Name Muhammad Haroon

Tic Tac Toe Code!

#include <iostream>

#include <vector>

using namespace std;

void printBoard(const vector<vector<char>>& board) {

for (const auto& row : board) {

for (char cell : row) {

cout << cell << " | ";

}

cout << "\n---------\n";

}

}

bool checkWin(const vector<vector<char>>& board, char player) {

for (int i = 0; i < 3; ++i) {

if ((board[i][0] == player && board[i][1] == player && board[i][2] == player) ||

(board[0][i] == player && board[1][i] == player && board[2][i] == player)) {

return true;

}

}

return (board[0][0] == player && board[1][1] == player && board[2][2] == player) ||

(board[0][2] == player && board[1][1] == player && board[2][0] == player);

}

bool isBoardFull(const vector<vector<char>>& board) {

for (const auto& row : board) {

for (char cell : row) {

if (cell == ' ') {

return false;

}

}

}

return true;

}

void makeMove(vector<vector<char>>& board, int row, int col, char player) {

if (board[row][col] == ' ') {

board[row][col] = player;

} else {

cout << "Invalid move. Cell already occupied. Try again.\n";

}

}

int main() {

vector<vector<char>> board(3, vector<char>(3, ' '));

char currentPlayer = 'X';

cout << "Welcome to Tic Tac Toe!\n";

while (true) {

printBoard(board);

int row, col;

cout << "Player " << currentPlayer << ", enter your move (row and column): ";

cin >> row >> col;

row--;

col--;

if (row >= 0 && row < 3 && col >= 0 && col < 3) {

makeMove(board, row, col, currentPlayer);

if (checkWin(board, currentPlayer)) {

printBoard(board);

cout << "Player " << currentPlayer << " wins!\n";

break;

}

if (isBoardFull(board)) {

printBoard(board);

cout << "It's a tie!\n";

break;

}

// Switch to the other player

currentPlayer = (currentPlayer == 'X') ? 'O' : 'X';

} else {

cout << "Invalid move. Row and column must be between 1 and 3. Try again.\n";

}

}

return 0;

}