Storyboard

Game Start State	Player Turn State	Win State Detection
## UI Mockup	## Player Turn State	## Win State Detection
		```plaintext
```plaintext	```plaintext	Selected grid size: (8, 6)
How many rows? (minimum 8, maximum 18)	Selected grid size: (8, 6)	Player 2 Wins!
> 8	Player 1 Turn	[][][][][][]
How many columns? (minimum 6, maximum 14)	[][][][][][]	[][][][][][]
> 6	[][][][][][]	[][][][][][]
Player 1 name (minimum 3 chars)	[][][][][][]	[][][][][][]
> Dave	[][][][][][]	[0][][][][]
Player 2 name (minimum 3 chars)	[][][][][][]	[] [] [0] [X] [0] [X]
> Lily	[][][][][][]	[] [] [X] [O] [X] [X]
Selected grid size: (8, 6)	[][][][][][][]	[] [] [0] [X] [0] [X]
[][][][][][]	[X][][][][][][]	***
[][][][][][]	***	
[][][][][][]		
[][][][][][]	```plaintext	
[][][][][][]	Selected grid size: (8, 6)	
[][][][][][]	Player 2 Turn	
[][][][][][]	[][][][][][][]	
[][][][][][]	[][][][][][][]	
***	[][][][][][][]	
	[][][][][][][]	
	[][][][][][][]	
	[][][][][][]	
	[][][][][][]	
	[X][0][][][][]	

Description:

- 1.1 Once the game launches, an empty board should be shown.
- 1.2. Players 1 and 2 should get to choose their game board dimensions.
- 1.3. Initiate functions like move count.

Description:

- **2.1.** Each player would get prompted to pick a column to place their piece.
- 2.2. Validate the input against what is currently on the board and update the board accordingly.
- 2.3. Switch turns between players after each valid move.

Description:

- 3.1. After each move, check for a win condition:
- **3.1.1.** Horizontal: Four of the same pieces in a row horizontally.
- **3.1.2.** Vertical: Four of the same pieces in a row vertically.
- 3.1.3. Diagonal: Four of the same pieces in a row diagonally, in both directions.
- 3.2. If the win condition is met, print the winner, and offer an option to restart or exit.

Draw State Detection

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## Draw State Detection
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```plaintext

Selected grid size: (8, 6)

Draw!

[0] [X] [0] [X] [0] [X]

[X] [0] [X] [0] [X] [0]

[X] [0] [X] [0] [X] [0]

[0] [X] [X] [0] [X]

[X] [0] [0] [X] [X] [0]

[0] [X] [0] [X] [0] [X]

. . . . . . . . . . . . . . .

[X] [X] [X] [0] [X] [0]

[0] [0] [X] [0] [X]

Restart(r)

\* \* \*

## Game Over State

#### ## Game Over State

```plaintext

Selected grid size: (8, 6)

Draw!

[0] [X] [0] [X] [0] [X]

[X] [0] [X] [0] [X] [0]

[X] [0] [X] [0] [X] [0]

[0] [X] [X] [0] [0] [X]

[X] [0] [0] [X] [X] [0]

[0] [X] [0] [X] [0] [X]

[X] [X] [X] [O] [X] [O]

[0] [0] [X] [0] [X]

Restart(r)

* * * *

Restart Mechanism

Restart Mechanism

```plaintext

How many rows? (minimum 8, maximum 18)

> 8

How many columns? (minimum 6, maximum 14)

> 6

Player 1 name (minimum 3 chars)

> Dave

Player 2 name (minimum 3 chars)

> Lilv

Selected grid size: (8, 6)

[][][][][]

. . . . . . . . . . . . . . .

[][][][][]

\* \* \* \*

# **Description:**

4.1. If all the columns are filled and the win condition is met, declare the game as a draw.

#### **Description:**

5.1. Once a win condition or draw condition is met, the game should enter this state.

## **Description:**

6.1. Functionality to reset the game board and all variables and loops to their initial state,

| 4.2<br>play | e. Provide the restart or exit option to the yers. | 5.2. Display the results (either a win message or a draw message) and allow players to pick to restart. If players pick Restart, then reset all game variables. | restarting the game. |  |
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