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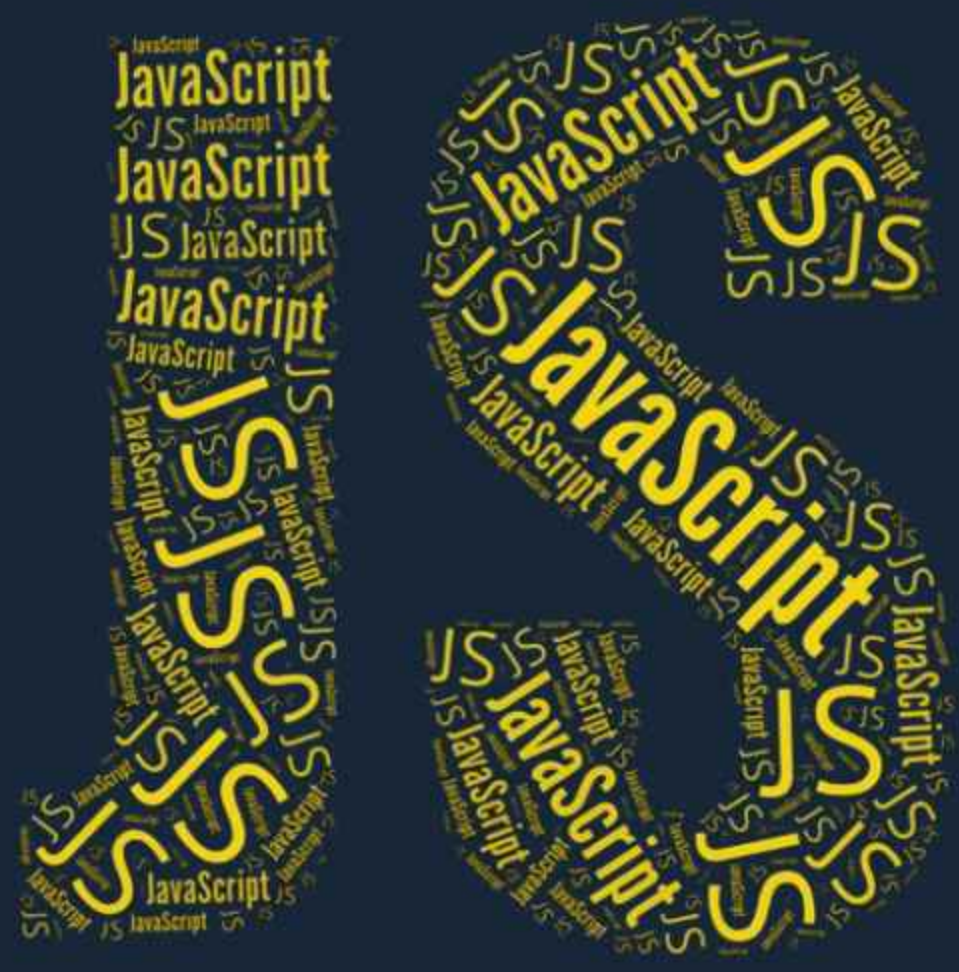
DOM

JAVASCRIPT



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WHAT IS THE DOM ?

The DOM is essentially a blueprint of a webpage created by the browser when a web page is loaded.

This blueprint is organized like a family tree and is made up of elements like tags and text from the HTML document.

Every part of the webpage is represented as an object in this tree, and these objects can be manipulated using JavaScript.

This manipulation allows for dynamic changes to the webpage without needing to reload it.

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HOW DOES IT WORKS?

The DOM model represents the document as a tree structure where each node is an object representing a part of the document.

EXAMPLE OF THE DOM IN ACTION

```html
<!DOCTYPE html>
<html>
<head>
    <title>My Simple Page</title>
</head>
<body>
    <h1 id="header">Welcome to My
Website</h1>
    <p>This is a sample paragraph.</p>
    <button id="changeText">Change the
Header</button>
</body>
</html>
```

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HERE'S HOW THE DOM MIGHT LOOK FOR THIS WEBPAGE:

- **Window**
  - **Document**
    - **HTML**
      - **HEAD**
        - TITLE: "My Simple Page"
      - **BODY**
        - H1: "Welcome to My Website"
        - P: "This is a sample paragraph."
        - BUTTON: "Change the Header"

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ACCESSING ELEMENTS

JavaScript provides several methods to select and manipulate DOM elements. Here are some of the most commonly used methods:

1. getElementById
2. getElementsByClassName
3. getElementsByTagName
4. querySelector
5. querySelectorAll

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getElementById

- This method selects an element by its ID.
- It returns the first (and should be the only) element with the specified ID.
- **Example**: document.getElementById("header") would select the element with the ID "header".

```
//HTML
<div id="uniqueElement">Hello, World!</div>

//JS
var element = document.getElementById("uniqueElement");
console.log(element.textContent);  // Outputs: Hello,
World!
```

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getElementsByClassName

- This method selects all elements that have a specific class name.
- It returns a live HTMLCollection of found elements.
- Example: document.getElementsByClassNam e("nav-item") would select all elements with the class "nav-item".

```
//HTML
<div class="sharedClass">First</div>
<div class="sharedClass">Second</div>

//JS
var elements =
document.getElementsByClassName("sharedClass");
console.log(elements[0].textContent);  // Outputs: First
console.log(elements[1].textContent);  // Outputs: Second
```

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getElementsByTagName

- This method selects elements by their tag name.
- It returns a live HTMLCollection of elements with the given tag name.
- Example: document.getElementsByTagName("div") would select all elements in the document.

```
//HTML
<p>Paragraph One</p>
<p>Paragraph Two</p>

//JS
var elements = document.getElementsByTagName("p");
console.log(elements[0].textContent);  // Outputs:
Paragraph One
console.log(elements[1].textContent);  // Outputs:
Paragraph Two
```

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querySelector

- This method returns the first element that matches a specified CSS selector(s).
- Example: document.querySelector(".menu") would select the first element with the class "menu".

```
//HTML
<div class="example">Example</div>

//JS
var element = document.querySelector(".example");
console.log(element.textContent);  // Outputs: Example
```

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querySelectorAll

- This method returns all elements in the document that match a specified CSS selector(s).
- Unlike getElementsByClassName and getElementsByTagName, querySelectorAll returns a static NodeList representing the list of found elements.
- Example: document.querySelectorAll("p.intro") would select all <p> elements with the class "intro".

```
//HTML
<span class="findMe">Find Me 1</span>
<span class="findMe">Find Me 2</span>

//JS
var elements = document.querySelectorAll(".findMe");
elements.forEach((el) => console.log(el.textContent));
// Outputs: Find Me 1
// Outputs: Find Me 2
```

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