



## Front End Technologies Week 11 Coding Assignment

**Points possible:** 70

Category	Criteria	% of Grade
<b>Functionality</b>	Does the code work?	25
<b>Organization</b>	Is the code clean and organized? Proper use of white space, syntax, and consistency are utilized. Names and comments are concise and clear.	25
<b>Creativity</b>	Student solved the problems presented in the assignment using creativity and out of the box thinking.	25
<b>Completeness</b>	All requirements of the assignment are complete.	25

**Instructions:** In VS Code, or an IDE of your choice, write the code that accomplishes the objectives listed below. Ensure that the code compiles and runs as directed. Take screenshots of the code and of the running program (make sure to get screenshots of all required functionality) and paste them in this document where instructed below. Create a new repository on GitHub for this week's assignments and push this document, with your JavaScript project code, to the repository. Add the URL for this week's repository to this document where instructed and submit this document to your instructor when complete.

### Coding Steps:

1. Using any of the tools you've worked with so far, create a game of tic-tac-toe.
  - a. A heading should say whether it is X's or O's turn and change with each move made.
  - b. Create a tic-tac-toe grid using your HTML element of choice. When a cell in the grid is clicked, an X or O should appear in that spot depending on whose turn it is.
  - c. A button should be available to clear the grid and restart the game.
  - d. When a player has won, or the board is full and the game results in a draw, a Bootstrap alert or similar Bootstrap component should appear across the screen announcing the winner.



# PROMINEO TECH

## Screenshots of Code:

```
Week11 > <> gameTicTacToe.html > html
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>Tic-Tac-Toe</title>
7      <link rel="stylesheet" href="style.css">
8  </head>
9  <body>
10     <div class="container">
11         <h1 id = "playerText">Tic-Tac-Toe</h1>
12         <h2 id = "playerTurn">It is X's turn!</h2>
13         <button id = "restartBtn">Reset</button>
14
15         <div id="gameboard">
16             <div class="box" id="0"></div>
17             <div class="box" id="1"></div>
18             <div class="box" id="2"></div>
19             <div class="box" id="3"></div>
20             <div class="box" id="4"></div>
21             <div class="box" id="5"></div>
22             <div class="box" id="6"></div>
23             <div class="box" id="7"></div>
24             <div class="box" id="8"></div>
25         </div>
26     </div>
27
28     <script src="logicTicTacToe.js"></script>
29 </body>
30 </html>
```



# PROMINEO TECH

```
Week11 > # style.css > .box
1  *{
2      padding: 0;
3      margin: 0;
4      box-sizing: border-box;
5  }
6
7  :root {
8      --pink: #ff07c9;
9      --winning-line: #642594;
10 }
11
12 body {
13     color: var(--pink);
14 }
15 h1 {
16     font-size: 45px;
17     text-transform: uppercase;
18 }
19
20 .container {
21     padding: 20px;
22     height: 100vh;
23     display: flex;
24     justify-content: center;
25     align-items: center;
26     flex-direction: column;
27     background-color: #292b68;
28 }
29
30 #gameboard {
31     width: 300px; /*300px for 3x3*/
32     display: flex;
33     flex-wrap: wrap;
34     margin-top: 40px;
35 }
36 .box {
```



# PROMINEO TECH

```
37     height: 100px;
38     width: 100px;
39     display: flex;
40     align-items: center;
41     justify-content: center;
42     color: var(--pink);
43     font-size: 120px;
44     border-right: 2px solid;
45     border-bottom: 2px solid;
46 }
47 .box:nth-child(3n) { /*For every 3rd child...*/
48     border-right: none; /*Gets rid of border right to create a more tic-tac-toe like box*/
49 }
50 .box:nth-child(6) ~ .box { /*Starting from child 7...*/
51     border-bottom: none; /*Gets rid of border bottom to create a more tic-tac-toe like box*/
52 }
53 button {
54     padding: 20px 20px;
55     border-radius: 10px;
56     background-color: var(--pink);
57     color: #333;
58     border-color: var(--pink);
59     font-size: 18px;
60     transition: 200ms transform;
61     font-weight: 600;
62 }
63 button:hover {
64     cursor: pointer;
65     transform: translateY(-2px);
66 }
```



