

Name : Rafi Ullah Khan  
ID : 14283  
Semester : 5th  
Department : BS(CS)  
Subject : OBJECT ORIENTED PROGRAMMING

## ASSIGNMENT

**Q1:** Create a tic toc toe game in java and explain it in details including screen shots?

**Answer: Program Code:**



```
1 import java.awt.Color;
9
10 public class TicTocToe extends JFrame {
11     int Turn=0;
12     JButton[] button= new JButton[11];
13     public void TicTocToe() {
14         for (int i=0;i<button.length;i++) {
15             if(i==9) {
16                 button[i]=new JButton("RESET");
17                 button[i].setBackground(Color.RED);
18                 add(button[i]);
19             }
20             else if(i==10){
21                 button[i]=new JButton("EXIT");
22                 button[i].setBackground(Color.RED);
23                 add(button[i]);
24             }
25             else {
26                 button[i]=new JButton();
27                 button[i].setBackground(Color.YELLOW);
28                 add (button[i]);
29             }
30         }
31         button[0].addActionListener(new ActionListener() {
32             @Override
33             public void actionPerformed(ActionEvent e) {
34                 // TODO Auto-generated method stub
35                 if(button[0].getText().equals("")) {
36                     if(Turn==0) {
37                         button[0].setText("x");
38                         if (checkResult()== true)
39                             {
40                                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
41                             }
42                         else if(isDraw()==true)
43                             {
44                                 JOptionPane.showMessageDialog(null, "Draw");
45                             }
46                     }
47                     Turn=1;
48                 }
49             }
50         });
51     }
52 }
```

```
TicToctoy.java
47     }
48     else {
49         button[0].setText ("o");
50         if (checkResult()== true)
51         {
52             JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
53         }
54         else if(isDraw()==true)
55         {
56             JOptionPane.showMessageDialog(null, "Draw");
57         }
58     //     checkResult();
59     Turn=0;
60     }
61 }
62
63 }
64 });
65 button[1].addActionListener(new ActionListener() {
66     @Override
67     public void actionPerformed(ActionEvent e) {
68         // TODO Auto-generated method stub
69         if(button[1].getText().equals("")) {
70             if(Turn==0) {
71                 button[1].setText("x");
72                 if (checkResult()== true)
73                 {
74                     JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
75                 }
76                 else if(isDraw()==true)
77                 {
78                     JOptionPane.showMessageDialog(null, "Draw");
79                 }
80                 Turn=1;
81             }
82             else {
83                 button[1].setText("o");
84                 if (checkResult()== true)
```

```
TicToctoy.java
86         {
87             JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
88         }
89         else if(isDraw()==true)
90         {
91             JOptionPane.showMessageDialog(null, "Draw");
92         }
93         Turn=0;
94     }}
95 }
96 });
97 button[2].addActionListener(new ActionListener () {
98     @Override
99     public void actionPerformed(ActionEvent e) {
100         if (button[2].getText().equals("")) {
101             if(Turn==0) {
102                 button[2].setText("x");
103                 if (checkResult()== true)
104                 {
105                     JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
106                 }
107                 else if(isDraw()==true)
108                 {
109                     JOptionPane.showMessageDialog(null, "Draw");
110                 }
111                 Turn=1;
112             }
113             else {
114                 button[2].setText("o");
115                 if (checkResult()== true)
116                 {
117                     JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
118                 }
119                 else if(isDraw()==true)
120                 {
121                     JOptionPane.showMessageDialog(null, "Draw");
122                 }
123             }
124         }
```

```
TicToctoy.java
124         Turn=0;
125     }
126 }
127 }
128 });
129 button[3].addActionListener(new ActionListener() {
130 @Override
131 public void actionPerformed(ActionEvent e) {
132     if(button[3].getText().equals("")) {
133         if(Turn==0) {
134             button[3].setText("x");
135             if (checkResult()== true)
136             {
137                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
138             }
139             else if(isDraw()==true)
140             {
141                 JOptionPane.showMessageDialog(null, "Draw");
142             }
143             Turn=1;
144         }
145         else {
146             button[3].setText("o");
147             if (checkResult()== true)
148             {
149                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
150             }
151             else if(isDraw()==true)
152             {
153                 JOptionPane.showMessageDialog(null, "Draw");
154             }
155             Turn=0 ;
156         }
157     }
158 }
159 });
160 button[4].addActionListener(new ActionListener(){
```

```
TicToctoy.java
161 @Override
162 public void actionPerformed(ActionEvent e) {
163     if(button[4].getText().equals("")) {
164         if(Turn==0) {
165             button[4].setText("x");
166             if (checkResult()== true)
167             {
168                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
169             }
170             else if(isDraw()==true)
171             {
172                 JOptionPane.showMessageDialog(null, "Draw");
173             }
