

## Analyze:

### 1. Game Outlines:

- ✓ A two-player turn-based board game.
- ✓ Played on a 3x3 grid.
- ✓ Players take turns marking empty cells / make moves.

### 2. Game Components:

- ✓ Board: 3x3 grid.
- ✓ Players: Two players.
- ✓ Markers: 'X' for player 1 and 'O' for player 2.

### 3. Basic Rules of Game:

- ✓ The board starts with an empty grid.
- ✓ Player1 uses the mark 'X' and player2 will use the mark 'O'.
- ✓ By default, 'X' player goes first.
- ✓ Players take turns making moves.
- ✓ A player can only mark one single empty cell on the grid.
- ✓ If the cell is occupied already, players cannot make a move here.
- ✓ Column letters: A, B, C
- ✓ Row numbers: 1, 2, 3
- ✓ Use the **Column Letter + Row Number** to declare the next move.

### 4. Winning Conditions:

- ✓ A player wins by getting three of their marks in a row
- ✓ Winning rows can be:

**Vertical (3 cells in same column)**

**Horizontal (3 cells in same row)**

**Diagonal (3 cells diagonally)**

### 5. Draw Condition:

If all cells of the grid board are filled but still no player has won, it is a draw game because no more moves can be made.

### 6. Termination:

- ✓ Game terminates when:
  - A player won.
  - The game is a draw, no more available cell in the grid.

### 7. Console Windows:

- ✓ Display the board after each move has been made.
- ✓ 2 players turn for each time. Declare whose turn to make move clearly.
- ✓ Handle and check input, the move is valid or not.
- ✓ Make another move for invalid moves.

## Minimum Requirements:

- ✓ Initial 3x3 grid
- ✓ Two players
- ✓ Turn-based gameplay
- ✓ Input validation
- ✓ Win check
- ✓ Draw check
- ✓ Game state

## Design:

### Mermaid diagram:

