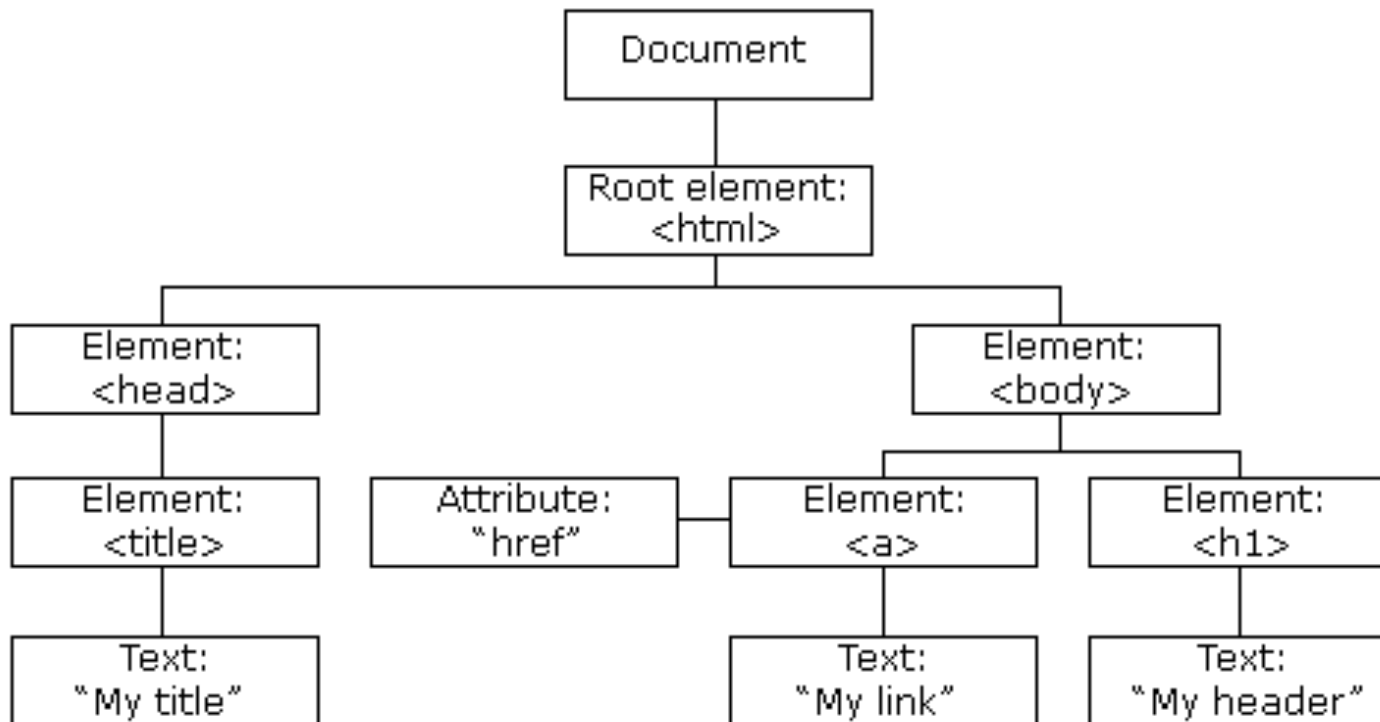# JAVASCRIPT HTML DOM

The HTML DOM Tree of Objects

ALL ELEMENTS ARE OBJECTS

- **JavaScript <mark>can change</mark> all the HTML elements in the page**
- **JavaScript <mark>can change</mark> all the HTML attributes in the page**
- **JavaScript <mark>can change</mark> all the CSS styles in the page**

- **JavaScript <mark>can remove</mark> existing HTML elements and attributes**
- **JavaScript <mark>can add new</mark> HTML elements and attributes**

- **JavaScript <mark>can react</mark> to all existing HTML <mark>events</mark> in the page**
- **JavaScript <mark>can create new</mark> HTML <mark>events</mark> in the page**

DOM DOCUMENT

```
<html>
<body>
<p id="demo"></p>

<script>
document.getElementById("demo").innerHTML = "Hello World!";
</script>

</body>
</html>
```

FINDING HTML ELEMENTS

document.getElementById(*id*)	Find an element by element id
document.getElementsByTagName(*name*)	Find elements by tag name
document.getElementsByClassName(*name*)	Find elements by class name

```
document.getElementById("demo").innerHTML = "Hello World!";

var x = document.getElementsByTagName("p");
x[0]. innerHTML = "Hello World!";
```

CHANGING HTML ELEMENTS

element.innerHTML = *new html content*	Change the inner HTML of an element
element.attribute = new value	Change the attribute value of an HTML element
element.setAttribute*(attribute, value)*	Change the attribute value of an HTML element
element.style.*property = new style*	Change the style of an HTML element

```
<img id="myImage" src="smiley.gif">
<p id="p2" style="color: red;" >Hello World!</p>
<script>
document.getElementById("myImage").src = "landscape.jpg";
document.getElementById("p2").style.color = "blue";
</script>
```

