#include<iostream>

using namespace std;

static char board[3][3]= {{'.','.','.'}, {'.','.','.'}, {'.','.','.'}},ch,symbol,ch1;

string P1,P2;

int temp=0,c,r;

void boardReset()

{

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

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

board[i][j] = '.';

}

void printBoard()

{

system("cls");

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

{

cout << "\t\t\t";

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

{

cout << " " << board[i][j] << " ";

}

cout << "\n";

}

}

void movetime(char c1)

{

if(board[r-1][c-1] == '.')

board[r-1][c-1] = c1;

else

{

cout << "\nThis Position is Already Occupied!\n\n";

temp--;

}

}

bool winner(char ch1)

{

return((board[0][0] == ch1 && board[0][1] == ch1 && board[0][2] == ch1) ||

(board[1][0] == ch1 && board[1][1] == ch1 && board[1][2] == ch1) ||

(board[2][0] == ch1 && board[2][1] == ch1 && board[2][2] == ch1) ||

(board[0][0] == ch1 && board[1][0] == ch1 && board[2][0] == ch1) ||

(board[0][1] == ch1 && board[1][1] == ch1 && board[2][1] == ch1) ||

(board[0][2] == ch1 && board[1][2] == ch1 && board[2][2] == ch1) ||

(board[0][0] == ch1 && board[1][1] == ch1 && board[2][2] == ch1) ||

(board[0][2] == ch1 && board[1][1] == ch1 && board[2][0] == ch1));

}

bool nospace()

{

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

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

if(board[i][j] == '.')

return false;

return true;

}

void gametime()

{

do

{

if(temp%2==0)

{

cout<<P1<<" is the player of current turn:\n";

symbol='X';

}

else if(temp%2!=0)

{

cout<<P2<<" is the player of current turn:\n";

symbol='O';

}

while(1)

{

cout << "Enter Column No. you want to make move: ";

cin >> c;

if(c < 1 || c > 3)

cout << "Enter Coulmn in Range 1 to 3\n";

else

break;

}

while(1)

{

cout << "Enter Row No. you want to make move: ";

cin >> r;

if(r < 1 || r > 3)

cout << "Enter Row in Range 1 to 3\n";

else

break;

}

movetime(symbol);

temp++;

printBoard();

}while(!winner(symbol)&&!nospace());

}

bool boardfull()

{

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

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

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

return false;

return true;

}

int main()

{

char ch;

system("cls");

do

{

cout<<"\t\t-----------------------TIC-TAC-TOE---------------------------- ";

cout<<"\n\tEnter the name for the First player : ";

cin>>P1;

cout<<"\n\tSymbol assigned to "<<P1<<" is X";

cout<<"\n\n\tEnter the name for the O player: ";

cin>>P2;

cout<<"\n\tSymbol assigned to "<<P2<<" is O\n";

cout<<"\t\t\t\tGame Board\n";

printBoard();

gametime();

cout << "\t\t\t\tRESULT: ";

if(boardfull() && !(winner('X') || winner('O')))

cout << "Game Tie!\n";

else if(temp % 2 == 0)

cout << P2 << " is the winner\n";

else

cout << P1 << " is the winner\n";

boardReset();

cout << "\nDo You Want to Play Again? (Y / N): ";

temp = 0;

cin >> ch;

}

while(ch=='y' || ch=='Y');

}