#include <iostream>

#include <iomanip>

using namespace std;

void grid(char arr[3][3])

{

cout << "Game GRID: " << endl << endl;

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

{

for (int j = 0; j < 3; j++)

{

cout << arr[i][j];

if (j < 2)

{

cout << " | ";

}

}

cout << endl;

if (i < 2)

{

cout << "----------";

}

cout << endl;

}

}

bool chkwin(char arr[3][3], char player)

{

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

{

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

{

return true;

}

}

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

{

return true;

}

return false;

}

bool chkdraw(char arr[3][3])

{

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

{

for (int j = 0; j < 3; j++)

{

if (arr[i][j] == ' ')

return false;

}

}

return true;

}

char swi(char player)

{

return (player == 'X') ? 'O' : 'X';

}

int main()

{

char arr[3][3];

char player = 'X';

bool won = false;

bool draw = false;

char playagain;

system("color 17");

cout << setfill('\*') << setw(120);

cout << " " << endl;

cout << setfill(' ') << setw(75);

cout << "\*\*\*\* WELCOME TO TIC TAK TOE GAME \*\*\*\*" << endl ;

cout << setfill('\*') << setw(120);

cout << " " << endl <<endl;

do

{

// loop to intialize grid

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

{

for (int j = 0; j < 3; j++)

{

arr[i][j] = ' ';

}

}

grid(arr);

do

{

int row, col;

cout << "Player " << player << " Enter your positions " << endl <<endl;

cout << "Enter row # :";

cin >> row;

cout << "Enter col # :";

cin >> col;

cout << endl;

if (row >= 0 && row < 3 && col >= 0 && col < 3 && arr[row][col]==' ')

{

arr[row][col] = player;

grid(arr);

won = chkwin(arr, player);

if (won)

{

cout << "Player " << player << " has won the game CONGRATULATIONS " << endl;

break;

}

draw = chkdraw(arr);

if (draw)

{

cout << "The game has been drawn " << endl;

break;

}

player = swi(player);

}

else

{

cout << "invalid move " << endl;

}

cout << endl;

} while (!won && !draw);

cout << "if you want to play again press (y or Y) : ";

cin >> playagain;

} while (playagain == 'y' || playagain == 'Y');

return 0;

}