JavaScript HTML DOM

CREATING HTML ELEMENTS

EXEMPLO

```javascript
// create a <p> tag element
var paragraph = document.createElement("p");
paragraph.id = 'p2';
paragraph.style = 'color: red;';
paragraph.innerHTML = 'Hello World!';

// add it to the HTML document
var div = document.getElementById("div1");
div.appendChild(paragraph);

// remove it
div.removeChild(div.lastElementChild);
```

DOM EVENTS

```
<button id="demo" onclick="displayDate()">The time is?</button>

<script>
function displayDate() {
    var x=new Date();
    document.getElementById("demo").innerHTML = x.getHours() +
":" + x.getMinutes()   ;
}
</script>

Enter your name: <input type="text" id="fname"
onchange="toUpperCase()">

<script>
function toUpperCase() {
    var x = document.getElementById("fname");
    x.value = x.value.toUpperCase();
}
</script>
```

JavaScript HTML DOM

JS FORM VALIDATION

```
<form name="myForm" action="/action_page_post.php"
onsubmit="return validateForm()" method="post">

Name: <input type="text" name="fname" value="">

<input type="submit" value="Submit">

</form>

<script>
function validateForm() {
    var x = document.forms["myForm"]["fname"].value;
    if (x == "") {
        alert("Name must be filled out");
        return false;
    }
}
</script>
```

WINDOW METHODS

- window.open() - open a new window
- window.close() - close the current window
- window.moveTo() -move the current window
- window.resizeTo() -resize the current window

```
var jsWindow = window.open(
    'https://www.w3schools.com/js',
    '_blank',
    'height=600,width=600');


jsWindow.close();
```

WINDOW LOCATION ASSIGN

The **window.location.assign()** method loads a new document.

```html
<html>
<head>
<script>
function newDoc() {
    window.location.assign("https://www.w3schools.com")
    //window.location.href = 'https://www.w3schools.com';
}
</script>
</head>
<body>

<input type="button" value="Load new document" onclick="newDoc()">

</body>
</html>
```

JavaScript HTML DOM

WINDOW HISTORY

```html
<html>
<head>
<script>
function goBack() {
    window.history.back()
}
function goForward() {
    window.history.forward()
}
</script>
</head>
<body>

<input type="button" value="Back" onclick="goBack()">
<input type="button" value="Forward" onclick="goForward()">
</body>
</html>
```

WINDOW ALERT BOX

```
<!DOCTYPE html>
<html>
<head>
</head>
<body>
<button onclick="myFunction()">Try it</button>

<script>
function myFunction() {
    window.alert("Alert!")
}
</script>

</body>
</html>
```

WINDOW CONFIRM BOX

```
<button onclick="myFunction()">Try it</button>

<p id="demo"></p>

<script>
function myFunction() {
    var txt;
    if (window.confirm("Press a button!") == true) {
        txt = "You pressed OK!";
    } else {
        txt = "You pressed Cancel!";
    }
    document.getElementById("demo").innerHTML = txt;
}
</script>
```

WINDOW PROMPT

```
<button onclick="myFunction()">Try it</button>

<p id="demo"></p>

<script>
function myFunction() {
    var txt;
    var person = window.prompt("Please enter your name:", "Harry
Potter");
    if (person == null || person == "") {
        txt = "User cancelled the prompt.";
    } else {
        txt = "Hello " + person + "! How are you today?";
    }
    document.getElementById("demo").innerHTML = txt;
}
</script>
```

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WINDOW TIMING EVENTS

window.setTimeout(*function*, *milliseconds*);

```html
<html>
<body>
    <p>JavaScript setTimeout Demo</p>
    <button onclick="showAlert();">Show</button>
    <button onclick="cancelAlert();">Cancel</button>
    <script>
        var timeoutID;
        function showAlert() {
            timeoutID = setTimeout(alert, 3000, 'setTimeout Demo!');
        }

        function clearAlert() {
            clearTimeout(timeoutID);
        }
    </script>
</body>
</html>
```

JavaScript HTML DOM

WINDOW COOKIES

Create a Cookie with JavaScript

- `document.cookie = "username=John Doe";`

- `document.cookie = "username=John Doe; expires=Thu, 18 Dec 2017 12:00:00 UTC";`

- `document.cookie = "username=John Doe; expires=Thu, 18 Dec 2017 12:00:00 UTC; path=/";`

Read a Cookie with JavaScript

- `var x = document.cookie;`

WINDOW STORAGE

The Storage type stores only string data!

```
const settings = {
    backgroundColor: '#fff',
    color: '#111',
    theme: 'light'
};
```

Set object in Storage
```
localStorage.setItem('settings', JSON.stringify(settings));
```

Get object in Storage
```
var settings = localStorage.getItem('settings');
```

Remove object in Storage
```
localStorage.removeItem('settings');
```

LEARN MORE!

- https://www.w3schools.com/js/
- https://www.javascripttutorial.net/