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❖ Department = BS Software Engineering (SE)

Assignment = Object Oriented Programming

❖ Examination: Assignment No2

```
Tic Tac Toe.java - Notepad
File Edit Format View Help
import java.util.Scanner;
import java.io.IOException;

public class TicTacToe {
public static void clrscr(){
    //clears screen in java
    try {
        if (System.getProperty("os.name").contains("windows"))
            new ProcessBuilder("cmd", "/c", "cls").inheritIO().start().waitFor();
        else
            Runtime.getRuntime().exec("clear");
    } catch (IOException | InterruptedException ex) {}
}
//input object
static Scanner Input = new Scanner(System.in);

static char Arr_Board [][] = { {'1','2','3'},
                                {'4','5','6'},
                                {'7','8','9'}
};

static char Turn = 'x';
static int row,col;
static boolean draw = false;
//Display Function
public static void Display(){
    clrscr();
    System.out.println("tic tak toe \n\nPlayer 1 [X]\n\nPlayer 2 [O]");

    System.out.println("\t "+Arr_Board[0][0]+" | "+Arr_Board[0][1]+" | "+Arr_Board[0][2]+" |");
    System.out.println("\t |___|___|___|");
    System.out.println("\t "+Arr_Board[1][0]+" | "+Arr_Board[1][1]+" | "+Arr_Board[1][2]+" |");
    System.out.println("\t |___|___|___|");
    System.out.println("\t "+Arr_Board[2][0]+" | "+Arr_Board[2][1]+" | "+Arr_Board[2][2]+" |");
}
//Player Turn Function
public static void Player_Turn(){
    int select;
    if(Turn == 'x'){
        System.out.println("Player 1 Turn [X] ==> ");
    }

    if(Turn == 'o'){
        System.out.println("Player 2 Turn [O] ==> ");
    }
}
```

Tic Tac Toe.java - Notepad



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```

};
static char Turn = 'X';
static int row,col;
static boolean draw = false;
//Display Function
public static void Display(){
    clrscr();
    System.out.println("Tic Tak Toe \n\nPlayer 1 [X]\nPlayer 2 [O]");

    System.out.println("\t "+Arr_Board[0][0]+" | "+Arr_Board[0][1]+" | "+Arr_Board[0][2]+" |");
    System.out.println("\t  _|_|_");
    System.out.println("\t "+Arr_Board[1][0]+" | "+Arr_Board[1][1]+" | "+Arr_Board[1][2]+" |");
    System.out.println("\t  _|_|_");
    System.out.println("\t "+Arr_Board[2][0]+" | "+Arr_Board[2][1]+" | "+Arr_Board[2][2]+" |");
}
//Player Turn Function
public static void Player_Turn(){
    int select;
    if(Turn == 'X'){
        System.out.println("Player 1 Turn [X] ==> ");
    }

    if(Turn == 'O'){
        System.out.println("Player 2 Turn [O] ==> ");
    }

    select = Input.nextInt();
    switch(select){
        case 1: row = 0; col = 0; break;
        case 2: row = 0; col = 1; break;
        case 3: row = 0; col = 2; break;
        case 4: row = 1; col = 0; break;
        case 5: row = 1; col = 1; break;
        case 6: row = 1; col = 2; break;
        case 7: row = 2; col = 0; break;
        case 8: row = 2; col = 1; break;
        case 9: row = 2; col = 2; break;
        default:
            System.out.println("Input Not Valid");
            break;
    }
    if (Turn == 'X' && Arr_Board[row][col]!='X' && Arr_Board[row][col]!='O'){
        Arr_Board[row][col] = 'X';
        Turn = 'O';
    }
    else if (Turn == 'O' && Arr_Board[row][col]!='X' && Arr_Board[row][col]!='O'){
        Arr_Board[row][col] = 'O';
        Turn = 'X';
    }
    else{
        System.out.println("Box Filled!! \nTry Again!");
        Player_Turn();
    }
}

```

```
        Turn = 'o';
    }
    else if (Turn == 'o' && Arr_Board[row][col]!='x' && Arr_Board[row][col]!='o'){
        Arr_Board[row][col] = 'o';
        Turn = 'x';
    }
    else{
        System.out.println("Box Filled!! \nTry Again!");
        Player_Turn();
    }
    Display();
}

