

```

#include<graphics.h>
#include<windows.h>
#include<iostream>
#include<string.h>
//main board in which the operations and win logic will be performed
int board[9] = {0,0,0,0,0,0,0,0,0};
//player turns
int playerTurn=1;
//for mouse click
//allowing mouse to click on possible boxes but not all
int hitBoard[9] = {0,1,2,3,4,5,6,7,8};
//coordinates of the boxes starting from the first box till end
int left[9] = {240,400,560,240,400,560,240,400,560};
int top[9] = {140,140,140,300,300,300,460,460,460};
int right[9] = {340,500,660,340,500,660,340,500,660};
int bottom[9] = {240,240,240,400,400,400,560,560,560};
//getting both the player details
class player
{
    public:
        char firstPlayer[20],secondPlayer[20];
        player()
        {
            std::cout<<"Enter The first player name\n";
            std::cin>>firstPlayer;
            std::cout<<"\nEnter the Second player name\n";
            std::cin>>secondPlayer;
        }
};
//tic tac toe class
class TicTacToe
{
    private:
        //width and height of the screen
        DWORD width,height;
    public:
        TicTacToe()
        {
            width=GetSystemMetrics(SM_CXSCREEN);
            height=GetSystemMetrics(SM_CYSCREEN);
        }
};

```

```

        initwindow(width,height,"Number Puzzle Program");
    }
    void start();
    void draw(player);
    void drawBackground();
    void drawBoard();
    void drawTextBoard();
    int checkWin(int);
    int mouseHitBox(int,int,int,int,int,int,int);
    void end(int,player);
    void gameDraw();
};

//if there is a draw
void TicTacToe::gameDraw()
{
    cleardevice();
    drawBackground();
    setcolor(WHITE);
    settextstyle(DEFAULT_FONT,HORIZ_DIR,3);
    outtextxy((width/2)-540,height/2,"GAME WAS DRAW - Press Enter to exit the
game");
    getch();
    exit(0);
}

//drawing the background
void TicTacToe::drawBackground()
{
    setcolor(BLUE);
    setfillstyle(SOLID_FILL,GREEN);
    rectangle(0,0,width,height);
    floodfill(2,2,GREEN);
}

//drawing the rectangle boxes
void TicTacToe::drawBoard()
{
    for(int i=0;i<9;i++)
    {
        setcolor(WHITE);
        rectangle(left[i],top[i],right[i],bottom[i]);
    }
}

```

**//setting up the text in the board simultaneously as the board**

```
void TicTacToe::drawTextBoard()
{
    char a[10];
    settextstyle(DEFAULT_FONT,HORIZ_DIR,2);
    for(int i=0;i<9;i++)
    {
        char ch;
        if(board[i]==0)
            continue;
        if(board[i]==1)
            ch='x';
        else if(board[i]==2)
            ch='o';
        sprintf(a,"%c",ch);
        setcolor(WHITE);
        outtextxy(left[i]+40,top[i]+40,a);
    }
}
```

**//start function to show the intro of the game**

```
void TicTacToe::start()
{
    int i,j;
    setcolor(WHITE);
    for(i=0;i<(width/2)-270;i++)
    {
        cleardevice();
        setcolor(i);
        rectangle(0,0,639,479);
        setcolor(WHITE);
        settextstyle(SANS_SERIF_FONT,HORIZ_DIR,8);
        outtextxy(i,(height/2)-140,"TIC TAC TOE");
        //delay(1);
    }
    setcolor(RED);
    settextstyle(SANS_SERIF_FONT,HORIZ_DIR,3);
    outtextxy((width/2)-200,height/2,"USE THE LEFT MOUSE TO CLICK");
    delay(2000);
    outtextxy((width/2)-350,(height/2)+40,"CLICK ON THE WINDOW AND PRESS
ENTER KEY TO START");
    getch();
}
```

```

}
//main part of the program
void TicTacToe::draw(player p)
{
    //x=mouseXPosition y=mouseYPosition
    //button=mouseClick
    //temp=swapping
    //win=checkWin()
    //hit=if there is a hit
    int i,x,y,hit,temp,win,turns=0;
    char t[5];
    char player[20];
    strcpy(player,p.firstPlayer);
    //drawing the initial things
    drawBackground();
    drawBoard();
    drawTextBoard();
    //Run until the user presses any key
    while(!kbhit())
    {
        settextstyle(DEFAULT_FONT,HORIZ_DIR,6);
        outtextxy(800,150,player);
        outtextxy(800,200,"s TURN");
        if(turns==9){
            gameDraw();
        }
        //if there is a mouse click from the user
        if(ismouseclick(WM_LBUTTONDOWN))
        {
            getmouseclick(WM_LBUTTONDOWN,x,y);
            for(i=0;i<9;i++)
            {
                if(hitBoard[i]==-1) continue;
                hit =
mouseHitBox(mousex(),mousey(),left[hitBoard[i]],top[hitBoard[i]],100,100,hitBoard[i]);
                if(hit!=-1)
                {
                    //increasing the turns to see the game draw logic
                    //if there is no box to hit and the game went draw
                    turns++;
                    //Insert the board with players turn input

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to

```
//if player turn=1 - x  
//if player turn=2 - o  
board[hit]=playerTurn;  
//add the hitBoard with -1 so that the for loop doesnot have
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```
hitBoard[hit]=-1;  
//checking win logic  
win=checkWin(playerTurn);  
if(win==1){  
    end(1,p);  
}  
if(win==2){  
    end(2,p);  
}  
//exchange the player turn  
playerTurn=(playerTurn==1)?2:1;  
//changing the players name;  
if(playerTurn==1)  
    strcpy(player,p.firstPlayer);  
else  
    strcpy(player,p.secondPlayer);  
//re setup the functions to draw on the screen  
cleardevice();  
drawBackground();  
drawBoard();  
drawTextBoard();  
break;
```

```
}
```

```
}
```

```
}//end of if there is a mouse click
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}//outer while loop
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}
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```
//checking for the mouse to hit the boxes
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```
int TicTacToe:: mouseHitBox(int px,int py,int rx,int ry,int rw,int rh,int  
userMouseHitPosition)
```

```
{  
    if(px>=rx&&px<=rx+rw&&py>=ry&&py<=ry+rh)  
    {  
        return userMouseHitPosition;  
    }  
    return -1;
```

```

}
//win logic for tic tac toe
int TicTacToe::checkWin(int p)
{
    if(p==1)
    {
        if(board[0]==1&&board[1]==1&&board[2]==1)
            return 1;
        if(board[3]==1&&board[4]==1&&board[5]==1)
            return 1;
        if(board[6]==1&&board[7]==1&&board[8]==1)
            return 1;
        if(board[0]==1&&board[3]==1&&board[6]==1)
            return 1;
        if(board[1]==1&&board[4]==1&&board[7]==1)
            return 1;
        if(board[2]==1&&board[5]==1&&board[8]==1)
            return 1;
        if(board[0]==1&&board[4]==1&&board[8]==1)
            return 1;
        if(board[2]==1&&board[4]==1&&board[6]==1)
            return 1;
    }
    else if(p==2)
    {
        if(board[0]==2&&board[1]==2&&board[2]==2)
            return 2;
        if(board[3]==2&&board[4]==2&&board[5]==2)
            return 2;
        if(board[6]==2&&board[7]==2&&board[8]==2)
            return 2;
        if(board[0]==2&&board[3]==2&&board[6]==2)
            return 2;
        if(board[1]==2&&board[4]==2&&board[7]==2)
            return 2;
        if(board[2]==2&&board[5]==2&&board[8]==2)
            return 2;
        if(board[0]==2&&board[4]==2&&board[8]==2)
            return 2;
        if(board[2]==2&&board[4]==2&&board[6]==2)
            return 2;
    }
}

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    }
    return 0;
}

//winning logic
void TicTacToe::end(int winner,player p)
{
    char t[5];
    cleardevice();
    if(winner==1)
    {
        outtextxy((width/2)-210,height/2,p.firstPlayer);
        outtextxy((width/2)-180,(height/2)+100,"Wins");
    }else
    {
        outtextxy((width/2)-210,height/2,p.secondPlayer);
        outtextxy((width/2)-180,(height/2)+100,"Wins");
    }
    getch();
    exit(0);
}

int main()
{
    player p;
    TicTacToe t;
    t.start();
    t.draw(p);
    getch();
    closegraph();
    return 0;
}

```