REPORT ON

FRONT-END ENGINEERING PROJECT-

Tic-Tac-Toe

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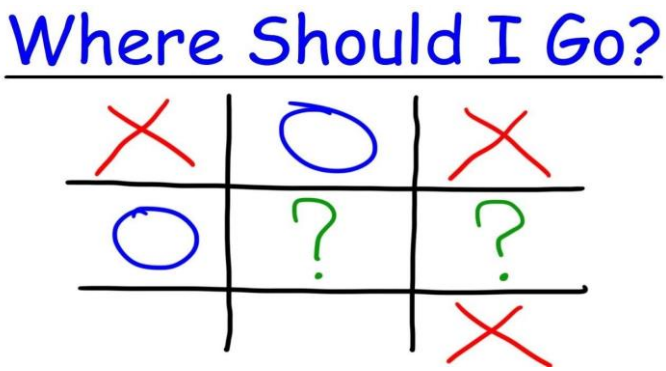
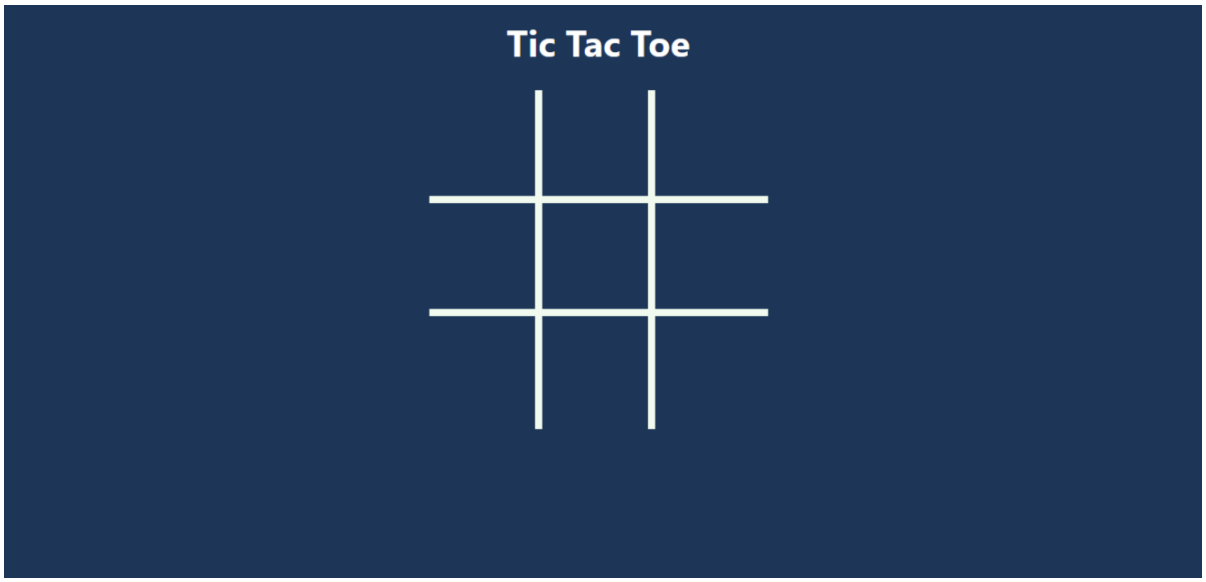
Introduction