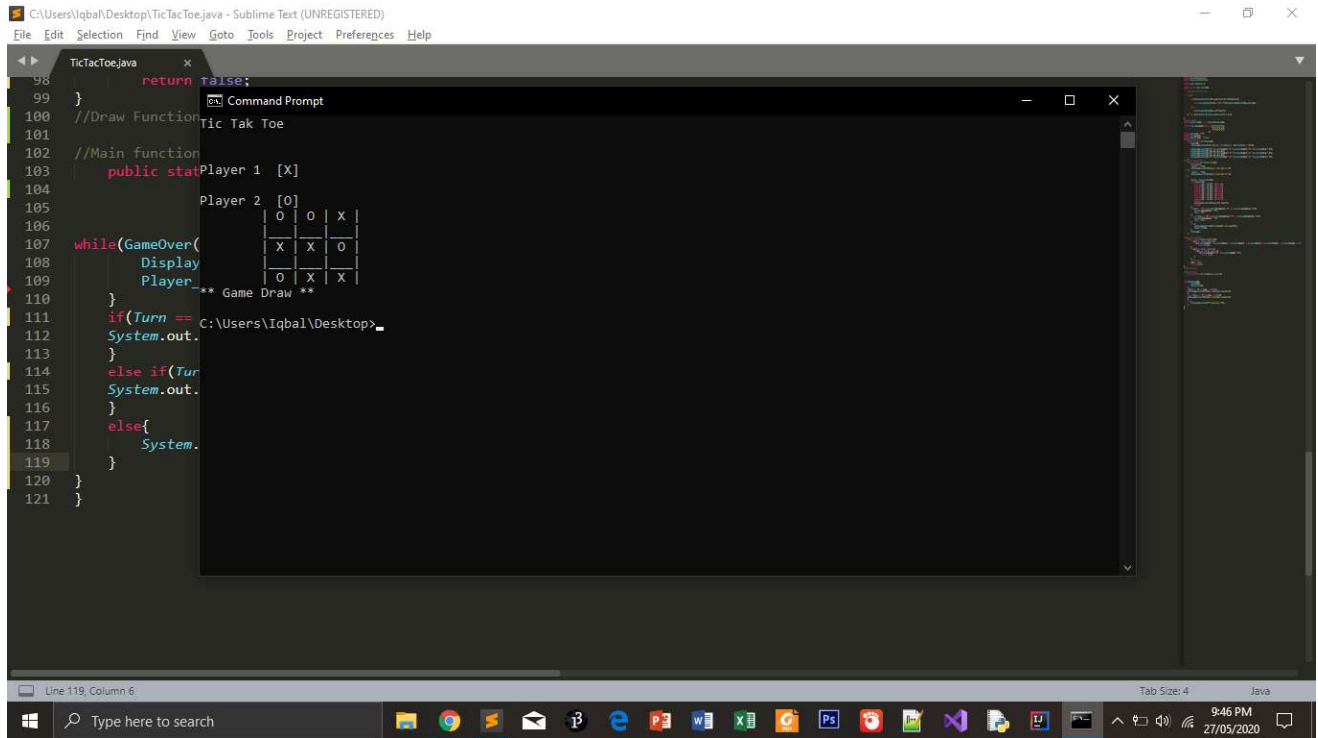
//Game Over function
public static boolean GameOver(){
    for(int r = 0; r < 3; r++){
        if(Arr_Board[r][0] == Arr_Board[r][1] && Arr_Board[r][0] == Arr_Board[r][2] || Arr_Board[0][r] == Arr_Board[1][r] && Arr_Board[0][r] == Arr_Boar
            return false;
        }
        for(int r = 0; r < 3; r++){
            for(int c = 0; c < 3; c++){
                if(Arr_Board[r][c]!='x' && Arr_Board[r][c]!='o')
                    return true;
            }
        }
        //Game Draw
        draw = true;
        return false;
    }
}

//Draw Function

//Main function
public static void main(String args[]){

while(GameOver()){
    Display();
    Player_Turn();
}
if(Turn == 'o' && draw == false){
    System.out.println("Player 1 [X] wins Congrats");
}
else if(Turn == 'x' && draw == false){
    System.out.println("Player 2 [O] wins Congrats");
}
else{
    System.out.println("** Game Draw **");
}
}
}
```


Game Draw.



```
98         return false;
99     }
100 //Draw Function Tic Tak Toe
101
102 //Main function
103     public static Player 1 [X]
104
105         Player 2 [0]
106         | 0 | 0 | X |
107         | X | X | 0 |
108         | 0 | X | X |
109     *** Game Draw **
110 }
111 if (Turn == C:\Users\Iqbal\Desktop>
112     System.out.
113 }
114 else if (Tur
115     System.out.
116 }
117 else {
118     System.
119 }
120 }
121 }
```

Line 119, Column 6

Tab Size: 4 Java

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