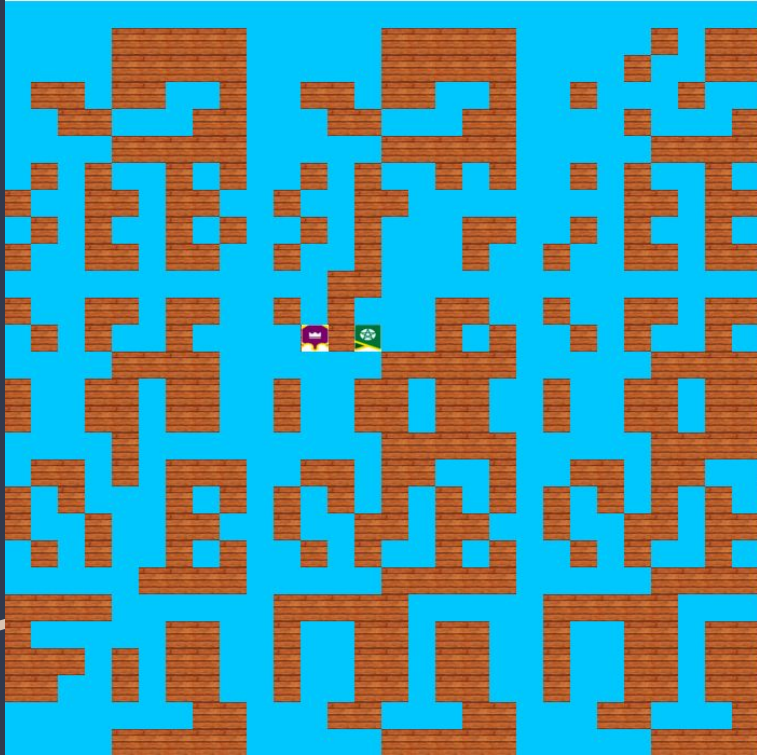
As players move from one tile to another, the tile disappears and the player cannot move back. This is done so that players don't move around in circles avoiding overlap by opponent. Players need to keep moving onto new tiles at each step.

Players are controlled by just 4 buttons. UP, DOWN, LEFT and RIGHT arrow keys moves the player 1. W,A,S,D moves player 2 in up, left, down, right respectively.

Checkmate, Winning and Scoring


```
P2 TURN
P2 TURN
P2 TURN
P2 TURN
P2 TURN
P2 TURN
P2 TURN
P2 TURN
P2 TURN
Player 2 wins with Score: 983
```

Eventually, the game will come to a point like this. Whoever the next turn belongs to, they may come over to the opponent's position and win the game.

The winner will be declared along with their score in the terminal as shown.

The scores are independent of who wins. It is only a measure of how well you played. Score reduces by 1 for every move you make. So, it is better to make lesser moves.

Pause Feature
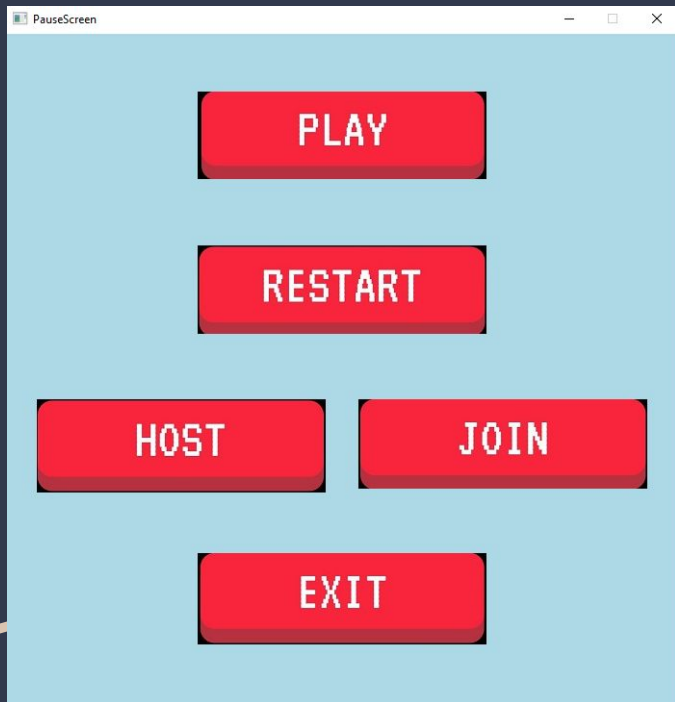
The game may be paused. While paused, any keyboard inputs will be ignored. However, the music will not stop. The background music will keep playing. Game Mode may be changed while paused or the game may be restarted as single player with a new map.

Hosting a Game

```
Game Starting
002F66A0Unique Room Key: 1620574762
Connecting. Unique Room ID: 1620574762
Connecting. Unique Room ID: 1620574762
Connecting. Unique Room ID: 1620574762
Connecting. Unique Room ID: 1620574762
Connecting. Unique Room ID: 1620574762
Connection Failed
```

```
P1 TURN
P1 TURN
P1 TURN
P1 TURN
P1 TURN
P1 TURN
P1 TURN
P1 TURN
P1 TURN
```

Clicking the Host button starts the games a host. It gives a unique room key. The client must use this room key to join this game. For now, the host waits for 10 seconds before closing its connection. "Connection Successful" is printed if done else after 10 seconds it shows "Connection Failed". After connection is successful, the game starts. The host controls Player 1. The turn indicator also starts informing the player that the game is waiting for an input from the host.

Joining a Game

```
Connecting
Connecting
Connecting
Connecting
Connecting
Connecting
Connecting
Connection Failed
```

```
Enter Unique Room Key:
1620574762_
```

When Join button is pressed, it asks for unique room key as given by the server. Once the key is given, it tries to connect to the server. If connection is successful, it prints "Connection Successful" on both client and server side. Else it shows "Connection Failed" after 10 seconds of trial. After connection is successful, the game starts. The client controls the Player 2.

Maps/Mazes/Levels
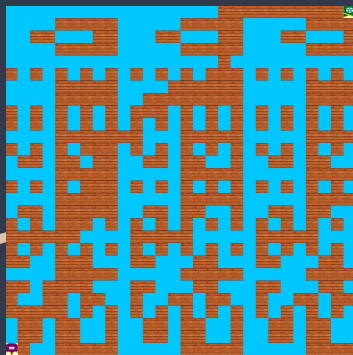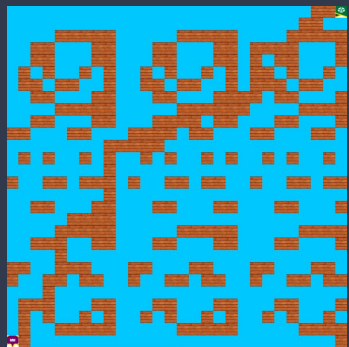
There are no levels or stages as this game was made from start considering a multiplayer perspective. The maps/mazes are randomly generated at runtime.

For different games, the map has to be same. This is done using the unique room key. The unique room key ensures that same map is generated in both games.

The restart button also changes the map.

The wooden tiles are where the player can be. The blue tiles are traps in a maze. Trying to go into a blue tile will automatically result in the opponent's victory.