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Department----- BS Software Engineering
Semester----- 2nd
Subject----- Object Oriented Programming
Assignment----- first
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ASSIGNMENT OF TIC TAC

TOE

```
package tictactoe;
import java.util.Scanner;

public class tic {

    public static int row,col;
    public static Scanner scan=new Scanner(System.in);
    public static char[][] board=new char [3][3];
    public static char turn= 'X';

    public static void main(String[] args) {

        for (int i=0; i<3; i++) {
            for (int j=0; j<3; j++)
            {
                board[i][j]='_';
            }
        }

        Play();
    }
}
```

```

    }

    public static void Play()
    {
        boolean playing = true;
        PrintBoard();
        while (playing)
        {
            System.out.println(" Enter The Row And Column
:");

            row = scan.nextInt() -1;
            col =scan.nextInt() -1;
            board[row][col]= turn;

            if (GameOver(row, col))
            {
                playing = false;
                System.out.println(" Game Over ! Player " +
turn + " Wins!");
            }
            PrintBoard();
            if (turn=='X')
                turn='O';
            else
                turn='X';
        }
    }

    public static void PrintBoard()
    {
        for (int i=0; i<3;i++)
        {
            System.out.println();
            for (int j=0; j<3; j++)
            {
                if (j==0)
                    System.out.print("# ");
                System.out.print(board[i][j] + " # ");
            }
        }
    }

```

```
        System.out.println();
    }

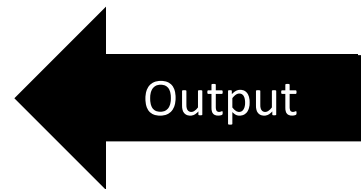
    public static boolean GameOver(int rMove, int cMove)
    {
        if (board[0][cMove]==board[1][cMove]
            && board[0][cMove]==board[2][cMove])
            return true;
        if (board[rMove][0]==board[rMove][1]
            && board[rMove][0]==board[rMove][2])
            return true;

        if (board[0][0]==board[1][1] && board
[0][0]==board[2][2]
            && board[1][1] != '_')
            return true;
        if ( board[0][2]==board[1][1] && board[0][2] ==
board[2][0]
            && board[1][1] != '_')
            return true;
        return false;
    }
}
```

OUTPUT OF THE ABOVE

PROGRAM

```
1 package tictactoe;
<terminated> TTT [Java Application] C:\Program Files\Java\jdk-13.0.2\bin\javaw.exe (08-May-2020, 12:26:24 pm)
# O # O # _ #
# X # _ # _ #
Enter The Row And Column :
1
2
# X # X # _ #
# O # O # _ #
# X # _ # _ #
Enter The Row And Column :
3
3
# X # X # _ #
# O # O # _ #
# X # _ # O #
Enter The Row And Column :
1
3
Game Over ! Player X Wins!
# X # X # X #
# O # O # _ #
# X # _ # O #
```



EXPLANATION

The above program is all about how to make a tictactoe game in java. So for this first I create a java project which name is tictactoe. After this I write `import java.util.Scanner` this is a type of library by writing this we used Scanner code in our program without this we cannot use scanner code means this code for getting value from the user.

After this I create a main class which name is tic means tictactoe `public class` tic. In this class I create two variable one is row and other is column for storing the character of the array. Now I create Scanner object which name is scan then the user type the location where we store the data these data store in this scan object.

```
public static int row,col;  
    public static Scanner scan=new Scanner(System.in);  
    public static char[][] board=new char [3][3];  
    public static char turn= 'X';
```

Now create two dimensional array in which three rows and and three columns. These array is character data type which store only character.

After this I create main method. In this method I use for loop for printing the array character.

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

After this I create three method which names is Play, printboard and gameover. The play method is void type , void type is that where we can not return anything. The printboard is also for void type and the gameover for Boolean type Boolean type is that where we can return false and true values.

```
if (GameOver(row, col))
```

```

    {
PrintBoard();
    if (turn=='X')
        turn='O';
    else
        turn='X';

```

And also use parameters. First I explain printboard method in this method I use for loop for printing the symbol of row and the other nested loop for printing the column symbol and these symbol.

Now I explain the gameover method this method is for finding the winner in the game. In this I use if condition which control the program. First two condition for perpendicular winner.

The above diagram show in direction of arrow three character are same so this character are winner.

And the other two condition for diagonal case. Which means if the three x and o are the same diagonally than that player win.

Now i explain how work these condition if the user get the location of the character where he place then these character store first in these condition these condition check the place of the character and return the character to the parameter. Now i explain the play method in this method i call the printboard method and using the while condition first i print on the screen “hello player enter the row and column” then i use variable where we store the character. Now i use it condition for finding the winner and for this we use playing =false mean in the above

method any condition are true so they print those type of character wins the game. After this i call the method printboard(); and using if condition for the turn players mean if one player type x then the other automatically turn on o.

Finally I run my above program and I got an accurate output which is in above page.

Thank You My Respectable Teacher...!