**Encrypted and concurrent socket Implementation usecase of gaming application**

Group -3

**Design Document**

**1.INTRODUCTION:**

Tic-Tac-Toe (or Noughts and crosses, Xs and Os) is a game for two players, X and O, who take turns marking the spaces in a 3×3 grid. The player who succeeds in placing three respective marks in a horizontal, vertical, or diagonal row wins the game. Players soon discover that best play from both parties leads to a draw (often referred to as cat or cat's game). Hence, Tic-tac-toe is most often played by youngers and children. The friendliness of Tic-tac-toe games makes them ideal as a pedagogical tool for teaching the concepts of good sportsmanship and the branch of artificial intelligence that deals with the searching of game trees.

**1.2 PURPOSE:**

The purpose of this project is to get a solid grasp on the fundamentals of the Socket API. Writing such an application in Cpp gives a basic understanding on how the client - server architecture works and overall, on how to use the Socket API to establish communication between client and server applications with the goal of information exchange between the two.

**1.3 OPERATING ENVIRONMENT:**

Operating environment for implementing socket usecase of gaming application are:

* Client/server system
* Operating system: Linux
* Platform:Intel X

**1.4 FEATURES :**

The implementation of the game TicTac-Toe has many features as compared to the traditional way of playing it with paper and pencil. The various features are:

• The game has been made user friendly with proper use of software

• The user can play as many games without any interruption

• The player can win the game, draw the game or will loose the game

• It’s a good brain exercise for all age group people

**2.SOFTWARE REQUIREMENTS:**

S1: Login credentials:

Correct username and password is required to login to have authentication.

S2: Instructions:

Its shows the Instructions of the game how/ about the game

S3: Display of the Game Board

S4: Server: player 1 client will send the event to the server. When the server receives it, it will broadcast it to the player 2.Player 2 will then update the grid. Then player 2 will click O.

S5: client: After player 2, Player 1 will then update the grid. Then player 1 will click X, it will send the event to the server.

S6: Winner: Players take turns placing characters into empty squares the its show winner of the game

S7: Leader Board: A large board for displaying the ranking of the leaders in a competitive event.

tional Requirements:

O Players:

This game requires two players, one playing as X and one playing as

O (with X usually starting). To ensure that a player doesn’t play

twice, switching between them is required

**3.FUNCTIONAL REQUIREMENTS:**

1.Displaying a 3x3 grid:

This grid is required to play the tic toc toe game. It is on this grid that the two players take turns marking the space as X and O.

2.Alternating between X and O players:

This game requires two players, one playing as X and one playing as O

3.Determining the winner of the game:

Once a player wins the game, the message should be played which player won. If no one won the game, then it is a draw.

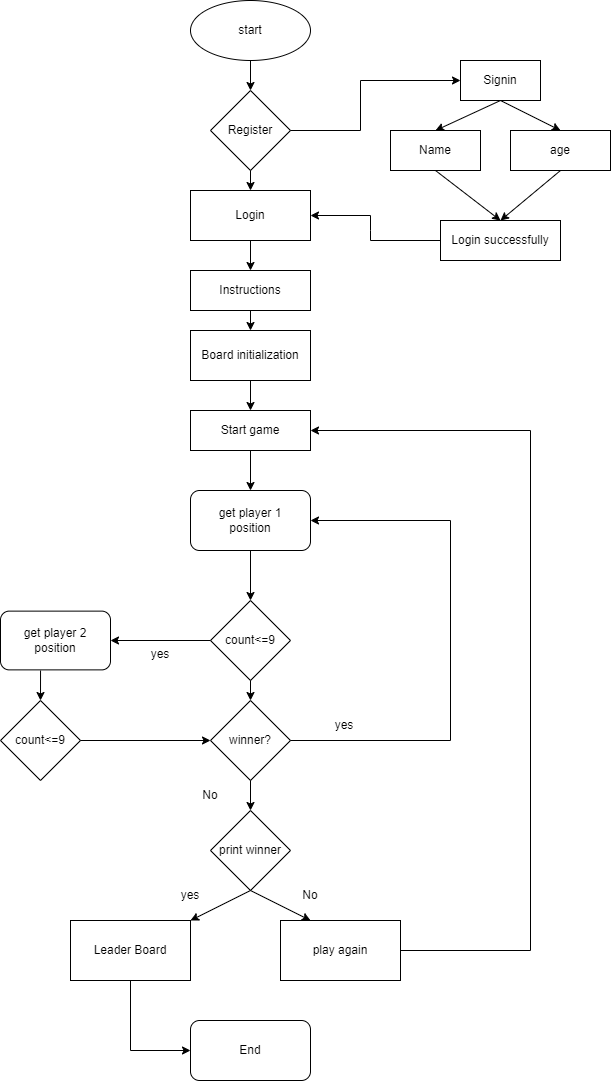
4.Displaying score details:

There must be leader board for maintain the scores.

5.Providing option to play again:

The game must provide an option to either play again or to exit the game.

**4.FLOWCHART:**

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