

Code

```
13 public partial class TicTacToeForm : Form
14 {
15     private int[,] board = new int[3, 3]; // creates board model in memory
16
17     bool turn = true; // true = player, turn false for Ai turn
18
19     int Turn_Limit = 0; // to keep track of turns
20
21
22     1 reference
23     public TicTacToeForm()
24     {
25         InitializeComponent();
26     }
27
28     0 references
29     private void makeBoard() // method to simulate board
30     {
31
32         // board spaces
33
34         board[1, 1] = 1;
35         board[1, 2] = 2;
36         board[1, 3] = 3;
37         board[2, 1] = 4;
38         board[2, 2] = 5;
39         board[2, 3] = 6;
40         board[3, 1] = 7;
41         board[3, 2] = 8;
42         board[3, 3] = 9;
43     }
```

```
44 0 references
45 private void Button_Click(object sender, EventArgs e) // method for button control and gameplay
46 {
47     Button button = (Button)sender; // so board registers buttons
48
49     if (turn)
50     {
51         button.Text = "X";
52     }
53     else
54     {
55         button.Text = "O";
56     }
57
58     turn = !turn;
59     button.Enabled = false;
60     Turn_Limit++; // counts turns every click
61
62     CheckforWinner();
63 }
64 // button method
65
66 1 reference
67 private void CheckforWinner() // to check for wins
68 {
69     bool winner = false;
70
71     // horizontal victories
72
73     if ((Op1.Text == Op2.Text) && (Op2.Text == Op3.Text) && (!Op1.Enabled))
74     {
```

```

128         }
129     }
130     }
131     }
132     else // if there is a draw
133     {
134         if (Turn_Limit == 9)
135         {
136             MessageBox.Show("Match was a draw. Try again.");
137         }
138     }
139 } // check for winner end
140
141
142
143 1 reference
144 private void endGame() // method for stopping game
145 {
146     try
147     {
148         foreach (Control c in Controls) // accounts for all buttons at once
149         {
150             Button button = (Button)c;
151             button.Enabled = false; // ends game when winner is found
152         }
153     } //end try
154     catch { }
155 }
156
157 1 reference
158 private void NewGameButton_Click(object sender, EventArgs e)
159 {
160     turn = true;
161     Turn_Limit = 0;
162
163     try
164     {
165         foreach (Control c in Controls) // accounts for all buttons at once
166         {
167             Button button = (Button)c;
168             button.Enabled = true; // ends game when winner is found
169             button.Text = "";
170         }
171     } //end try
172     catch { }
173 } //new game button end
174
175
176
177
178
179 } // for form 1
180 } // for namespace
181
182

```

```

78     else if ((Op4.Text == Op5.Text) && (Op5.Text == Op6.Text) && (!Op4.Enabled))
79     {
80         winner = true;
81     }
82     else if ((Op7.Text == Op8.Text) && (Op8.Text == Op9.Text) && (!Op7.Enabled))
83     {
84         winner = true;
85     }
86
87     // vertical victories
88
89     else if ((Op1.Text == Op4.Text) && (Op4.Text == Op7.Text) && (!Op1.Enabled))
90     {
91         winner = true;
92     }
93     else if ((Op2.Text == Op5.Text) && (Op5.Text == Op8.Text) && (!Op2.Enabled))
94     {
95         winner = true;
96     }
97     else if ((Op3.Text == Op6.Text) && (Op6.Text == Op9.Text) && (!Op3.Enabled))
98     {
99         winner = true;
100     }
101
102     // Diagonal victories
103
104     else if ((Op1.Text == Op5.Text) && (Op5.Text == Op9.Text) && (!Op1.Enabled))
105     {
106         winner = true;
107     }
108     else if ((Op3.Text == Op5.Text) && (Op5.Text == Op7.Text) && (!Op3.Enabled))
109     {
110         winner = true;
111     }

```

Test Runs





