



*SYNOPSIS*

*ON*

*Tic Tac Toe*

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## **INTRODUCTION**

Tic-tac-toe is a simple, two-player game that, if played optimally by both players, will always result in a tie. The game is also called noughts and crosses or Xs and Os.

Tic-tac-toe is a game that is traditionally played by being drawn on paper, and it can be played on a computer or on a variety of media.

This is an Flutter App Of Tic Tac Toe with nice UI and Self Playing AI mode.

## **History of Tic-Tac-Toe**

An early variation of the game was played in the Roman Empire, around the 1st century B.C. It was called "terni lapilli," which means "three pebbles at a time." The game's grid markings have been found chalked all over Roman ruins. Evidence of the game was also found in ancient Egyptian ruins.

The first print reference to "noughts and crosses," the British name for the game, appeared in 1864. The first print reference to a game called "tick-tack-toe" occurred in 1884 but referred to a children's game played on a slate.

## USE OF THE PROJECT

Games play a major role in maintaining a healthy mind, body, and soul of the child as it gives a lot of exercises in forming an overall healthy physic.

Following are some of the benefits of playing games to the children:

- Games let children use their creativity while nurturing their imagination, physical, cognitive, emotional strength, and proficiency in skills.
- It is because of the games that children at a very young age interact and engage in the world around them.
- Games offer children to create and explore a world that they can master, conquering their fears while practicing adult roles, sometimes in conjunction with other children or adult caregivers.
- As they master their world, games help them to develop new abilities that lead to increasing the confidence and the resiliency, which are required to face challenges of their time.
- Drifting games allow children to know how to work, to negotiate, to share, to learn self-advocacy skills and to resolve disputes.
- Preferably, most of the games were supervised by adults, but the downside of this is that children typically acquiesce to adult rules and concerns and lose some of the benefits play offers such as developing creativity, leadership, and group skills.

Tic Tac Toe is traditionally played on a  $3 \times 3$  grid. Players take turns placing a mark in one of the cells of the grid. The goal of the game is for players to position their marks so that they make a continuous line of three cells vertically, horizontally, or diagonally

## **Feasibility of Project**

### **Nonfunctional Requirements**

#### **Usability**

Standard GUI builders are employed for the T4 clients.

All code is written using Java to ensure that T4 Servers and T4 Clients can execute on MacOS, Linux, Un\*x, Solaris, and Windows systems.

#### **Reliability**

If the T4 tournament server fails, all connected T4 clients are immediately told of the situation, and the tournament is canceled. The clients can elect to reconnect (but the server may be permanently affected). There is no guarantee of continued service if a T4 tournament fails. If a T4 client fails, then all remaining games in the tournament are forfeited. If a disconnected client reconnects to the original tournament, he will only be able to participate once all rounds in the tournament have completed.

#### **Performance**

The target measure for average round-trip communication between T4 clients and T4 servers is 250ms. This performance measure is not relevant to the initial start-up time. Given that the information content of individual games is quite small, we expect to be able to support 100s of concurrent users within an individual tournament (though we restrict our initial set of users to no more than 64).

#### **Supportability**

New TicTacToe variations should be easily integrated into the T4 Tournament code, regardless of the state of an active tournament. Variations that are integrated **after** a tournament has started are only available once the tournament completes all of its rounds, and resets

## **FUNCTIONAL SPECIFICATION**

The Functional features will enhance the user experience, accompanied by a minimalistic design to declutter the home screen.

The Application will feature a Home screen showing the Recent Activity, Single Player Section and Multi Player Section.

The player UI will use Material Design by Google, “Single Player”, “Restart” & “O” & “X” button will be implemented.

The Application will also feature an “About” section for version information, and licenses used.

A database for friend list will also be maintained for quick access to play.

## **Software Specification:**

- Technology Implemented : Flutter
- Language Used : Dart
- Database : Firebase
- User Interface Design : FIGMA
- Web Browser : Chrome, Firefox, Android/IOS App

## **Hardware Requirements:**

- Processor : Quad Core ARM CPU
- Operating System : Android / IOS / Web Application
- RAM : 1 GB
- Hard disk : 1 GB
- Display : 1280 x 720 and above

## **FUTURE SCOPE**

The Application comes preloaded with most of the features and functionality a user could ask for.

The game of Tic Tac Toe is often the first paper-and-pencil game played by small children. It introduces the basic elements of a two-player game, with a small set of easy rules, clear objectives, and clearly identified turns. However, once Tic Tac Toe is mastered, it becomes quickly apparent that every game should result in a draw; that is, there is a clear winning strategy for the first player every time. Because of its simplicity, Tic Tac Toe is often overlooked as a potential area for gaming.

T4 should initially be provided with a set of Tic Tac Toe variations, but the tournament directory should be able to define and integrate additional variations as needed. Players should be able to log into the tournament system (after completing a simple on-line registration system) to participate. The tournament director maintains the integrity of the tournament, and can unilaterally kick-off any user (either temporarily or permanently) even in the middle of a game.