BJSS Tic Tac Toe React Challenge

Introduction –

Tic Tac Toe (or as you more likely know it noughts and crosses) is a two player game across a 3 by 3 grid where you attempt to create 3 of your marker in a row before your opponent.

https://playtictactoe.org/

The aim of todays activity is to replicate the game of Tic Tac Toe using React. To start with it will just be a 2 player game, but the extension tasks focus on creating a AI to play against you as well. To get started some template code has been provided to you at the GitHub link below.

https://github.com/bjss/day-in-the-life-react

What is React –

React is a free and open-source front-end JavaScript library for building user interfaces based on UI components. It is widely used within industry and was created by Facebook/Meta. It makes use of a language called JSX that allows you to write HTML alongside JS.

What you have to start with –

The starter repo has all the files you need to create this application, however many of them are blank. The first place to look is inside the App.js file which contains the start of the project. Inside the return statement you can see some JSX which declares a component called Board. This is the first file you will be writing. Take your time to study App.js and what is there. Research into React Hooks like useState that are being used and React Props.

Task One –

Create an empty board and display that to the site. Do not focus too much on making things look pretty for now, that can come later.

Task Two –

Create a way to update a square on the board. There is a function declaration already present called Draw that you should complete to handle this for you. This should also handle setting the turn for each player.

Task Three –

Complete the code to check for a winner. Parts of this function have been created already for you.

Task Four –

Create a way to reset the board once a winner has been declared.

Extension Task –

These tasks can be completed in any order.

Style the application making use of CSS or any other techniques you want.

Create a button that can reset the board during a game.

Create a scoreboard that keeps track of what player is winning.

Create a simple AI that picks a square at random to play against you.

Investigate and create a more complex AI that makes choices to try win against you.

Create a cypress test suite to test if the application is working as intended.