

Lab 2

Direction: Submit the typed source code from git url. All tasks must be completed. Each team member is required to do at least 3 tasks.

Tic Tac Toe

For this lab, you will define the essential methods of the class **TicTacToe** so that you can play Tic-Tac-Toe which is implemented by using an array as the board that consists of nine (9) elements. The indices association with the positions on the board are:

0	1	2
3	4	5
6	7	8

Your group will have to rewrite the given method so that they perform their descriptions correctly.

- ☐ A public default constructor. It assigns '-' (blank) to each element of *board* and assigns 1 to *player*. [Initialization.h]
- ☐ A public copy constructors. It copies the fields of a **TicTacToe** object. [Copy.h]
- ☐ A public overloaded assignment operator. It copies the fields of a **TicTacToe** object. [Assignment.h]
- ☐ A public boolean constant method named **verticalWinner()** that takes no parameters. It returns true if any vertical line consists of the same non-blank character; otherwise, it returns false. [VerticalWinner.h]
- ☐ A public boolean constant method named **horizontalWinner()** that takes no parameters. It returns true if any horizontal line consists of the same non-blank character; otherwise, it returns false. [HorizontalWinner.h]
- ☐ A public boolean constant method named **diagonalWinner()** that takes no parameters. It returns true if any diagonal line consists of the same non-blank character; otherwise, it returns false. [DiagonalWinner.h]
- ☐ A public boolean constant method named **winner()** that takes no parameters. It returns true if any vertical, horizontal, or diagonal line consists of the same non-blank character; otherwise, it returns false. [Winner.h]
- ☐ A public boolean constant method named **hasMove()** that takes no parameters. It returns true if any element of *board* is equal to the blank character; otherwise, it returns false. [HasMove.h]
- ☐ A public boolean method named **makeMove()** that takes an int named *position* as a parameter. If the element of *board* associated with *position* is a blank character, it is assigned the token associated with the current player, and the function returns true. Otherwise, the function returns false. Positions from top-left to bottom-right are 1 through 9. [MakeMove.h]
- ☐ A public void method named **switchPlayer()** that takes no parameters. It switches *player* to the next player. Tic-Tac-Toe only has two players. [SwitchPlayer.h]
- ☐ A public boolean constant method named **canPlay()** that takes no parameters. It returns true if there is no winner and there are blank spaces on the board. [CanPlay.h]
- ☐ A public boolean constant method named **ToString()** that takes no parameters. It returns a string that displays the current player preceded by the label "Player ", and then two spaces below, the values of the elements of *board* in the same formats and order as the image above with a newline after the image. [ToString.h]