

NoShack Solutions

Task 4 – Documentation

Task description

The fourth task of the internship focuses on testing the learning and skills in JavaScript, and I developed a simple Tic-Tac-Toe game using JS for the same. The Tic-Tac-Toe project is a simple implementation of the classic game using HTML, CSS, and JavaScript. This project is designed to understand the basics of JavaScript, including variables, data types, operators, control structures, and simple scripting to manipulate data and perform basic operations.

Objective

The primary objective of this project is to gain a hands-on experience in creating an interactive web application using foundational web technologies. By completing this project, I have improved my practical skills in web development and bettered my understanding of how JavaScript can be used to add interactivity to web pages.

Features

- Single-system double-player mode: The game is in double-player mode, where both players can play from the same system.
- Interactive Game Board: A 3x3 grid where players can click to place their marks (X or O).
- Turn-Based Play: Alternates turns between two players.
- Win Detection: Checks for win conditions (rows, columns, diagonals) and displays the winner.
- Draw Detection: Detects if the game is a draw when all cells are filled without a winner.
- Reset Functionality: Allows players to reset the game board and start a new game.

Inferences

1. Understanding the use of **variables** to store data and the different data types (strings, numbers, booleans, arrays, objects) in JavaScript.
2. Learning how to use arithmetic, comparison, and logical **operators** to perform various operations and make decisions.
3. Utilizing **control structures** like if-else to control the flow of the game logic based on different conditions.
4. Adding **event listeners** to HTML elements to respond to user actions, such as clicking on a cell in the game board.
5. Using JavaScript to manipulate the **Document Object Model (DOM)**, allowing dynamic updates to the HTML and CSS based on game state.
6. Writing **functions** to encapsulate reusable code blocks, making the code more organized and modular.

Challenges faced

Some of the major challenges I personally encountered while developing the game were:

1. **JavaScript Syntax:** Initially, understanding the syntax and semantics of JavaScript, especially the concept of variables and data types, was challenging.
2. **Event Handling:** Grasping how to effectively use event listeners to interact with HTML elements and respond to user actions required practice.
3. **DOM Manipulation:** Manipulating the DOM to dynamically update the game board and reset the game state was a new concept that took time to master.
4. **Game Flow Management:** Ensuring that the game correctly alternated turns between players and handled invalid moves (e.g., clicking on an already occupied cell) required careful planning and testing.

Resources/Citations

- <https://chatgpt.com/>
 - <https://javascript.info/>
 - https://www.w3schools.com/jsref/dom_obj_document.asp
 - https://www.w3schools.com/js/js_object_property.asp
 - <https://getcssscan.com/css-buttons-examples>
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