

Array Methods, DOM Manipulation, and Form Validation

In this assignment, we will explore JavaScript array methods, DOM manipulation, and AJAX to strengthen our understanding of these concepts. Let's dive into each topic and complete the tasks step by step:

Part 1: JavaScript Array Methods**Task 1: Array Manipulation**

Write a program that performs the following operations on an array:

1. Create an array of numbers.
2. Use the array methods to add, remove, or modify elements in the array.
3. Display the updated array in the console after each operation.

Task 2: Array Filtering and Transformation

Write a program that performs the following operations on an array of objects:

1. Create an array of objects with different properties.
2. Use array methods like filter, map, or reduce to filter and transform the array based on specific conditions.
3. Display the updated array in the console after each operation.

Part 2: DOM Manipulation**Task 3: DOM Element Creation and Manipulation**

Write a program that creates, modifies, and appends DOM elements dynamically using JavaScript. Perform the following tasks:

1. Create an HTML page with a container element.
2. Use JavaScript to create new elements, modify their attributes and content, and append them to the container element.

3. Style the elements using CSS classes and apply event listeners for interactivity.

Task 4: Form Validation

Enhance the previous program to include form validation using JavaScript. Perform the following tasks:

1. Create an HTML form with input fields and a submit button.
2. Use JavaScript to validate the form inputs based on specific conditions (e.g., required fields, email format).
3. Display error messages for invalid inputs and prevent form submission if any fields are invalid.

For each task, create separate JavaScript files or functions to encapsulate the functionality. Use HTML, CSS, and JavaScript to build interactive and visually appealing applications.

Remember to break down the tasks into smaller steps and test your code frequently. Feel free to explore additional array methods and DOM manipulation techniques.

If you have any questions or need assistance, don't hesitate to ask. Good luck, and enjoy working on these assignments!