

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`
2. `classList.add` by JavaScript
3. Create tags dynamically
4. Data Insertion / Removal
5. Query Selector
6. Date
7. 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.

Example:

```
javascript Copy code  
  
var element = document.getElementById("myElement");
```

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

Example:

```
javascript Copy code  
  
var elements = document.getElementsByClassName("myClass");
```

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

Example:

```
javascript Copy code  
  
var elements = document.getElementsByTagName("div");
```

classList.add by JavaScript:

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

Example:

```
javascript Copy code  
  
var element = document.getElementById("myElement");  
element.classList.add("newClass");
```

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.

Example:

```
javascript Copy code  
  
var newElement = document.createElement("p");  
newElement.innerText = "This is a dynamically created paragraph.";  
document.body.appendChild(newElement);
```

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.

Example:

```
javascript Copy code  
  
var elements = document.querySelectorAll(".myClass");
```

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.


Example:

```
javascript Copy code  
  
var currentDate = new Date();  
var day = currentDate.getDate();
```

String Methods:

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

Example:

```
javascript  Copy code

var str = "Hello, World!";
var length = str.length;
var index = str.indexOf("World");
var replaced = str.replace("World", "Universe");
var lowercase = str.toLowerCase();
```

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