

Tic-tac-toe Assessment

Time Limit: 2-3 hours

Task Description

Create a Tic-tac-toe game using React and TypeScript with undo/redo functionality. The game should allow two players to play alternately and keep track of game history.

Core Requirements

1. Game Board Implementation

- Create a 3x3 grid game board
- Players take turns placing X and O
- Clearly display whose turn it is (X or O)
- Show game status (in progress, winner, or draw)
- Highlight the winning line when a player wins

2. Game History Features

- Implement Undo button to revert to the previous move
- Implement Redo button to replay undone moves
- Disable Redo button when a new move is made after an undo
- Maintain move history throughout the game

3. Technical Requirements

- Use React with TypeScript
- Use Redux Toolkit for state management
- Implement proper TypeScript types/interfaces
- Follow React best practices for component structure
- Style your components (you may use Tailwind CSS)

Required Features

1. Game Rules

- X always goes first
- Players alternate turns
- A winner is declared when 3 marks are in a row (horizontal, vertical, or diagonal)
- Game ends in a draw when all cells are filled with no winner

2. User Interface

- Display game board with clear X and O markers
- Show current player's turn
- Display game status (in progress/winner/draw)

- Include Undo/Redo buttons
- Add New Game button to reset the board

3. **State Management**

- Track game board state
- Maintain move history
- Handle undo/redo state
- Manage game status

Bonus Features (Optional)

- Add move animations
- Add game replay functionality
- Make board size configurable