

**Course  
&  
Test Series**

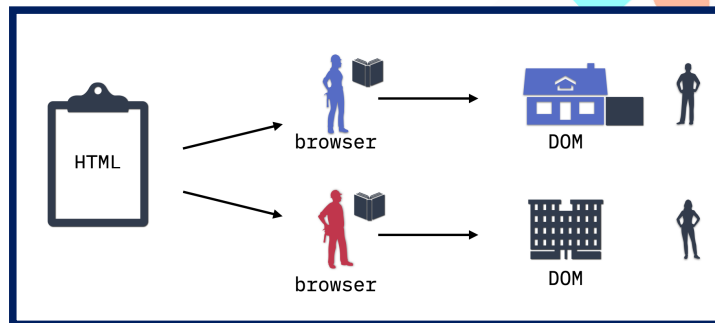
**Introduction to 'JavaScript' Language**

**Document Object Model DOM and Validations**

**Module 2 - Accessing & Modifying DOM Elements**

**Accessing & Modifying DOM Elements in JavaScript**

In JavaScript, DOM (Document Object Model) is a representation of your HTML page that can be accessed and modified using JavaScript. It allows you to dynamically change content, structure, and styling.



**Accessing DOM Elements**

You can access HTML elements using several DOM methods:

| Method                 | Description                                       | Example                            |
|------------------------|---|------------------------------------|
| getElementById()       | Selects one element by its ID                     | document.getElementById("title")   |
| getElementsByName()    | Selects all elements with a class name            | document.getElementsByName("item") |
| getElementsByTagName() | Selects all elements by tag name                  | document.getElementsByTagName("p") |
| querySelector()        | Selects the first element matching a CSS selector | document.querySelector(".btn")     |
| querySelectorAll()     | Selects all elements matching a CSS selector      | document.querySelectorAll(".btn")  |

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**Why we access DOM Elements?**

- To read content from the web page (e.g., get input values or text).
- To select specific elements using their ID, class, tag, or CSS selectors.
- To gather data for processing or validation (like form data).
- To analyze structure or check conditions (e.g., is a button visible?).

**Why we modify DOM Elements?**

- To change content dynamically (text, images, HTML, etc.).
- To update styles or apply CSS changes (e.g., highlight an error).
- To add animations or transitions using JavaScript.
- To respond to user actions (e.g., clicking a button updates part of the page).
- To create interactive elements like modals, dropdowns, tabs, etc.
- To insert or remove elements from the page (e.g., add a new item to a list).
- To update the UI without reloading the page (like in single-page apps).

**Modifying DOM Elements**

| Task                | Property / Method   | Example                             |
|---------------------|---------------------|-------------------------------------|
| Change text         | .textContent        | element.textContent = "New Text"    |
| Change HTML content | .innerHTML          | element.innerHTML = "<b>Bold</b>"   |
| Change CSS style    | .style              | element.style.color = "blue"        |
| Change attribute    | .setAttribute()     | element.setAttribute("href", "url") |
| Get attribute       | .getAttribute()     | element.getAttribute("href")        |
| Add a class         | .classList.add()    | element.classList.add("active")     |
| Remove a class      | .classList.remove() | element.classList.remove("active")  |
| Toggle a class      | .classList.toggle() | element.classList.toggle("active")  |

**Case 1: getElementById()**

```
<!DOCTYPE html>
<html>
<body>
  <h1 id="title">Hello</h1>
  <script>
    const element =
document.getElementById("title");
    element.textContent = "Changed using ID!";
```

**Changed using ID!**

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```
</script>  
</body>  
</html>
```

Case 2: getElementsByClassName()

```
<!DOCTYPE html>  
<html>  
<body>  
<p class="item">Item 1</p>  
<p class="item">Item 2</p>  
<script>  
  const elements =  
  document.getElementsByClassName("item");  
  elements[0].textContent = "First item changed!";  
</script>  
</body>  
</html>
```

First item changed!

Item 2

Case 3: getElementsByTagName()

```
<!DOCTYPE html>  
<html>  
<body>  
<p>Paragraph 1</p>  
<p>Paragraph 2</p>  
<script>  
  const paragraphs =  
  document.getElementsByTagName("p");  
  paragraphs[1].textContent = "Second  
  paragraph changed!";  
</script>  
</body>  
</html>
```

Paragraph 1

Second paragraph changed!

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