# TicTacToe

What is TicTacToe?

TicTacToe is a 2 player game played on a 3 x 3 board. Each player is allotted a symbol (one X and one O). Initially, the board is empty. Alternatively, each player takes a turn and puts their symbol at any empty slot. The first player to get their symbol over a complete row OR a complete column OR a diagonal wins.

You can play the game within Google Search by just searching for "tictactoe"!
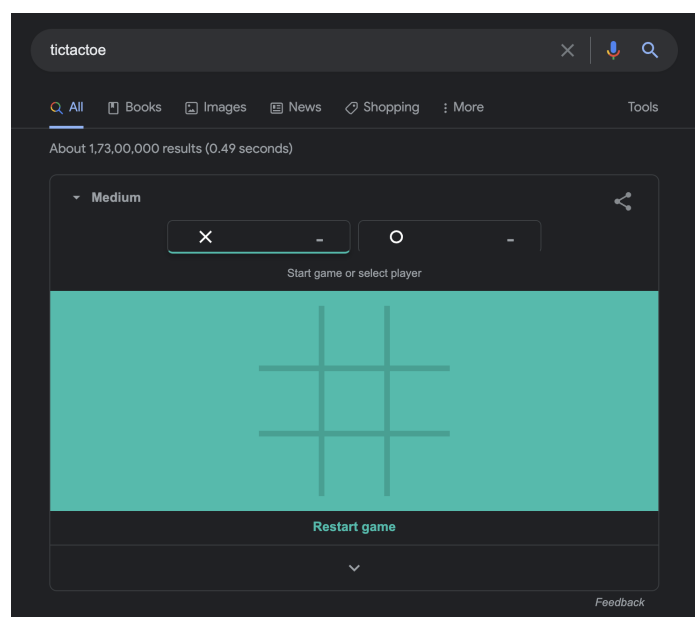
Questions to Ask

- Will the game be played amongst only 2 players or can there be any number of players in future?
- Is the board size restricted to 3x3 or can it be any NxN?
- Feature Suggestions:
    - Do we want to time a move? Skip/ Declare the other person as winner if the move doesn't happen within x seconds.
    - Do we want to support undo operation?
    - Can there be some players who are just watching? Not playing.
    - Do we want to store analytics? Basically previous games, who played what move etc.
    - Can one of the players be a bot?
    - Support for tournaments? Basically a set of matches, each match between 2 players of the tournament.
    - Can there be different ways to win?

Expectations

- The code should be working and functionally correct
- Good software design practices should be followed:
    - Code should be modular, readable, extensible
    - Separation of concern should be addressed
    - Project structured well across multiple files/ packages
- Write unit testsNo need to create
- No need of GUI

Problem Requirements

- Board can be of any NxN size.
- There can be any number of players. Each player will be allotted a symbol.
- The players can be either humans or bots. Each human player will have a name.
- We should allow support to undo any number of moves.
- Try to implement the winner detection algorithm in O(1).

Interaction Format

Command Line based interactive application.

Input/ Outputs

Game Start

Allows to start the game with a given number of players, board size, and symbols of every player.

```
StartGame [Number of Players] [... User ID and Symbol for each player
separated by space ...] [Board Size]
```

Example:

```
StartGame 2 u1 X u2 O 3
```

If a player is a computer, their user id will be C.