Project Document on Tic Tac Toe Game

Aim:

The aim of this project is to develop a Tic Tac Toe game using HTML, CSS, and JavaScript to enhance understanding of web development concepts and improve coding skills.

Title:

Tic Tac Toe Game Project

Introduction:

The Tic Tac Toe game is a classic two-player game where players take turns marking spaces in a 3x3 grid. The objective is to get three of their symbols (either 'X' or 'O') in a row, column, or diagonal. This project aims to implement the Tic Tac Toe game using web technologies, providing an interactive and enjoyable gaming experience.

Project Description:

The project involves developing a web-based Tic Tac Toe game using HTML, CSS, and JavaScript. The game interface consists of a grid layout representing the Tic Tac Toe board, with each cell acting as a playable tile. Players can click on the tiles to place their symbols ('X' or 'O') alternately. The game logic determines the winner based on the alignment of symbols in rows, columns, or diagonals.

Project Requirements:

Web browser (supporting HTML5, CSS3, and JavaScript)
Text editor or IDE for code development
Basic understanding of HTML, CSS, and JavaScript concepts
Resources:
HTML file: index.html
CSS file: style.css
JavaScript file: script.js
Image files

Approach and Methodology:

The project follows a client-side approach, utilizing HTML for structure, CSS for styling, and JavaScript for functionality. The game logic is implemented using JavaScript, including functions for handling player turns, checking win conditions, and managing game state. CSS is used to style the game interface, providing visual feedback and enhancing user experience.

CODE:

HTML CODE:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
      <nav class="navbar">
        <span class="yellow">Tic Tac Toe </span>
    </nav>
          <div class="gamecontainer">
              <div class="container">
              <div class="line"></div>
              <div class="tile"><span class="boxtext"></span></div>
              <div class="tile"><span class="boxtext"></span></div>
              <div class="tile"><span class="boxtext"></span></div>
              <div class="tile"><span class="boxtext"></span></div>
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              <div class="tile"><span class="boxtext"></span></div>
              <div class="tile"><span class="boxtext"></span></div>
              <div class="tile"><span class="boxtext"></span></div>
            </div>
            <div class="gameinfo">
```

```
       <h1>Tic Tac Toe</h1>
       <div class="controls">
        <span class="info">X Turn</span>
         <button id="reset">Reset</button>
       </div>
       <div class="image">
        <img src="excited.gif" alt="excited.gif">
       </div>
      </div>

    </div>
  <script src="script.js"></script>
</body>
</html>
```

JAVASCRIPT CODE:

```
console.log("welcome to Tic Tac Toe");
let boxes = document.querySelectorAll('.tile');
let boxtext = document.querySelectorAll('.boxtext');
let info = document.querySelector('.info');
let image = document.querySelector('.image');
let turnOf = document.getElementById("turn")

let turn = "X";
let isgameover = false;
const changeTurn = () => {
  return turn === "X" ? "O" : "X"
}

Array.from(boxes).forEach(element => {
  element.classList.add('hover');
})

const checkWin = () => {
  let wins = [
    [0, 1, 2, 0, -12, 0],
    [3, 4, 5, 0, 0, 0],
    [6, 7, 8, 0, 12, 0],
    [0, 3, 6, -12, 0, 90],
    [1, 4, 7, 0, 0, 90],
        [2, 5, 8, 12, 0, 90],
        [0, 4, 8, 0, 0, 45],
        [2, 4, 6, 0, 0, -45],
    ]

    wins.forEach(e => {
        if ((boxtext[e[0]].innerText === boxtext[e[1]].innerText) && (boxtext[e[2]].innerText
=== boxtext[e[1]].innerText) && (boxtext[e[0]].innerText !== "")) {
            boxes[e[0]].classList.add('background');
            boxes[e[1]].classList.add('background');
            boxes[e[2]].classList.add('background');
            boxtext[e[0]].style.color = "#fff";
            boxtext[e[1]].style.color = "#fff";
            boxtext[e[2]].style.color = "#fff";
            info.innerText = boxtext[e[0]].innerText + " Won the Game!";
            isgameover = true;
            image.getElementsByTagName('img')[0].style.width = "150px";
            document.querySelector('.line').style.width = "72%";
            document.querySelector('.line').style.transform = `translate(${e[3]}vw, ${e[4]}vw)
rotate(${e[5]}deg)`;
            music.play();

            Array.from(boxes).forEach(element => {
                element.classList.remove('hover');
            })
        }
    });
};

const checkTie = () => {
    let isTie = true;
    Array.from(boxtext).forEach(element => {
        if (element.innerText === "") {
            isTie = false;
        }
    });
    if (isTie && !isgameover) {
        info.innerText = "It's a Tie!";
        isgameover = true;
    }
```

