**Lecture-09: DOM Manipulation**

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## Overview:

In this lecture, we will explore DOM (Document Object Model) manipulation in JavaScript. The DOM is a representation of the HTML document, enabling JavaScript to interact and modify the content of a webpage. We will cover various methods and functionalities provided by the DOM to manipulate and control HTML elements.

### Keypoints of this Lecture:

1. Document Methods:

document.getElementById, document.getElementsByClassName, document.getElementsByTagName

1. ClassList.add by JavaScript
2. Create tags dynamically
3. Data Insertion / Removal
4. Query Selector
5. Date
6. String methods

## DOM MANIPULATION:

DOM enables JavaScript to interact with HTML elements and manipulate them dynamically. It represents the HTML document as a tree-like structure, where each element is a node.

### Accessing Elements:

**`document.getElementById("elementID")`:** Retrieves an element by its unique ID.

**`document.getElementsByClassName("className")`**: Retrieves elements by their class name.

**`document.getElementsByTagName("tagName")`**: Retrieves elements by their tag name.

### ClassList.add by JavaScript:

The **`classList.add()`** method is used to add a class to an HTML element.

### Create Tags Dynamically:

You can create HTML elements dynamically using the **`document.createElement("tagName")`** method. After creating an element, you can set its content using the innerText property and append it to another element using **`appendChild()`** method.

### Replace Child:

The **`replaceChild()`** method replaces an existing child node with a new one.

### Query Selector:

**`querySelector`** and **`querySelectorAll`** are used to select elements based on CSS selectors, allowing you to style or manipulate multiple elements at once.

### Date:

JavaScript's **`Date`** class allows you to work with dates and times. You can create a new Date object and access various methods like **`getDate()`, `getDay()`,** etc.

### String Methods:

Five commonly used string methods are **`length`**, **`indexOf()`, `replace()`, `replaceAll()`,** and **`toLowerCase()`.**

Understanding DOM manipulation and its methods will enhance your ability to build dynamic and interactive web applications.