

DOM

What is DOM?

1. **DOM** stands for **Document Object Model**.
2. It is a **tree-like structure** created by the browser when HTML is loaded.
3. It allows JavaScript to **read, access, or change** any part of the web page.

Example :

```
<html>
  <body>
    <h1>Hello</h1>
    <p>This is a paragraph.</p>
  </body>
</html>
```

DOM Tree:

```
Document
├── html
│   ├── head
│   │   └── title → "Page"
│   └── body
│       ├── h1 → "Hello"
│       └── p → "This is a
paragraph"
```

In JavaScript, you can use DOM to:

- Access elements
- Change content
- Add/remove elements
- Handle events (click, submit, etc.)

Accessing Elements :

```
getElementById()
getElementsByClassName()
getElementsByTagName()
querySelector()
querySelectorAll()
```

Summary Table:

Method	Selector Type	Return Type	Use for
<code>getElementById()</code>	<code>#id</code>	Element	Single element by ID
<code>getElementsByName()</code>	<code>.class</code>	HTMLCollection	All elements with that class
<code>getElementsByTagName()</code>	<code>tag</code>	HTMLCollection	All elements with tag name
<code>querySelector()</code>	CSS selector	Element	First matching element
<code>querySelectorAll()</code>	CSS selector	NodeList	All matching elements

`getElementById()`-(**#id**) :

Example 1: Change Text

```
<h1 id="title">Welcome!</h1>
<button onclick="changeText()">Click Me</button>

<script>
  function changeText() {
    const element = document.getElementById("title");
    element.innerText = "Text Changed!";
  }
</script>
```

Example 2: Hide an Element

```
<div id="box" style="width:100px; height:100px;
background:blue;"></div>
<button onclick="hideBox()">Hide Box</button>

<script>
  function hideBox() {
    document.getElementById("box").style.display = "none";
  }
</script>
```

Example 3: Take Value from Input Field

```
<input id="nameInput" type="text" placeholder="Enter your name">
<button onclick="showName()">Submit</button>
<p id="output"></p>

<script>
  function showName() {
    const name = document.getElementById("nameInput").value;
    document.getElementById("output").innerText = `Hello,
${name}!`;
  }
</script>
```

Example 4: Toggle Show/Hide Text

```
<p id="info">This is some info text.</p>
<button onclick="toggleText()">Toggle</button>

<script>
  let visible = true;
  function toggleText() {
    const element = document.getElementById("info");
    visible = !visible;
    element.style.display = visible ? "block" : "none";
  }
</script>
```

Example 5: Set Background Color

```
<body id="bodyElement">
  <button onclick="setBackground()">Change Background</button>

  <script>
    function setBackground() {
      document.getElementById("bodyElement").style.backgroundColor
= "lightgreen";
    }
  </script>
</body>
```

