

Tic-tac-toe Game

Input:

```
#include <iostream>
#include <vector>

using namespace std;

void drawBoard(const vector<char>& board) {
    cout << " " << board[0] << " | " << board[1] << " | " << board[2] << endl;
    cout << "-----" << endl;
    cout << " " << board[3] << " | " << board[4] << " | " << board[5] << endl;
    cout << "-----" << endl;
    cout << " " << board[6] << " | " << board[7] << " | " << board[8] << endl;
}

bool checkWin(const vector<char>& board, char player)
{
    for (int i = 0; i < 3; i++) {
        if (board[i] == player && board[i + 3] == player && board[i + 6] == player)
            return true;
    }
    for (int i = 0; i < 9; i += 3) {
        if (board[i] == player && board[i + 1] == player && board[i + 2] == player)
            return true;
    }
    if (board[0] == player && board[4] == player && board[8] == player)
        return true;
    if (board[2] == player && board[4] == player && board[6] == player)
        return true;

    return false;
}

bool checkFull(const vector<char>& board)
{
    for (char cell : board) {
        if (cell == ' ')
            return false;
    }
}
```

```

    return true;
}

int main() {
    vector<char> board(9, ' ');
    char currentPlayer = 'X';
    int move;

    cout << "Tic Tac Toe" << endl;

    while (true)
    {
        drawBoard(board);
        cout << "Player " << currentPlayer << ", enter your move (1-9): ";
        cin >> move;
        move--;
        if (move < 0 || move >= 9 || board[move] != ' ')
        {
            cout << "Invalid move! Try again." << endl;
            continue;
        }
        board[move] = currentPlayer;

        if (checkWin(board, currentPlayer))
        {
            cout << "Player " << currentPlayer << " wins!" << endl;
            break;
        }

        if (checkFull(board)) {
            cout << "It's a tie!" << endl;
            break;
        }

        currentPlayer = (currentPlayer == 'X') ? 'O' : 'X';
    }
    drawBoard(board);

    return 0;
}

```

Output:

Tic Tac Toe

```
| |  
-----
```

```
| |  
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```

```
| |
```

Player X, enter your move (1-9): 5

```
| |  
-----
```

```
|X|  
-----
```

```
| |
```

Player O, enter your move (1-9): 1

```
O| |  
-----
```

```
|X|  
-----
```

```
| |
```

Player X, enter your move (1-9): 2

```
O|X|  
-----
```

```
|X|  
-----
```

```
| |
```

Player O, enter your move (1-9): 9

```
O|X|  
-----
```

```
|X|  
-----
```

```
| |O
```

Player X, enter your move (1-9): 8

```
O|X|  
-----
```

```
|X|  
-----
```

```
|X|O
```

Player X wins!