# PROMINEO TECH

```
1 let playerText = document.getElementById('playerText');
2 let restartBtn = document.getElementById('restartBtn');
3 let boxes = Array.from(document.getElementsByClassName('box'));
4
5 let highlightWinner = getComputedStyle(document.body).getPropertyValue('--winning-line'); //highlights winning lines
6
7
8 const textO = "O";
9 const textX = "X";
10 let currentPlayer = textX;
11 let spaces = Array(9).fill(null); //makes boxes empty
12
13 const startGame = () => {
14   boxes.forEach(box => box.addEventListener('click', clickedBox));
15 }
16
17 function clickedBox(e) { //this function runs when the box is clicked
18   const id = e.target.id; //targets the ID of the box clicked
19
20   if(!spaces[id]){ //If the space is equal to null (as in, a space not yet filled)...
21     spaces[id] = currentPlayer; //fills the space with the currentPlayer
22     e.target.innerText = currentPlayer; //When you click on the target (the box), the inner text becomes the currentPlayer which...
23
24     if (currentPlayer == textX){
25       playerTurn.innerHTML = "X's Turn!";
26     }else{
27       playerTurn.innerHTML = "O's Turn!";
28     }
29
30     if(playerWON() !==false){
31       playerText.innerHTML = `${currentPlayer} has won!`;
32       let winning_blocks = playerWON();
33
34       winning_blocks.map( box => boxes[box].style.backgroundColor=highlightWinner);
35       return
36     }
37 }
```



# PROMINEO TECH

```
38     currentPlayer = currentPlayer == textX ? text0 : textX
39     //If currentPlayer == textX then change it to text0. Else, change it to textX.
40 }
41 }
42
43 const winningLines = [
44     [0,1,2],
45     [3,4,5],
46     [6,7,8],
47     [0,3,6],
48     [1,4,7],
49     [2,5,8],
50     [0,4,8],
51     [2,4,6]
52 ]
53
54 function playerWON() {
55     for (const condition of winningLines) {
56         let [a, b, c] = condition;
57
58         if(spaces[a] && (spaces[a] == spaces[b] && spaces[a] == spaces[c])){ //if space a is equal to space b and c (as in they are all
59             return [a,b,c] //user has won
60         }
61     }
62     return false //no one has won
63 }
64
65 restartBtn.addEventListener('click', restart);
66
67 function restart() {
68     spaces.fill(null);
69     boxes.forEach( box => {
70         box.innerText = '';
71         box.style.backgroundColor='';
72     })
73 }
74
75     playerText.innerHTML = 'Tic-Tac-Toe';
76     playerTurn.innerHTML = "It is X's turn!"
77
78     currentPlayer = textX;
79 }
80 startGame()
```

**Screenshots of Running Application:**

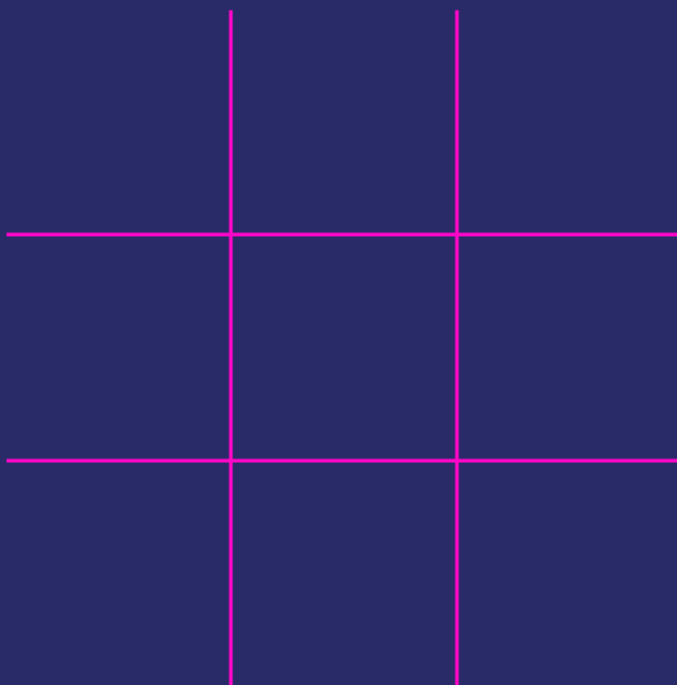


# PROMINEO TECH

## TIC-TAC-TOE

It is X's turn!