```
}

Array.from(boxes).forEach(element => {
    let boxtext = element.querySelector('.boxtext');
    element.addEventListener('click', () => {
        if (!isgameover && boxtext.innerText === '') {
            boxtext.innerText = turn;
            turn = changeTurn();
            color();
            checkWin();
            checkTie(); // Check for tie condition after every move
            if (!isgameover) {
                document.getElementsByClassName("info")[0].innerText = turn + "  Turn";
            }
        }
    })

});

function color() {
    Array.from(boxes).forEach(element => {
        let boxtext = element.querySelector('.boxtext');
        if (boxtext.innerText === "X") {
            boxtext.style.color = "red";
        }
        if (boxtext.innerText === "O") {
            boxtext.style.color = "yellow";
        }
    })
};

reset.addEventListener('click', () => {
    Array.from(boxtext).forEach(element => {
        element.innerText = "";
    });
    turn = "X";
    isgameover = false;
    document.getElementsByClassName("info")[0].innerText = turn + "  Turn";
    document.querySelector('.image').getElementsByTagName('img')[0].style.width =
"0px";
```

```
    document.querySelector('.line').style.width = "0%";
    background();
});

function background() {
    let box = document.querySelectorAll('.tile');
    Array.from(box).forEach(element => {
        element.classList.remove('background');
    })
};
```

CSS CODE:

```
*{
    padding: 0;
    margin: 0;
    font-family: Arial, Helvetica, sans-serif;
    overflow: hidden;
}

.gamecontainer{
    position: relative;
    display: flex;
    align-items: center;
    justify-content: center;
    background: #212845;
    width: 100vw;
    height: calc(100vh - 65px);
}

.navbar{
    position: relative;
    padding: 0 12px;
    background-color:#181b2e;
    height: 65px;
    display: flex;
    align-items: center;
    font-size: 27px;
    font-weight: bold;
    color: rgb(255, 255, 255);
    font-family: Arial, Helvetica, sans-serif;
}
 .yellow{
    color: yellow;
}

@media only screen and (max-width:850px){
    .gamecontainer{
        align-items: center;
        justify-content: center;
        flex-direction: column;
    }
    .container{
        width: fit-content;
    }
    .gameinfo{
        margin-top: 20px;
    }
}
@media only screen and (min-width:850px){
    .gameinfo{
        margin-left: 100px;
    }
}
.container{
    position: relative;
    display: grid;
    border: 2px solid #2167ec;
    grid-template-columns: repeat(3, 12vw);
    grid-template-rows: repeat(3, 12vw);
    height: fit-content;
    box-shadow: 0px 0px 20px rgb(0, 0, 0);
    overflow: hidden;
}
 .tile{
    background-color: #01030d;
    border: 2px solid #245ec9;
    display: flex;
    align-items: center;
    justify-content: center;
```

```css
    font-size: 10vw;
    cursor: pointer;
    /* -webkit-text-stroke: 2px black; */
}

.hover:hover{
    background-color: rgba(33, 103, 236,0.1);

}
.boxtext{
    font-weight: bold;
    color: white;
}
.gameinfo{
    position: relative;
    display: flex;
    align-items: center;
    flex-direction: column;
    font-size: 2.5vw;
    color: white;
}
.controls{
    display: flex;
    flex-direction: column;
    align-items: center;
    justify-content: center;
    padding: 10px;
}
#reset{
    width: fit-content;
    margin: 20px;
    padding: 5px;
    width: 100px;
    background-color: yellow;
    border-radius: 25px;
    border: none;
    font-size: 1.5rem;
    font-weight: bold;
    cursor: pointer;
}
```

