Assignment 1

Non AI Tic Tak Toe :

Code :

#include <iostream>

using namespace std;

bool isdraw(char a[][3]);

int ttt(char a[][3]){

// player1='X', player2='O'

int t=1; int p;

while(isdraw(a)==1){

cout<<"Player"<<t<<"'s turn: "<<endl;

cout<<"Enter the position: "<<endl;

cin>>p;

switch (p)

{

case 1:

if(a[0][0]==' ' && t==1){

a[0][0]='X';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[0][1] && a[0][1]==a[0][2] || a[0][0]==a[1][0] && a[1][0]==a[2][0] || a[0][0]==a[1][1] && a[1][1]==a[2][2]){

return 1;

}

else{

t=2;

}

}

else if(a[0][0]==' ' && t==2){

a[0][0]='O';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[0][1] && a[0][1]==a[0][2] || a[0][0]==a[1][0] && a[1][0]==a[2][0] || a[0][0]==a[1][1] && a[1][1]==a[2][2]){

return 2;

}

else{

t=1;

}

}

else{

cout<<"Position" <<p<<" is already filed"<<endl;

}

break;

case 2:

if(a[0][1]==' ' && t==1){

a[0][1]='X';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[0][1] && a[0][1]==a[0][2] || a[0][1]==a[1][1] && a[1][1]==a[2][1]){

return 1;

}

else{

t=2;

}

}

else if(a[0][1]==' ' && t==2){

a[0][1]='O';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[0][1] && a[0][1]==a[0][2] || a[0][1]==a[1][1] && a[1][1]==a[2][1]){

return 2;

}

else{

t=1;

}

}

else{

cout<<"Position" <<p<<" is already filed"<<endl;

}

break;

case 3:

if(a[0][2]==' ' && t==1){

a[0][2]='X';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[0][1] && a[0][1]==a[0][2] || a[0][2]==a[1][2] && a[1][2]==a[2][2] || a[0][2]==a[1][1] && a[1][1]==a[2][0]){

return 1;

break;

}

else{

t=2;

}

}

else if(a[0][2]==' ' && t==2){

a[0][2]='O';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[0][1] && a[0][1]==a[0][2] || a[0][2]==a[1][2] && a[1][2]==a[2][2] || a[0][2]==a[1][1] && a[1][1]==a[2][0]){

return 2;

break;

}

else{

t=1;

}

}

else{

cout<<"Position" <<p<<" is already filed"<<endl;

}

break;

case 4:

if(a[1][0]==' ' && t==1){

a[1][0]='X';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[1][0] && a[1][0]==a[2][0] || a[1][0]==a[1][1] && a[1][1]==a[1][2]){

return 1;

}

else{

t=2;

}

}

else if(a[1][0]==' ' && t==2){

a[1][0]='O';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[1][0] && a[1][0]==a[2][0] || a[1][0]==a[1][1] && a[1][1]==a[1][2]){

return 2;

}

else{

t=1;

}

}

else{

cout<<"Position" <<p<<" is already filed"<<endl;

}

break;

case 5:

if(a[1][1]==' ' && t==1){

a[1][1]='X';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[1][1] && a[1][1] ==a[2][2] || a[0][1]==a[1][1] && a[1][1]==a[2][1] || a[0][2]==a[1][1] && a[1][1]==a[2][0]){

return 1;

}

else{

t=2;

}

}

else if(a[1][1]==' ' && t==2){

a[1][1]='O';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[1][1] && a[1][1] ==a[2][2] || a[0][1]==a[1][1] && a[1][1]==a[2][1] || a[0][2]==a[1][1] && a[1][1]==a[2][0]){

return 2;

}

else{

t=1;

}

}

else{

cout<<"Position" <<p<<" is already filed"<<endl;

}

break;

case 6:

if(a[1][2]==' ' && t==1){

a[1][2]='X';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][2]==a[1][2] && a[1][2]==a[2][2] || a[1][0]==a[1][1] && a[1][1]==a[1][2]){

return 1;

}

else{

t=2;

}

}

else if(a[1][2]==' ' && t==2){

a[1][2]='O';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][2]==a[1][2] && a[1][2]==a[2][2] || a[1][0]==a[1][1] && a[1][1]==a[1][2]){

return 2;

}

else{

t=1;

}

}

else{

cout<<"Position" <<p<<" is already filed"<<endl;

}

break;

case 7:

if(a[2][0]==' ' && t==1){

a[2][0]='X';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[1][0] && a[1][0]==a[2][0] || a[2][0]==a[2][1] && a[2][1]==a[2][2] || a[2][0]==a[1][1] && a[1][1]==a[0][2]){

return 1;

}

else{

t=2;

}

}

else if(a[2][0]==' ' && t==2){

a[2][0]='O';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][0]==a[1][0] && a[1][0]==a[2][0] || a[2][0]==a[2][1] && a[2][1]==a[2][2] || a[2][0]==a[1][1] && a[1][1]==a[0][2]){

return 2;

}

else{

t=1;

}

}

else{

cout<<"Position" <<p<<" is already filed"<<endl;

}

break;

case 8:

if(a[2][1]==' ' && t==1){

a[2][1]='X';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][1]==a[1][1] && a[1][1]==a[2][1] || a[2][0]==a[2][1] && a[2][1]==a[2][2]){

return 1;

}

else{

t=2;

}

}

else if(a[2][1]==' ' && t==2){

a[2][1]='O';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][1]==a[1][1] && a[1][1]==a[2][1] || a[2][0]==a[2][1] && a[2][1]==a[2][2]){

return 2;

}

else{

t=1;

}

}

else{

cout<<"Position" <<p<<" is already filed"<<endl;

}

break;

case 9:

if(a[2][2]==' ' && t==1){

a[2][2]='X';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][2]==a[1][2] && a[1][2]==a[2][2] || a[2][0]==a[2][1] && a[2][1]==a[2][2] || a[0][0]==a[1][1] &&a[1][1]==a[2][2]){

return 1;

}

else{

t=2;

}

}

else if(a[2][2]==' ' && t==2){

a[2][2]='O';

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

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

cout<<" | ";

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

cout<<a[i][j]<<" | ";

}

cout<<endl;

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

}

if(a[0][2]==a[1][2] && a[1][2]==a[2][2] || a[2][0]==a[2][1] && a[2][1]==a[2][2] || a[0][0]==a[1][1] &&a[1][1]==a[2][2]){

return 2;

}

else{

t=1;

}

}

else{

cout<<"Position" <<p<<" is already filed"<<endl;

}

break;

default:

cout<<"Follow the rule for Position"<<endl;

break;

}

}

return 0;

}

int main(){

char a[3][3]={{' ',' ',' '},{' ',' ',' '},{' ',' ',' '}}; // 2D array

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

cout<<" Rules: "<<endl;

cout<<" 1) Player 1 has 'X' and Player 2 has 'O'"<<endl;

cout<<" 2) First Enter the position number and then press enter"<<endl;

cout<<" 3) Position numbers are as follows: "<<endl;

cout<<endl;

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

int k=1;

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

cout<<" | ";

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

cout<<k<<" | ";

k++;

}

cout<<endl;

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

}

cout<<endl;

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

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

cout<<" | ";

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

cout<<" "<<" | ";

k++;

}

cout<<endl;

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

}

int result=ttt(a);

if(result==1){

cout<<"Winner is Player 1 "<<endl;

}

else if(result==2){

cout<<"Winner is Player 2 "<<endl;

}

else{

cout<<"Draw"<<endl;

}

}

bool isdraw(char a[][3]){

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

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

if(a[i][j]==' '){

return 1;

}

}

}

return 0;

}