Tic-Tac-Toe game in C++

This includes 3 files:

1) TicTacToe.h is declaration of the functions. 2) TicTacToe.cpp contains logic behind the functions to play game. 3) Main.cpp is the main project to display & interface of the code.

I took around four and half hours to complete, but all required raw functions I programmed in just 2 hours. I took remaining time for debug & furbish the program.

1) TicTacToe.h :-

```
#pragma once
class TicTacToe
{
public:
       void OnBoard(); // make 3*3 board & put 0 as default
       int count = 0;
       int Winner(); // 8 possible winning conditions & draw condition

private:

       enum WinOut { WinPlayer1 = 1, WinPlayer2, Draw }; // 1= Player1 won; 2= Player2
won; 3= game draws
       int player;
       char Board[3][3];
       int row, column;
       bool RepeatFlag = false;

       void GetInput(); // Get input from player1 ('x') & player2('o')
       int turn(int); // Change players' turn.
       void BoardPrint(char x[3][3]); // Print Board each time after getting input from
player
};
```

2) TicTacToe.cpp

```
#include <iostream>
#include "TicTacToe.h"

using namespace std;

void TicTacToe::OnBoard()
{
       player = 2;

       int i, j;

       for (i = 0; i < 3; i++)
       {
              for (j = 0; j < 3; j++)
```

```
        {
            Board[i][j] = 0;
        }
    }
    GetInput();
}

void TicTacToe::GetInput()
{
    if (RepeatFlag == false)
        player = turn(player);
    else
        RepeatFlag = false;


    cout << "Row :";
    cin >> row;
    row--;
    cout << "Column :";
    cin >> column;
    column--;

    if (Board[row][column] == NULL) {
            count++;
            if (player == 1)
                Board[row][column] = 'x';
            else if (player == 2)
                Board[row][column] = 'o';
    }
    else {
            cout << "Input is overwritten or invalid, not allowed !!" << endl <<
"Please input your choice again:" ;
            RepeatFlag = true;
            GetInput();
    }
    BoardPrint(Board);


}


int TicTacToe::turn(int player)
{
    switch (player)
    {
    case 1: player = 2;
    {
                cout << "\nPlayer 2 turn.\n\n";
                break;
    }
    case 2: player = 1;
    {
                cout << "\nPlayer 1 turn.\n\n";
                break;
    }
    }
    return player;
}
```

```
void TicTacToe::BoardPrint(char x[3][3])
{
	cout << "      |     |     \n";
	cout << "   " << x[0][0] << "  |  " << x[0][1] << "  |  " << x[0][2] << "  \n";
	cout << " _____|_____|_____\n";
	cout << "      |     |     \n";
	cout << "   " << x[1][0] << "  |  " << x[1][1] << "  |  " << x[1][2] << "  \n";
	cout << " _____|_____|_____\n";
	cout << "      |     |     \n";
	cout << "   " << x[2][0] << "  |  " << x[2][1] << "  | " << x[2][2] << "  \n";
	cout << "      |     |     \n";
	Winner();


}

int TicTacToe::Winner()
{
	char ans = NULL;

	if (Board[0][0] == Board[1][1] && Board[0][0] == Board[2][2])
		ans = Board[0][0];
	else if (Board[2][0] == Board[1][1] && Board[2][0] == Board[0][2])
		ans = Board[2][0];
	else if (Board[0][0] == Board[0][1] && Board[0][0] == Board[0][2])
		ans = Board[0][0];
	else if (Board[1][0] == Board[1][1] && Board[1][0] == Board[1][2])
		ans = Board[1][0];
	else if (Board[2][0] == Board[2][1] && Board[2][0] == Board[2][2])
		ans = Board[2][0];
	else if (Board[0][0] == Board[1][0] && Board[0][0] == Board[2][0])
		ans = Board[0][0];
	else if (Board[0][1] == Board[1][1] && Board[0][1] == Board[2][1])
		ans = Board[0][1];
	else if (Board[0][2] == Board[1][2] && Board[0][2] == Board[2][2])
		ans = Board[0][2];

	if (ans == 'x')
	{
		return WinPlayer1;
	}
	else if(ans == 'o')
	{
		return WinPlayer2;
	}
	else if (count >= 9)
	{
		return Draw;
	}
	GetInput();
}
```

3) Main.cpp

```
#include <iostream>
```

```
#include "TicTacToe.h"

using namespace std;

int main(){
        char PlayAgain = NULL;
        TicTacToe game;

        cout << "Welcome to the Tic-Tac-Toe Game" << endl;

        cout << "For Player1 = 'x' and Player2 = 'o' " << endl;

        cout << "Select Row from (1 or 2 or 3) and Column from (1 or 2 or 3) one by one "
<< endl;

REPEAT:
        game.count = 0;
        game.OnBoard();
        switch (game.Winner())
        {
        case 1:
                cout << "Player 1 Won . Congratulations !! ";
                break;
        case 2:
                cout << "Player 2 Won . Congratulations !! ";
                break;
        case 3:
                cout << "Game Draws";
                break;
        default:
                cout << "Failed";
                break;
        }

        PLAY:
        cout << "Do you want to play it again ? Y/N :";
        cin >> PlayAgain;

        if (PlayAgain == 'y' || PlayAgain == 'Y')
                goto REPEAT;
        else if (PlayAgain != 'y' && PlayAgain != 'n' && PlayAgain != 'Y' && PlayAgain !=
'N'){
                cout << " invalid input!   Please select Y/N only. /n";
                goto PLAY;
        }
        else
                return 0;


}
```