

## 1-Game over view:

The Tic Tac Toe game is a two-player game played on a 3x3 grid. Players take turns marking either 'X' or 'O' in empty cells of the grid. The objective of the game is to get three of their marks in a horizontal, vertical, or diagonal row.

## 2- Functional Requirements:

### 1. Game Initialization:

The game should provide an option to start a new game.

The game should allow players to enter their names or play anonymously.

The game should randomly assign the starting player.

### 2. Game Board:

The game should display a 3x3 grid as the game board.

The game board should be initially empty.

### 3. Player Moves:

The game should allow players to take turns making moves.

The game should validate the legality of each move.

The game should prevent players from making moves in already occupied cells.

### 4. Win Condition:

The game should check for a win condition after each move.

The game should declare the winner if a player achieves three marks in a row.

The game should declare a tie if the board is full and no player has won.

### 5. Game Termination:

The game should provide an option to end the current game.

The game should allow players to start a new game after completion.

### 3. Non-Functional Requirements

#### 1. User Interface:

The game should have a user-friendly and intuitive graphical user interface.

The user interface should clearly display the game board and player information.

The user interface should provide visual feedback for valid and invalid moves.

#### 2. Performance:

The game should respond to user actions promptly, without noticeable delays.

The game should handle simultaneous user input without conflicts.

#### 3. Portability:

The game should be compatible with common operating systems (e.g., Windows, macOS, Linux).

The game should be deployable on desktop computers and laptops.

#### 4. Error Handling:

The game should gracefully handle any unexpected errors or exceptions.

The game should display informative error messages when necessary.