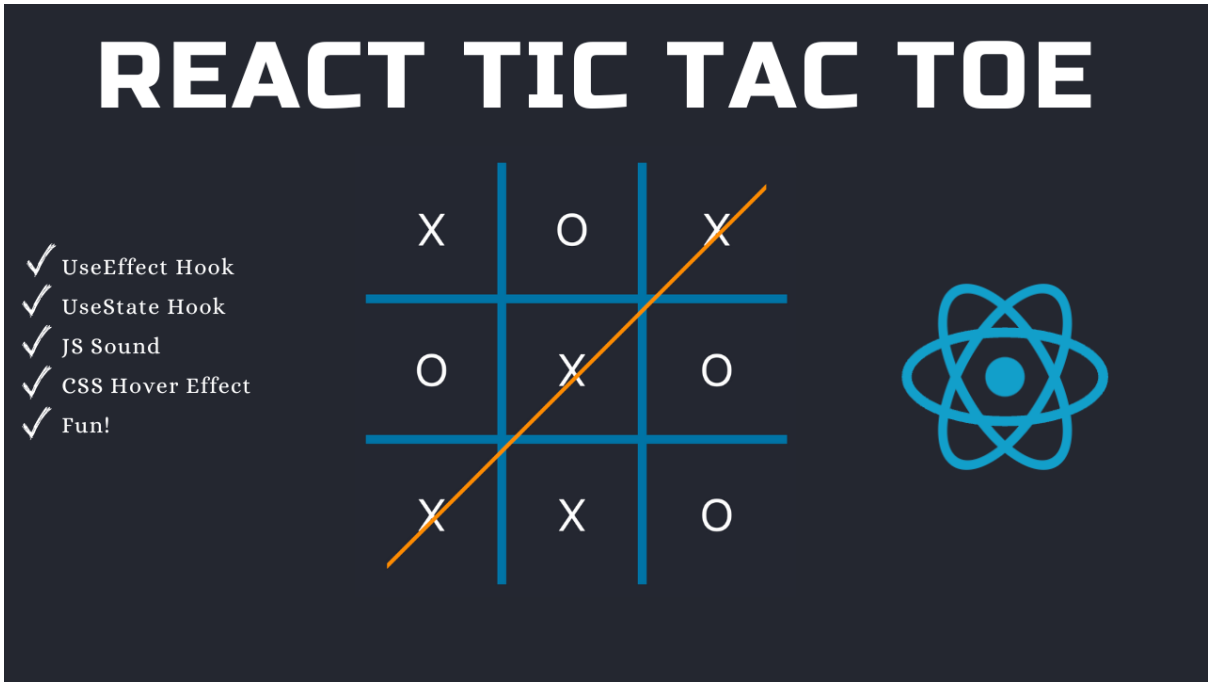
This is a project report on “ONLINE TIC TAC TOE GAME”

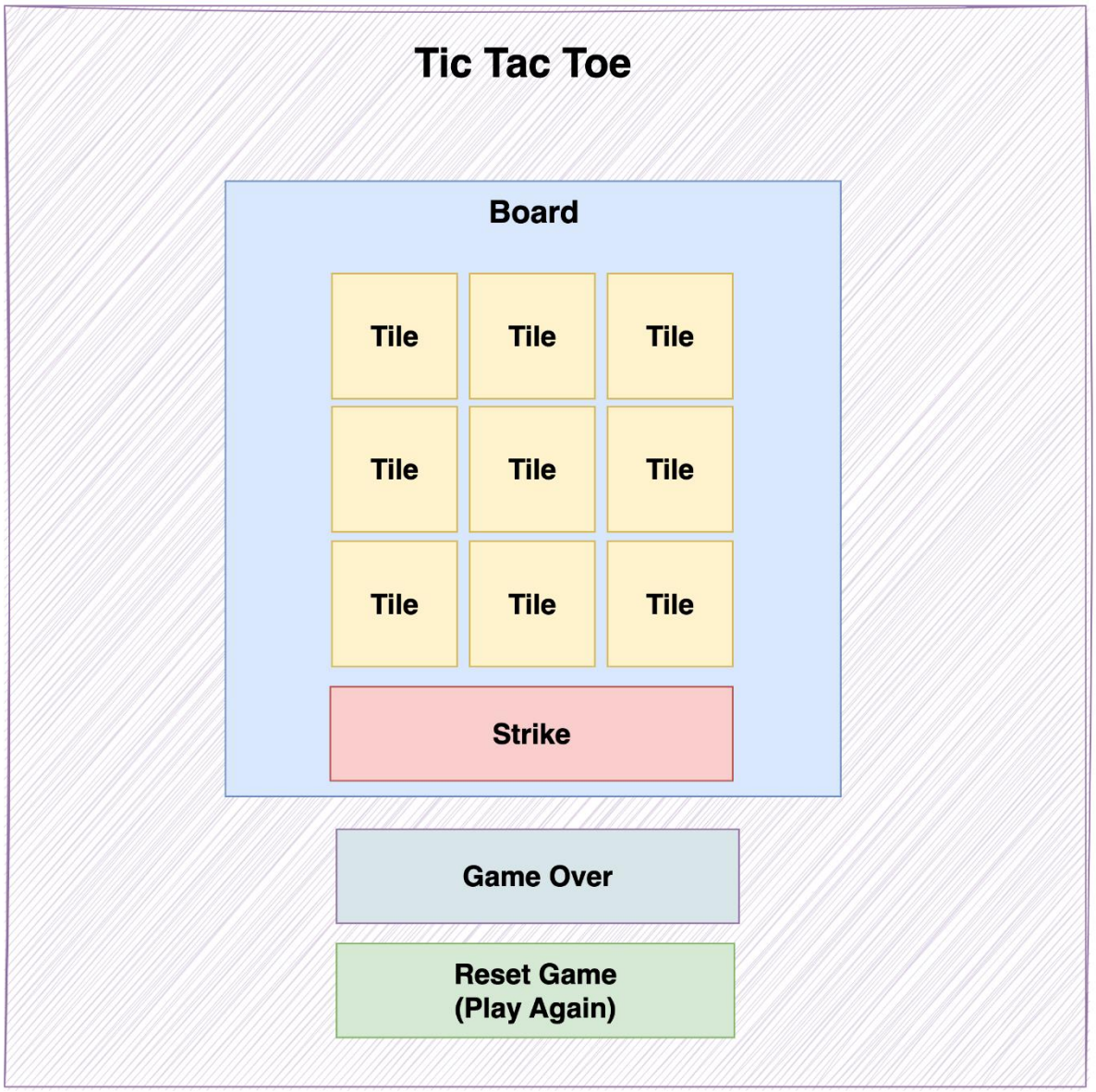


This is a web-based application which helps people to play “TIC-TACTOE” online. The game is very popular and is fairly simple by itself. In this game, there is a board with n X n squares. In our game ,it is 3X3 squares. The goal of Tic-Tac-Toe is to be one of the players to get three same symbols in a row-horizontally, vertically or diagonally- on a 3X3 grid.

OVERVIEW



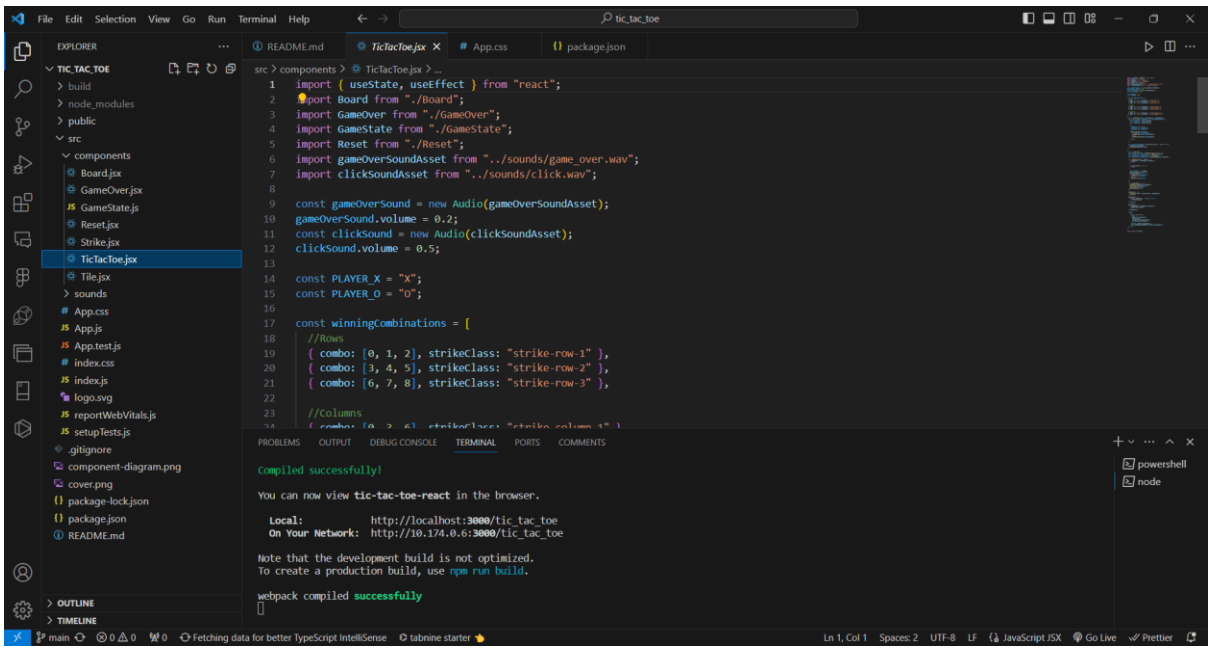

REACT TIC TAC TOE
UseEffect Hook
UseState Hook
JS Sound
CSS Hover Effect
Fun!
X O X
O X O
X X O



