Connect Four

Context

Connect Four is played on a vertical grid of 6 rows and 7 columns. Rows are numbered from bottom(1) to top(6), and columns from left(A) to right(G). The goal is to align 4 tokens of their color, in a horizontally, vertically or diagonally way.

How to play Connect Four

Rules

- Each player in turn plays a token of his color in the column of his choice.
- Physically, the grid is arranged vertically, so that tokens are inserted into a slot from above and it falls to the lowest FREE row.
- Thus, you can choose the column, but not the row, the token that has just been inserted falls to the lowest row still available.
- It can not be played in a full column containing already 6 tokens.
- The first player who manages to align 4 tokens of their color (horizontal, vertical, diagonal) wins the game.
- The main purpose from each player is to build the alignment of 4 tokens by preventing their opponent doing first.
- If the grid is completely filled without any player succeding in aligning 4 tokens of their color, the game is declared void.
- The game is basically intended for only 2 players, with red and yellow tokens.

The Assignment

Objectives

- How to create React Components with JSX.
- How to use React Props to send data amongst components.
- Combine Props and State to create a “reactive” workflow.
- Read official documentation about Components, Props, States and Events.

About the Design

Setup Instructions

Deliverables

- A GitHub repository

Requeriments

Your Project Manager (PM) has decided that is important to use React with its all features like Props, States and Events to solve the MVP.

IMPORTANT. Your Dev Team has decided to implement 8 sprints for this project:

Sprint 1 | Bootstrap the App

Create the project structure.

Sprint 2 | Create Individual Components

Build each component from Game to have control. We have Grid, Board, Cell, Circle. **You are free to follow whatever convention you want, this is just a guideline.**

Sprint 3 | Implement "circles" logic

It’s time to implement circles, so you can click on any column and the ball will fall to the bottom. **See rules.**

Sprint 4 | Control the Turn from players

Another important thing is to control turns. If not, any players will do whatever thing their want. Control each turn with a different ball color. Red or yellow.

Sprint 5 | Check and Validate Tokens

Now that you know how to place the circles in the Grid, you need to validate Tokens. If a cell is not available the circle should append to the top of that circle. And so on. The key is: **if I have a cell that is empty I can put a circle in that space**.

Sprint 6 | Add Victory detection

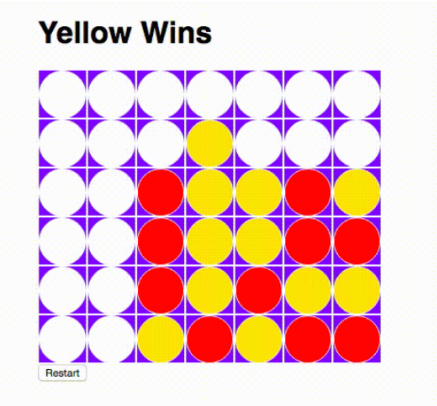
When you are playing the most important thing is to have fun, but... also to claim a victory. Implement needed logic to validate if a user is winner, looser or none of them.

Sprint 7 | Implement Reset functionality

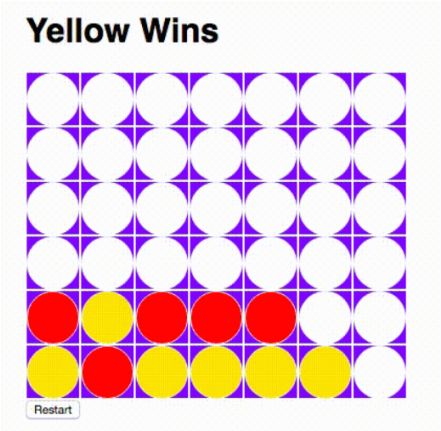
What about playing again? Clean the board so players can start another game.

Results

Tokens aligned vertically



Tokens aligned horizontally



Tokens aligned diagonally