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#include<iostream>
#include<string.h>
#include<conio.h>
using namespace std;
void board();
int checkwin();
char square[10]={'0','1','2','3','4','5','6','7','8','9'};
int main(){
    int i,choice,player=1;
    char mark,player1name[25],player2name[25],turnname[25],winname[25];
    cout<<"\t\t\t"<<"TIC TAC TOE"<<endl;
    cout<<"Enter player 1 name:";
    cin>>player1name;
    cout<<endl<<"Enter player 2 name:";
    cin>>player2name;
    cout<<player1name<<":X and "<<player2name<<":O"<<endl;
    do{
        board();
        player=(player%2==0)?2:1;
        mark=(player==1)?'X':'O';
        if(player==1)
            strcpy(turnname,player1name);
        else
            strcpy(turnname,player2name);
        cout<<turnname<<"'s turn"<<endl;
        cout<<"Enter your choice:";
        cin>>choice;
        if(choice==1 && square[1]=='1')
            square[1]=mark;
        else if(choice==2 && square[2]=='2')
            square[2]=mark;
        else if(choice==3 && square[3]=='3')
            square[3]=mark;
        else if(choice==4 && square[4]=='4')
            square[4]=mark;
        else if(choice==5 && square[5]=='5')
            square[5]=mark;
        else if(choice==6 && square[6]=='6')
            square[6]=mark;
        else if(choice==7 && square[7]=='7')
            square[7]=mark;
    }
}

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        else if(choice==8 && square[8]=='8')
            square[8]=mark;
        else if(choice==9 && square[9]=='9')
            square[9]=mark;
        else{
            i=checkwin();
            cout<<"INVALID MOVE!!!!!!!!!!!!!!!!!!!!!"<<endl;
            player--;
            continue;
        }
        i=checkwin();
        player++;
    }while(i!=-1);
    if(i==1){
        board();
        player--;
        if(player==1)
            strcpy(winname,player1name);
        else
            strcpy(winname,player2name);
        cout<<winname<<" wins"<<endl;
    }else{
        board();
        cout<<"Game has ended in DRAW"<<endl;
    }
    getch();
    return 0;
}

void board(){
    cout<<" _____\n";
    cout<<"|   |   |   |\n";
    cout<<"| "<<square[1]<<" | "<<square[2]<<" | "<<square[3]<<" |\n";
    cout<<"|_____|_____|_____|"<<"\n";
    cout<<"|   |   |   |\n";
    cout<<"| "<<square[4]<<" | "<<square[5]<<" | "<<square[6]<<" |\n";
    cout<<"|_____|_____|_____|"<<"\n";
    cout<<"|   |   |   |\n";
    cout<<"| "<<square[7]<<" | "<<square[8]<<" | "<<square[9]<<" |\n";
    cout<<"|_____|_____|_____|<<"\n";
}

int checkwin(){

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    if(square[1]==square[2] && square[2]==square[3])
        return 1;
    else if(square[4]==square[5] && square[5]==square[6])
        return 1;
    else if(square[7]==square[8] && square[8]==square[9])
        return 1;
    else if(square[1]==square[4] && square[4]==square[7])
        return 1;
    else if(square[2]==square[5] && square[5]==square[8])
        return 1;
    else if(square[3]==square[6] && square[6]==square[9])
        return 1;
    else if(square[1]==square[5] && square[5]==square[9])
        return 1;
    else if(square[3]==square[5] && square[5]==square[7])
        return 1;
    else if(square[1]!='1' && square[2]!='2' && square[3]!='3' && square[4]!='4' &&
square[5]!='5' && square[6]!='6' && square[7]!='7' && square[8]!='8' && square[9]!='9')
        return 0;
    else
        return -1;
}
/*
cout<<" ____ \n";
cout<<"| "<<square[1]<<" | "<<square[2]<<" | "<<square[3]<<" |\n";
cout<<"|_|_|" "<<"\n";
cout<<"| "<<square[4]<<" | "<<square[5]<<" | "<<square[6]<<" |\n";
cout<<"|_|_|" "<<"\n";
cout<<"| "<<square[7]<<" | "<<square[8]<<" | "<<square[9]<<" |\n";
cout<<"|_|_||\n";
*/

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