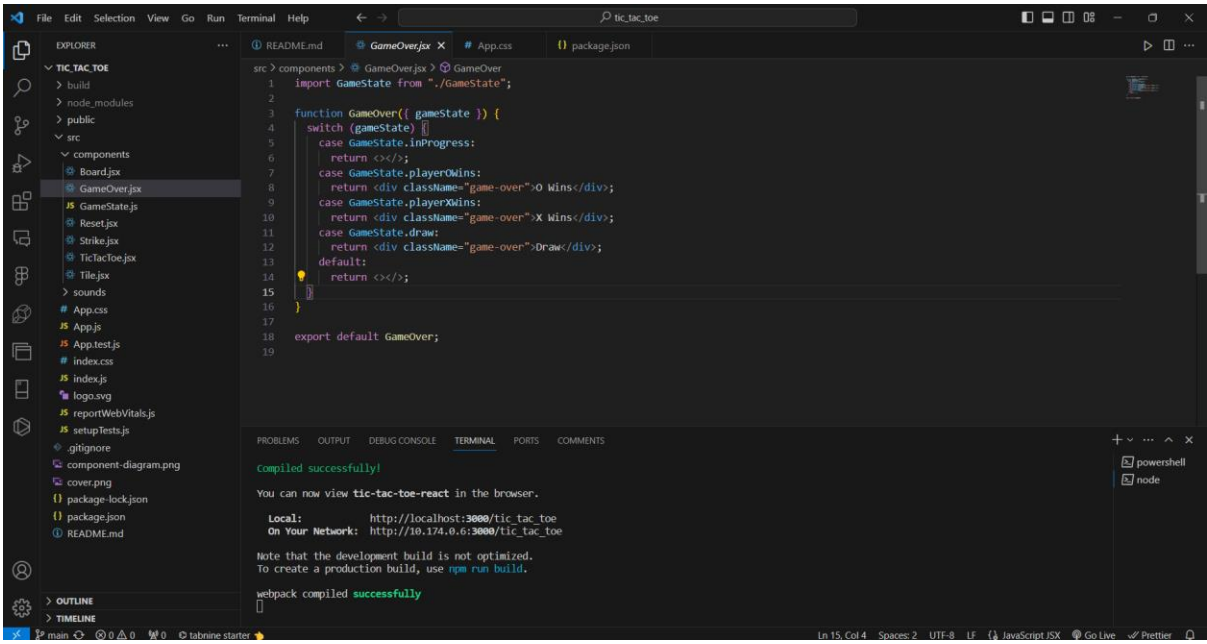
Project Components

- **React Components** - > The project consists of a single React component named Tic-Tac-Toe.jsx. This component handles the game logic, rendering the game board, and managing game state.
- The Two hooks used are use-Effect and use-State.

- **CSS- Styling ->**The project uses CSS for styling. The App.css file is used to define the visual layout and appearance of the game.



- **Game Logic ->**The game logic is implemented within the `TicTacToe` component. Key components of the game logic include:
  - Maintaining the game board state using the `data` state variable.
  - Tracking the number of moves using the `count` state variable.
  - Checking for a win or a draw using the `checkWin` function.
  - Handling the end of the game and displaying the result.