```
.image{
    width: 50%;
    display: flex  ;
    align-items: center;
    justify-content: center;
}
.image img{
    width: 0;
    transition: width 1s ease-in-out;
}
.line{
    background-color: rgb(255, 0, 0);
    width: 0%;
    transition: width 0.5s ease-in-out;
    position: absolute;
    height: 0.2vw;
    top: 49%;
    left: 14%;
    overflow:visible;
}
.background{
    background: #26d074;
}
.gameinfo h1{
    position: relative;
}
.gameinfo h1::after{
    content: "";
    position: absolute;
     bottom: 0%;
    left: 25%;
    width: 50%;
    height: 2px;
    background-color: #2167ec;
}
```

Testing:

The Tic Tac Toe game has been tested extensively to ensure smooth functionality and correct implementation of game rules. Testing includes:

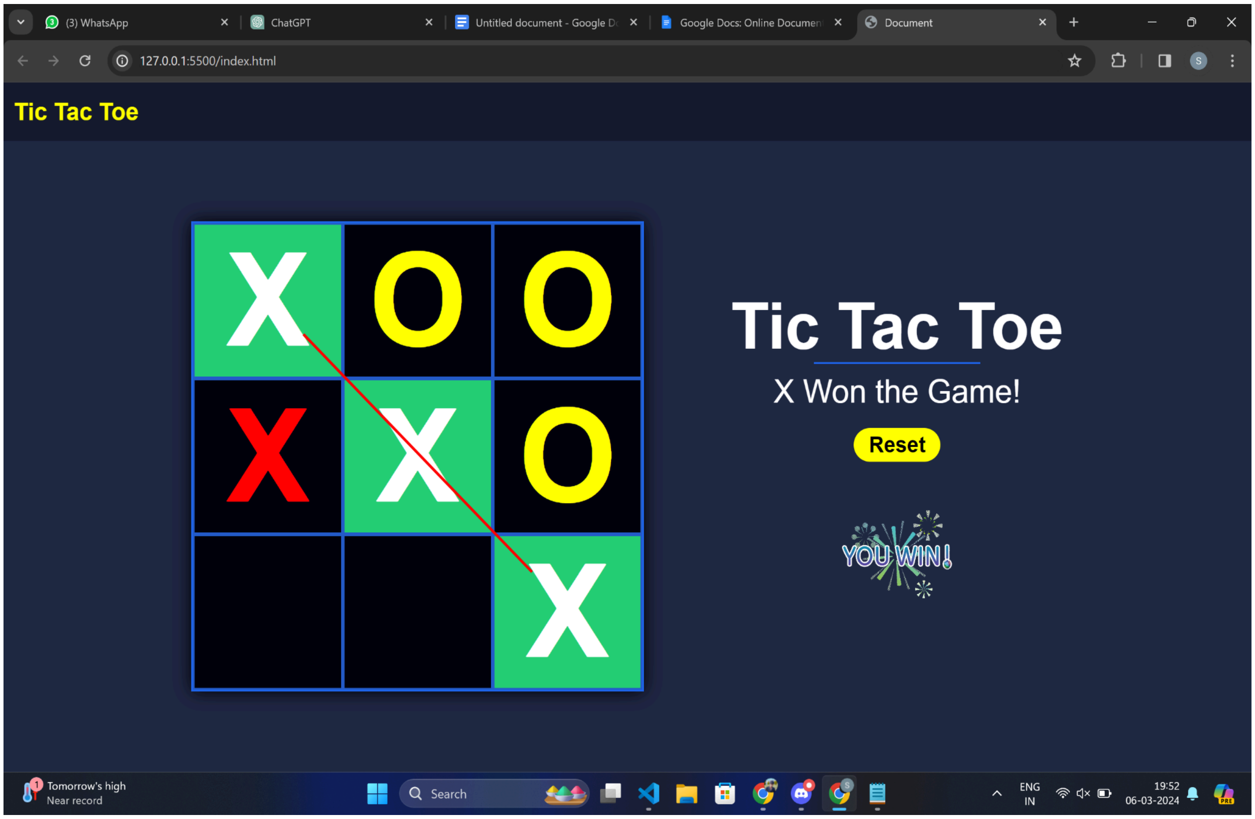
Checking player interactions (click events on tiles)
Verifying win conditions (alignment of symbols)
Testing tie condition
Cross-browser compatibility testing
Results:
The Tic Tac Toe game successfully provides an interactive gaming experience, allowing two players to compete against each other. The game accurately determines the winner based on the alignment of symbols and handles tie conditions appropriately. The user interface is responsive and visually appealing, enhancing the overall gaming experience.

References:

GeeksforGeeks: geeksforgeeks.org
JavaTPoint: javatpoint.com
W3Schools: w3schools.com

Output:

The output of the project is a fully functional web-based Tic Tac Toe game accessible via a web browser. Players can enjoy playing the game on various devices, including desktops, laptops, tablets, and smartphones.



Tic Tac Toe

X	O	O
X	X	O
		X

Tic Tac Toe

X Won the Game!

Reset

YOU WIN!

(3) WhatsApp
ChatGPT
Untitled document - Google D
Google Docs: Online Documen
Document
127.0.0.1:5500/index.html
Tomorrow's high
Near record
Search
ENG
IN
19:52
06-03-2024