
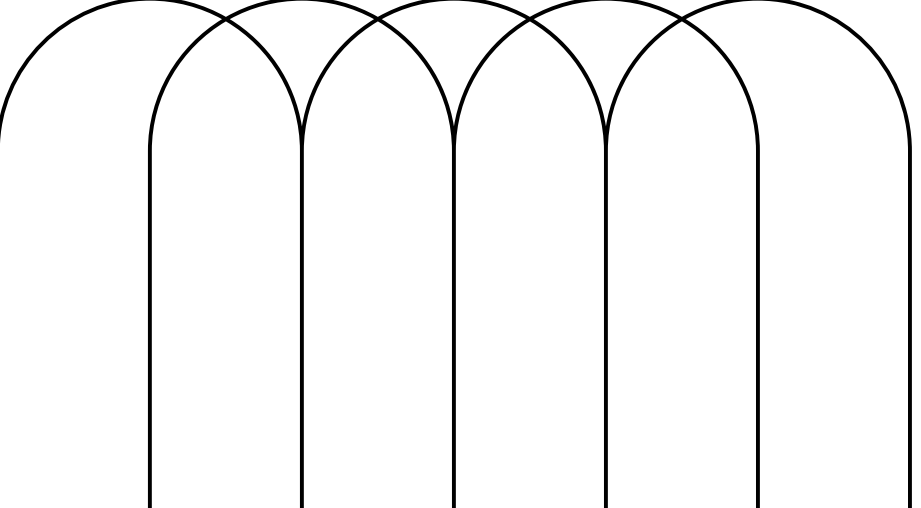


Javascript Document Object Model (DOM)



Document Object Model

The Document Object Model (DOM) is a programming interface provided by browsers. It represents the structure of an HTML document as a tree of objects, where each node is part of the page.

DOM Representation of nodes

```
Document
├── html
│   ├── body
│       ├── h1
│       └── p
```

The document Object

In JavaScript, the document object is the root of the DOM. It gives you entry into the entire web page and allows you to interact with any element on it.

```
console.log(document.title); // Logs the title of the web page
console.log(document.body); // Returns the <body> element
console.log(document.URL); // Logs the current page URL
```

Document Object Model

Selecting Elements

- **getElementById():** Selects first element with the specified ID.

```
const title = document.getElementById('main-title');
```

- **getElementsByClassName():** Selects all elements with the specified class.

```
const menuItems = document.getElementsByClassName('menu-item');
```

- **getElementsByTagName() :** Selects all elements by specified tag name.

```
const paragraphs = document.getElementsByTagName('p');
```

- **querySelector() :** Returns the first matching element using a CSS selector.

```
const mainHeading = document.querySelector('h1');
```

Document Object Model

Selecting Elements

- **querySelectorAll():** Returns all matching elements as a NodeList.

```
const allButtons = document.querySelectorAll('button');
```

Manipulating DOM Elements

- **Changing Text and HTML Content**

```
header.textContent = 'Welcome!';    // Changes only the text
header.innerHTML = '<em>Welcome!</em>'; // Allows HTML formatting
```

- **Changing Attributes**

```
document.querySelector('img').setAttribute('src', 'new-image.jpg');
```

Document Object Model

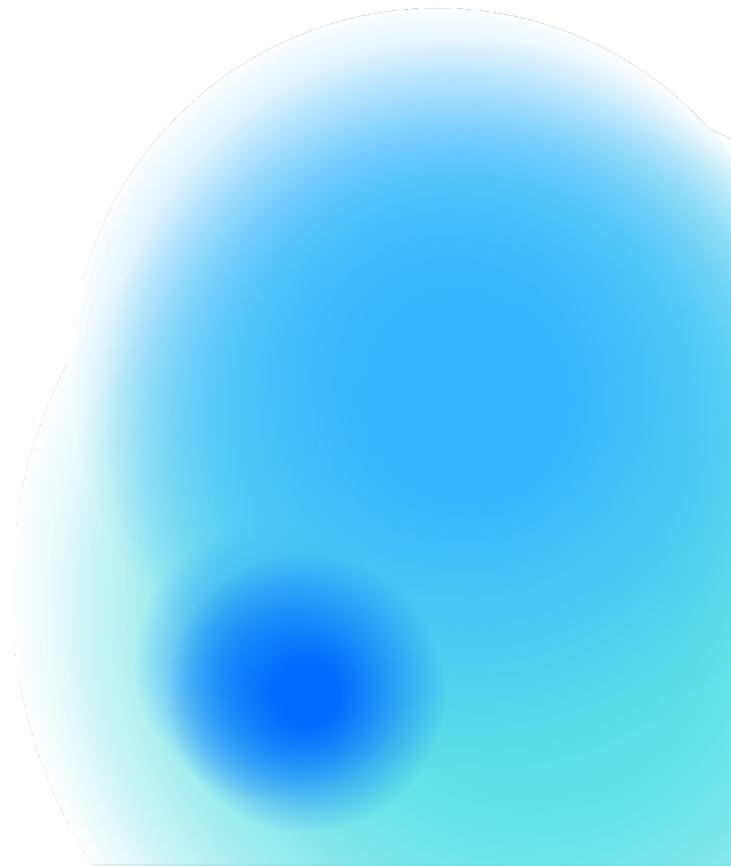
Manipulating DOM Elements

- Changing Styles

```
header.style.color = 'blue';  
header.style.backgroundColor = 'yellow';
```

- Managing Classes

```
header.classList.add('highlight');  
header.classList.remove('highlight');  
header.classList.toggle('active');
```



Document Object Model

Creating & Inserting Elements

- Insert to the body

```
const newDiv = document.createElement('div');  
newDiv.textContent = 'This is a new div';  
document.body.appendChild(newDiv); // Adds it to the end of the <body>
```

- Insert at a specific position

```
const container = document.querySelector('.container');  
container.insertBefore(newDiv, container.firstChild);
```



Document Object Model

Removing and Replacing Elements

- Remove an element

```
const oldElement = document.getElementById('old');  
oldElement.remove();
```

- Replace an element

```
const newElement = document.createElement('p');  
newElement.textContent = 'Replacement content';  
oldElement.replaceWith(newElement);
```

THANK YOU

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