Reset





# PROMINEO TECH

## TIC-TAC-TOE

O's Turn!

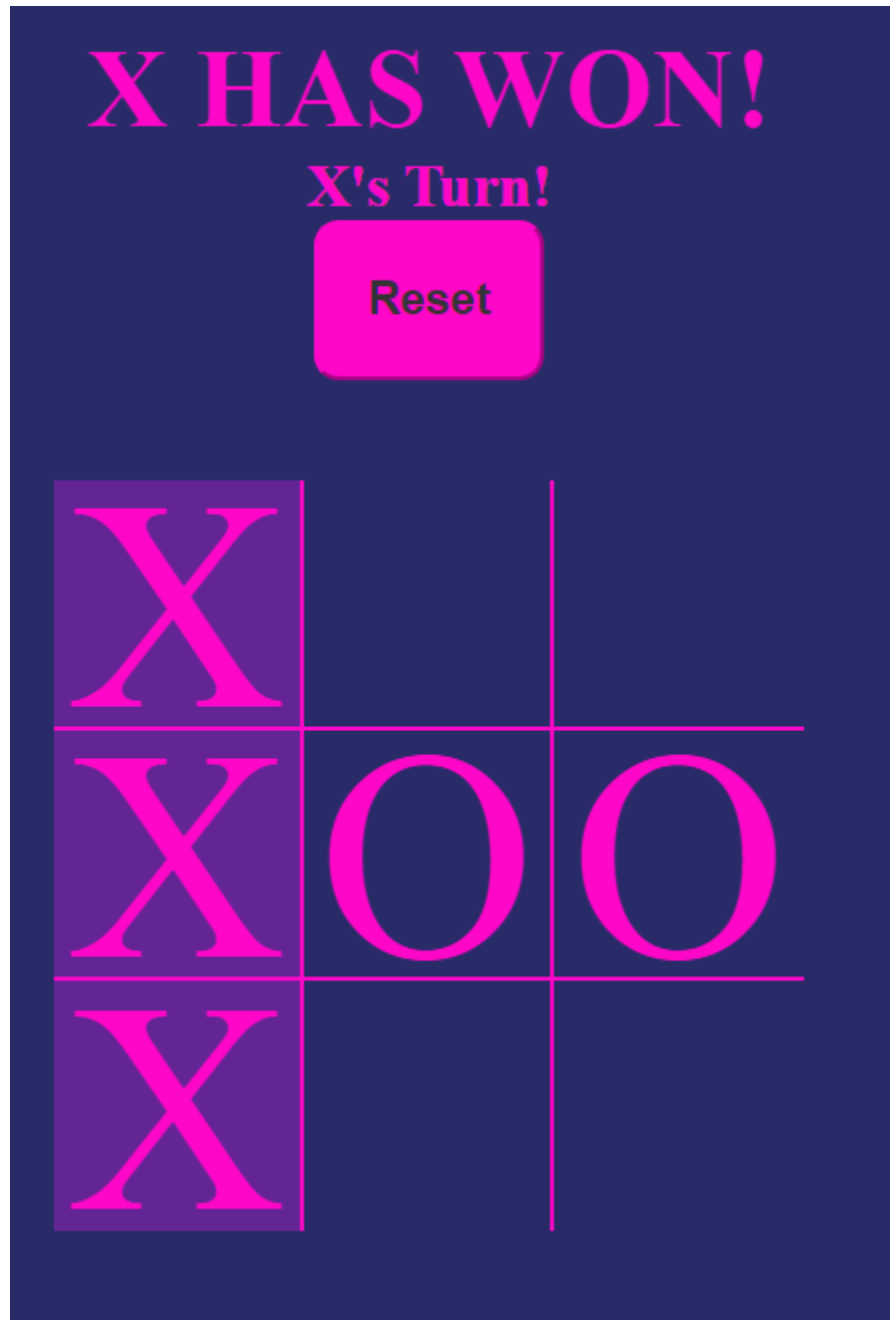
Reset

X		
	O	O
X		





# PROMINEO TECH



URL to GitHub Repository:

[https://github.com/Vshea/Week11Project\\_TicTacToe](https://github.com/Vshea/Week11Project_TicTacToe)