174             Turn=1;
175         }
176         else {
177             button[4].setText("o");
178             if (checkResult()== true)
179             {
180                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
181             }
182             else if(isDraw()==true)
183             {
184                 JOptionPane.showMessageDialog(null, "Draw");
185             }
186             Turn=0 ;
187         }
188     }
189 }
190 });
191 button[5].addActionListener(new ActionListener(){
192 public void actionPerformed(ActionEvent e) {
193     if(button[5].getText().equals("")) {
194         if(Turn==0) {
195             button[5].setText("x");
196             if (checkResult()== true)
197             {
198                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
199             }
200             else if(isDraw()==true)
201             {
202                 JOptionPane.showMessageDialog(null, "Draw");
203             }
204             Turn=1;
205         }
206         else {
207             button[5].setText("o");
208             if (checkResult()== true)
209             {
210                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
211             }
212             else if(isDraw()==true)
213             {
214                 JOptionPane.showMessageDialog(null, "Draw");
215             }
216             Turn=0 ;
217         }
218     }
219 }
220 });
```

```
TicTocToy.java
199         }
200         else if(isDraw()==true)
201         {
202             JOptionPane.showMessageDialog(null, "Draw");
203         }
204         Turn=1;
205     }
206     else {
207         button[5].setText("o");
208         if (checkResult()== true)
209         {
210             JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
211         }
212         else if(isDraw()==true)
213         {
214             JOptionPane.showMessageDialog(null, "Draw");
215         }
216         Turn=0 ;
217     }
218 }
219 }
220 });
221 button[6].addActionListener(new ActionListener(){
222 public void actionPerformed(ActionEvent e) {
223     if(button[6].getText().equals("")) {
224         if(Turn==0) {
225             button[6].setText("x");
226             if (checkResult()== true)
227             {
228                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
229             }
230             else if(isDraw()==true)
231             {
232                 JOptionPane.showMessageDialog(null, "Draw");
233             }
234             Turn=1;
235         }
236         else {
```

```
TicTocToy.java
237         button[6].setText("o");
238         if (checkResult()== true)
239         {
240             JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
241         }
242         else if(isDraw()==true)
243         {
244             JOptionPane.showMessageDialog(null, "Draw");
245         }
246         Turn=0 ;
247     }
248 }
249 }
250 });
251 button[7].addActionListener(new ActionListener(){
252 public void actionPerformed(ActionEvent e) {
253     if(button[7].getText().equals("")) {
254         if(Turn==0) {
255             button[7].setText("x");
256             if (checkResult()== true)
257             {
258                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
259             }
260             else if(isDraw()==true)
261             {
262                 JOptionPane.showMessageDialog(null, "Draw");
263             }
264             Turn=1;
265         }
266         else {
267             button[7].setText("o");
268             if (checkResult()== true)
269             {
270                 JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
271             }
272             else if(isDraw()==true)
273             {
274                 JOptionPane.showMessageDialog(null, "Draw");
275             }
276             Turn=0 ;
277         }
278     }
279 }
280 }
281 });
```

```
TicToctoy.java
275         JOptionPane.showMessageDialog(null, "Draw");
276     }
277     Turn=0 ;
278 }
279 }
280 }
281 });
282 button[8].addActionListener(new ActionListener(){
283     public void actionPerformed(ActionEvent e) {
284         if(button[8].getText().equals("")) {
285             if(Turn==0) {
286                 button[8].setText("x");
287                 if (checkResult()== true)
288                 {
289                     JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
290                 }
291                 else if(isDraw()==true)
292                 {
293                     JOptionPane.showMessageDialog(null, "Draw");
294                 }
295                 Turn=1;
296             }
297             else {
298                 button[8].setText("o");
299                 if (checkResult()== true)
300                 {
301                     JOptionPane.showMessageDialog(null, "Player "+Turn+" Wins!");
302                 }
303                 else if(isDraw()==true)
304                 {
305                     JOptionPane.showMessageDialog(null, "Draw");
306                 }
307                 Turn=0 ;
308             }
309         }
310     }
311 });
312 button[9].addActionListener(new ActionListener(){
313     public void actionPerformed(ActionEvent e) {
```

```
TicToctoy.java
314         for (int i = 0; i < 9; i++) {
315             button[i].setText("");
316         }
317     }
318 });
319 button[10].addActionListener(new ActionListener(){
320     public void actionPerformed(ActionEvent e) {
321         System.exit(0);
322     }
323 });
324 setVisible(true);
325 setSize(700,700);
326 setLayout(new GridLayout(4,3));
327 }
328 public static void main(String[] args) {
329     // TODO Auto-generated method stub
330
331     TicToctoy obj= new TicToctoy();
332
333     obj.TicToe();
334 }
335 public Boolean isDraw() {
336
337     // Do that
338     for (int i = 0; i < 9; i++) {
339         if(button[i].getText().equals(""))
340         {
341             return false;
342         }
343     }
344     return true;
345 }
346
347 }
```