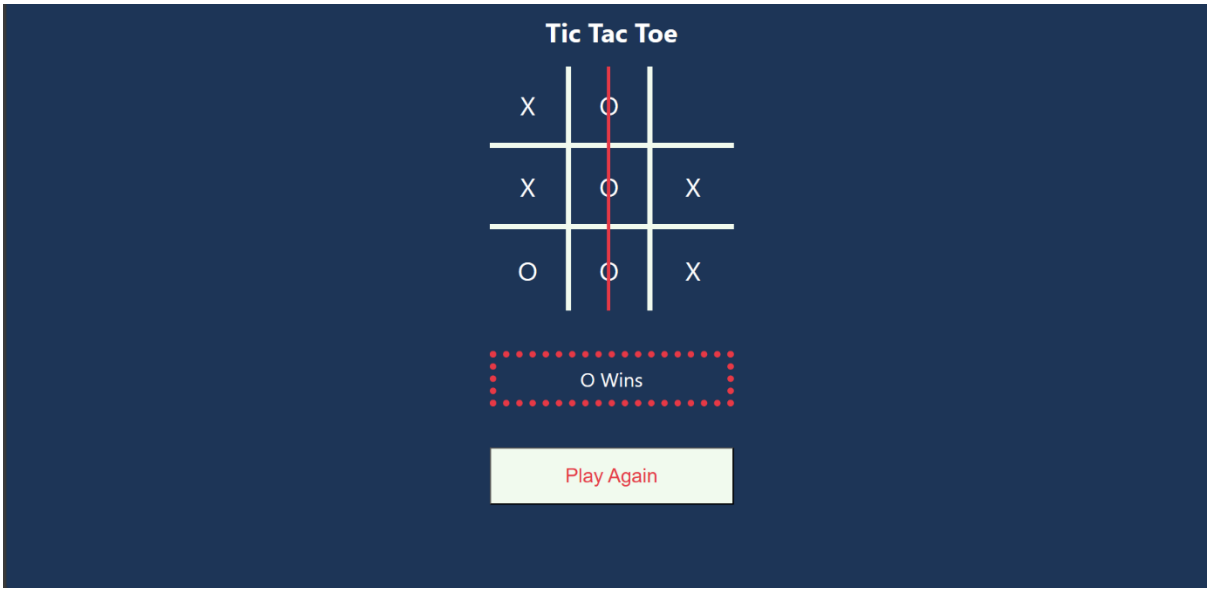


➢ **Gameplay**

- Players take turns to click on empty cells on the game board to place their 'X' or 'O'.
- The game keeps track of the number of moves and checks for a win or a draw after each move.
- When a player wins, the game displays a congratulatory message and locks further moves.
- If the game ends in a draw, a message is displayed, and further moves are locked.

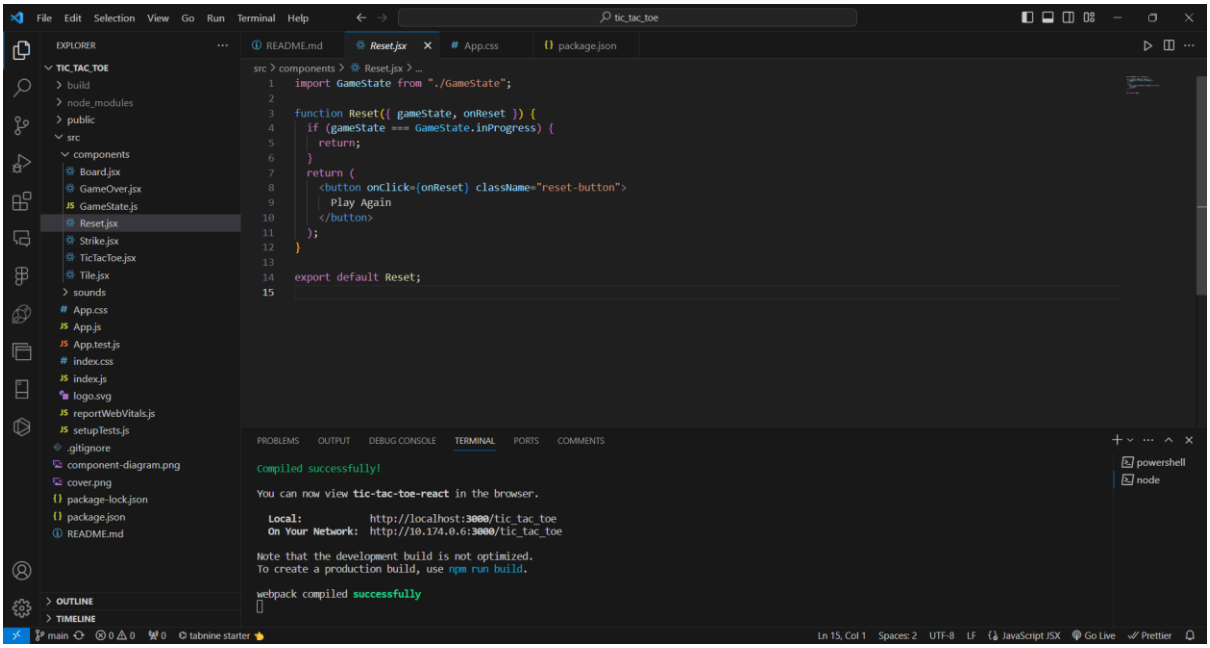
➢ **User Interface**

- The game interface is user-friendly and responsive.
- The title of the game is dynamically updated to reflect the game status, such as who won or if it's a draw.
- X and O icons are displayed in the cells to represent the moves of the players.



- **Reset Functionality**

  The 'Reset' button allows users to restart the game. When pressed, it resets the game state and clears the inner HTML of the cells to start a new game.



- **Refactoring and Best Practices**

- The code structure is well-organized, making use of React state management and use-Effect for checking the game state.
- Variables and functions are named descriptively, enhancing code readability.

- The use of ref call-backs to access DOM elements for updating inner HTML is in line with React best practices.

Future Improvements ->

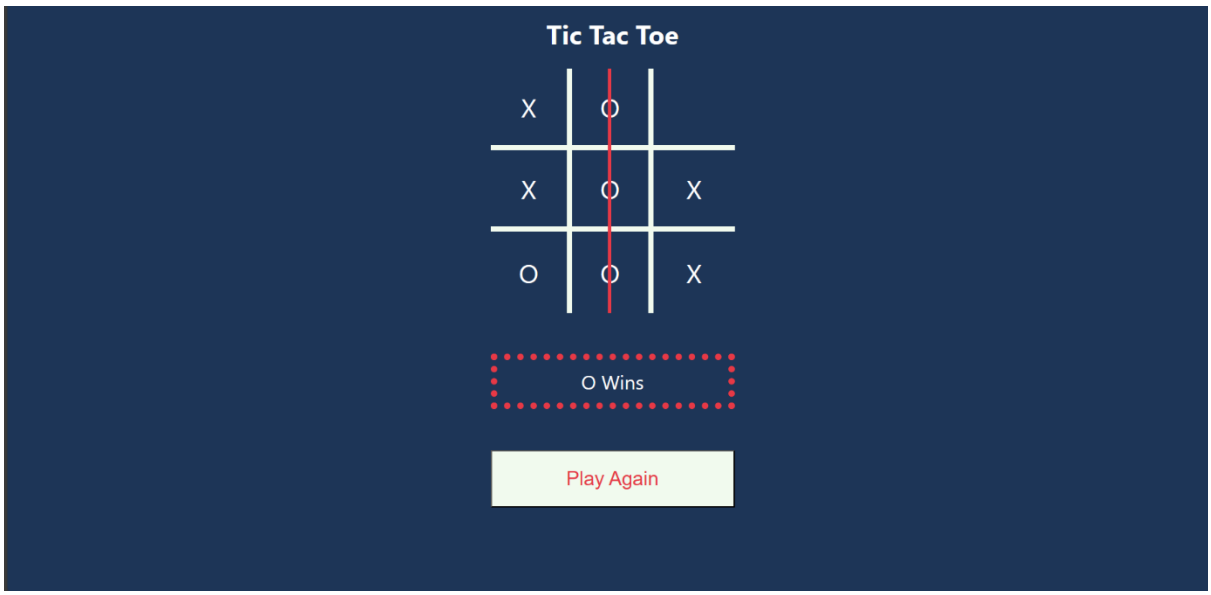
- Implementing a scoring system to keep track of wins for each player.
- Enhancing the user interface with more interactive features.
- Implementing an option to play against AI opponent.

Conclusion-:

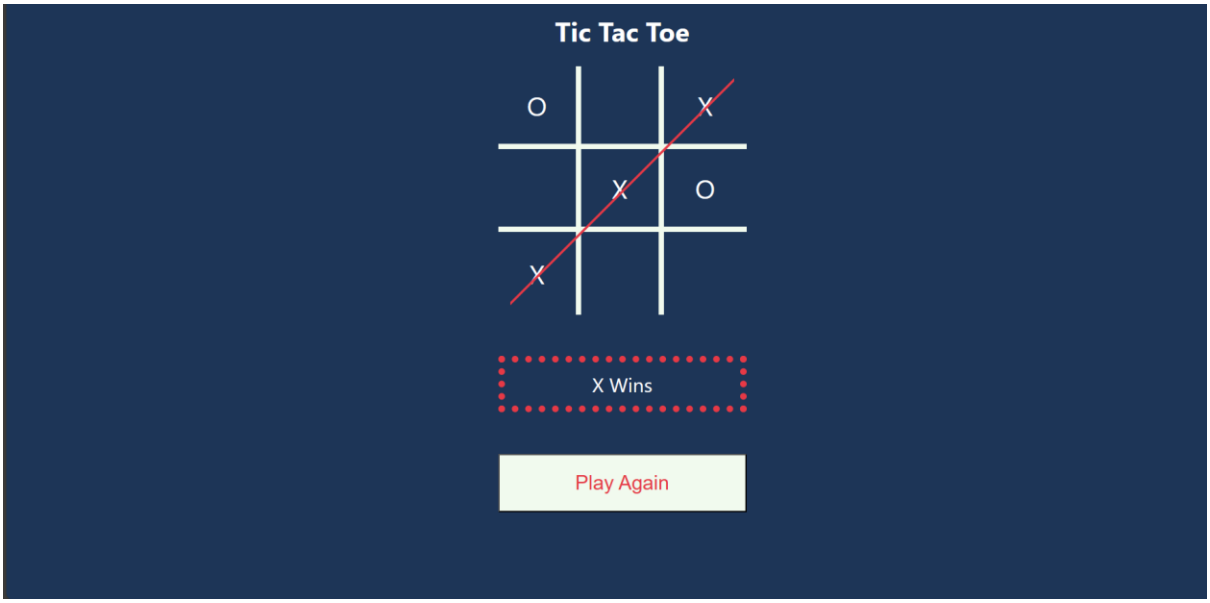
The Tic-Tac-Toe game in React is well-implemented project that provides an enjoyable gaming experience. It demonstrates the use of React for building interactive web applications and serves as a foundation for potential enhancements and features.

Game Out-Comes-:

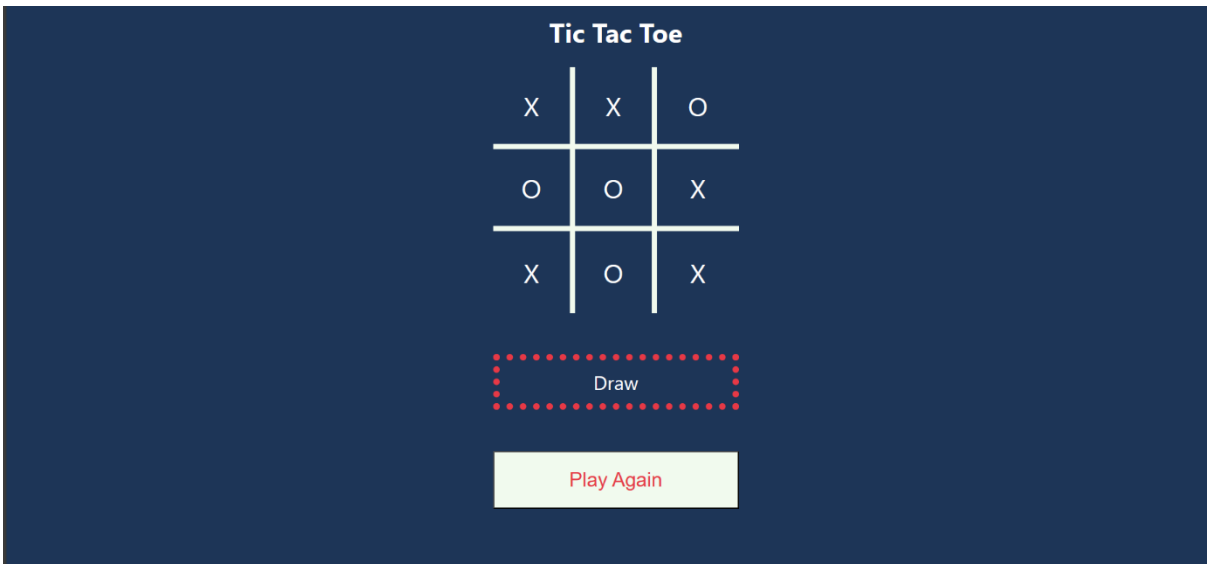
1) O-Wins -:



2) X-Wins -:



3) Draw -:



Project Repository -:

https://github.com/Tushar20-20Mahajan/tic_tac_toe.git

Live-App -:

https://tushar20-20mahajan.github.io/tic_tac_toe/