# **Software requirements specification (SRS)**

* Introduction

Tic Tac Toe is a two-player (two persons or one player with computer) game played on a 3x3 grid. Players take turns marking a cell in the grid with their respective symbols (X or O). The player who succeeds in placing three of their symbols in a horizontal, vertical, or diagonal row wins the game. If all nine cells are filled without a winner, the game is considered a draw.

* Function requirements
* The game displays a 3x3 grid for the game board.
* The game allows playing with a friend or with computer
* The game allows the players to log in with unique username and password
* The game shall display which player's turn it is.
* The game shall provide a way to restart the game.
* The game shall display a message indicating the winner or if the game is a draw.
* Nonfunctional requirements
* The game shall ensure secure communication between the client and server (encrypt the user password and give each player a unique username)
* The game shall ensure that all game state data is stored correctly and consistently.
* The game has the history for each user
* Nothing happens or changes if you press the space outside the grid ‘s space
* Rules of the game
* The game is played on a 3x3 grid
* Player 1 uses the symbol X, and Player 2 uses the symbol O
* Players take turns placing their symbols in an empty cell
* A player wins by being the first to have three of their symbols in a horizontal, vertical, or diagonal row.
* If all nine cells are filled and no player has three in a row, the game is a draw
* The game shall not allow a cell to be marked more than once
* System behavior
* The players can play as a guests or log in with unique username and password
* The current player selects an empty cell
* The system marks the cell with the player's symbol
* The system checks for a winning and drawing condition
* The system displays the final game board and who won and lost or draw
* The data and history for each player is saved
* Performance
* The game registers player inputs within milliseconds
* The game updates the display within milliseconds of a player’s move
* The game log In, checking and displaying wining conditions in milliseconds