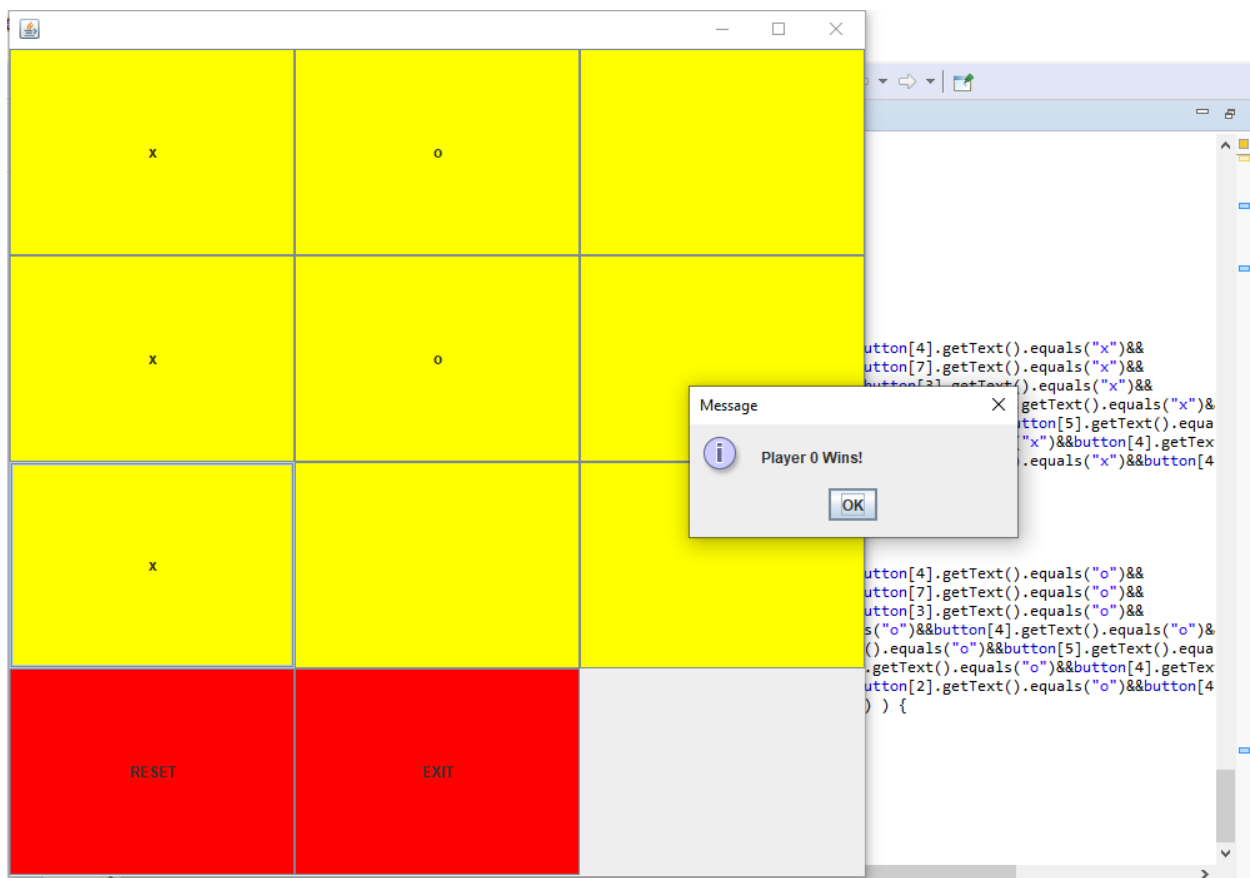
```

348 public boolean checkResult()
349 {
350     if((button[0].getText().equals("x")&&button[1].getText().equals("x")&&
351         button[2].getText().equals("x")) || (button[3].getText().equals("x")&&button[4].getText().equals("x")&&
352         button[5].getText().equals("x")) || (button[6].getText().equals("x")&&button[7].getText().equals("x")&&
353         button[8].getText().equals("x")) || (button[0].getText().equals("x")&&button[3].getText().equals("x")&&
354         button[6].getText().equals("x")) || (button[1].getText().equals("x")&&button[4].getText().equals("x")&&
355         button[7].getText().equals("x")) || (button[2].getText().equals("x")&&button[5].getText().equa
356         button[8].getText().equals("x")) || (button[0].getText().equals("x")&&button[4].getTex
357         button[8].getText().equals("x")) || (button[2].getText().equals("x")&&button[4]
358         button[6].getText().equals("x"))) {
359         return true;
360         JOptionPane.showMessageDialog(null, "X Wins");
361     }
362     else if((button[0].getText().equals("o")&&button[1].getText().equals("o")&&
