

Encrypted and concurrent socket implementation using gaming application (TIC-TAC-TOE GAME-USING-CLIENT-SERVER-SOCKET)

**High Level Design & Low Level Design**

The purpose of this document is to provide with a template for documenting both HLD & LLD.

**Document Control :**

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| **Project Revision History** | | | | | | | | |
|  |  |  | |  |  |  |  |  |
| **Date** | **Version** | **Author** | **Brief Description of Changes** | | | | **Approver Signature** | |
| 15.11.2022 | V\_1.5 | GROUP 3 |  | | | |  | |
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Introduction

Tic-tac-toe is a straightforward two-player game that, if both players play their best, will always end in a tie. The game is also known as ‘X’ s and ‘O’ s or zeros and crosses.

A computer or other device can be used to play the game of tic tac toe, which is typically played by drawing on paper. This timeless game provides the foundation for other ones, like Connect 4.

Around the first century B.C., a primitive version of the game was played in the Roman Empire. Three pebbles at a time is what the name "terni lapilli" denotes. Roman ruins have been discovered to be covered with chalk grid patterns from the game. Ruins in ancient Egypt have also yielded evidence of the game.

The game's British moniker, "noughts and crosses," saw its first print appearance in 1864. The term "tick-tack-toe" first appeared in literature in 1884, although it referred to a children's game played on a slate.

The crucial Rules of the Game :

* The game must be played by two players (in this program between HUMAN and COMPUTER).
* Both players mark their cells with the letters "O" and "X".
* The game ends when one of the players fills an entire row, column or diagonal with either the character ('O' or 'X') of that player.
* If no one wins, the match is considered a draw.

1.1 Key project Objective

Implementing an Online TIC-TAC-TOE Game

1.2 ABBREVITIONS

|  |  |
| --- | --- |
| OTTTG | Online TIC-TAC-TOE Game |
| OG | Online Game |

1.3 FEATURES

* The game is played on a grid that's 3 squares by 3 squares.
* You are X, your friend (or the computer in this case) is O. Players take turns putting their marks in empty squares.
* The first player to get 3 of her marks in a row (up, down, across, or diagonally) is the winner.
* When all 9 squares are full, the game is over.

1.4 PURPOSE

• Experience with socket programming, experience with implementing a network application.

1.5 PROJECT SCOPE

Online Voting System is a system which enables all citizens to cast their vote online.

The purpose is to increase the voting percentage across the country, as in the

present system people have to visit the booth to cast their vote and those people

who live out of their home town are not able to cast vote during the elections. So

due to this the voting percentage across the country is very less. Through this

software those people who live out of their home town will also be able to cast their

votes as this system is online.

And this software is on a block

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The game play will be simple :

-> There will be a simple square game board divided into nine tiles or grid spaces. When the player clicks on one of the grid spaces, it will be assigned either an "X" or an "O". The game is over when one player claims 3 grid spaces in a row or there are no moves left. The game will have a small amount of polish to make it complete.

-> At the start of the game, the board will not be active until the first player has chosen whether they are to play "X" or "O". A panel will indicate whose turn it is. When the game is over, a banner will display the winner or announce a draw if no one wins. A restart button will be displayed when the game is over, returning the game to the starting state when clicked.

**The game will need a few basic elements.**

* A background providing a backdrop for the the entire game.
* An element that will be our game board.
* An element, or set of elements, that breaks the game board up into nine areas in an even grid.
* Nine tiles that can be assigned either an "X" or and "O", but once assigned these values will persist and not be changeable by the players - either the current player or the opponent.
* Logic to change sides when a player takes their turn.
* Logic to check for a "Win" condition, allowing for draws where no one wins.
* A panel that displays who is the winner when the game is over.

**For polish, towards the end of the project, we could have some other, helpful elements**.

* A way to choose the starting player's side, "X" or "O".
* An indicator of whose turn it is.
* A restart button.
* Very basic instructions.

1.6 FUNCTIONAL OVERVIEW

[Tic-Tac-Toe](https://en.wikipedia.org/wiki/Tic-tac-toe) is a simple game for two players that we enjoyed playing as kids (especially in boring classrooms). The game involves 2 players placing their respective symbols in a 3x3 grid. The player who manages to place three of their symbols in horizontal/vertical/diagonal row wins the game. If either player fails to do so the game ends in a draw. If both the people always play their optimal strategies the game always ends in a draw.

1. Login with admin / user
2. Instructions
3. Broad Initialization
4. Start game
5. Get player 1 position
6. Get player 2 position
7. Print winner
8. Leader Board
9. Play again
10. End