363         button[2].getText().equals("o")) || (button[3].getText().equals("o")&&button[4].getText().equals("o")&&
364         button[5].getText().equals("o")) || (button[6].getText().equals("o")&&button[7].getText().equals("o")&&
365         button[8].getText().equals("o")) || (button[0].getText().equals("o")&&button[3].getText().equals("o")&&
366         button[6].getText().equals("o")) || (button[1].getText().equals("o")&&button[4].getText().equals("o")&&
367         button[7].getText().equals("o")) || (button[2].getText().equals("o")&&button[5].getText().equa
368         button[8].getText().equals("o")) || (button[0].getText().equals("o")&&button[4].getTex
369         button[8].getText().equals("o")) || (button[2].getText().equals("o")&&button[4]
370         button[6].getText().equals("o")) ) {
371         JOptionPane.showMessageDialog(null, "O Wins");
372         return true;
373     }
374     else
375         return false;
376 }
377 }
378 }

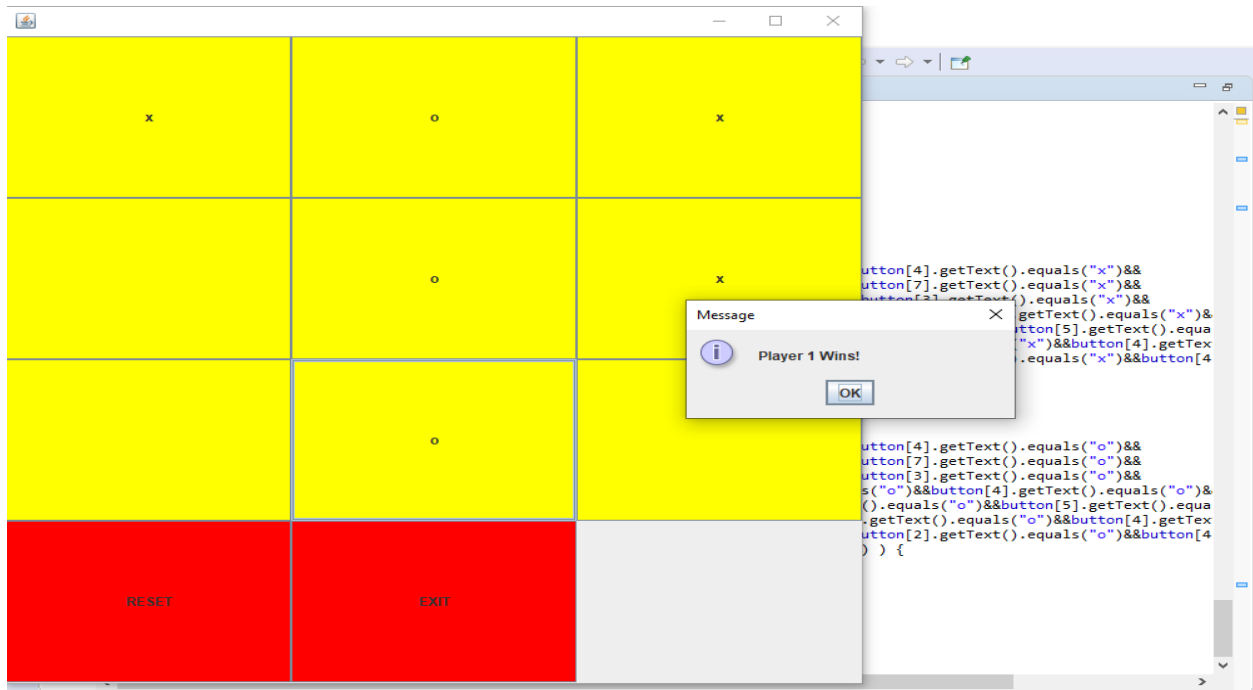
```

## OUTPUT Results:

### 1)Player 0 wins:



## 2) player 1 wins:



## 3) Match Draw:

