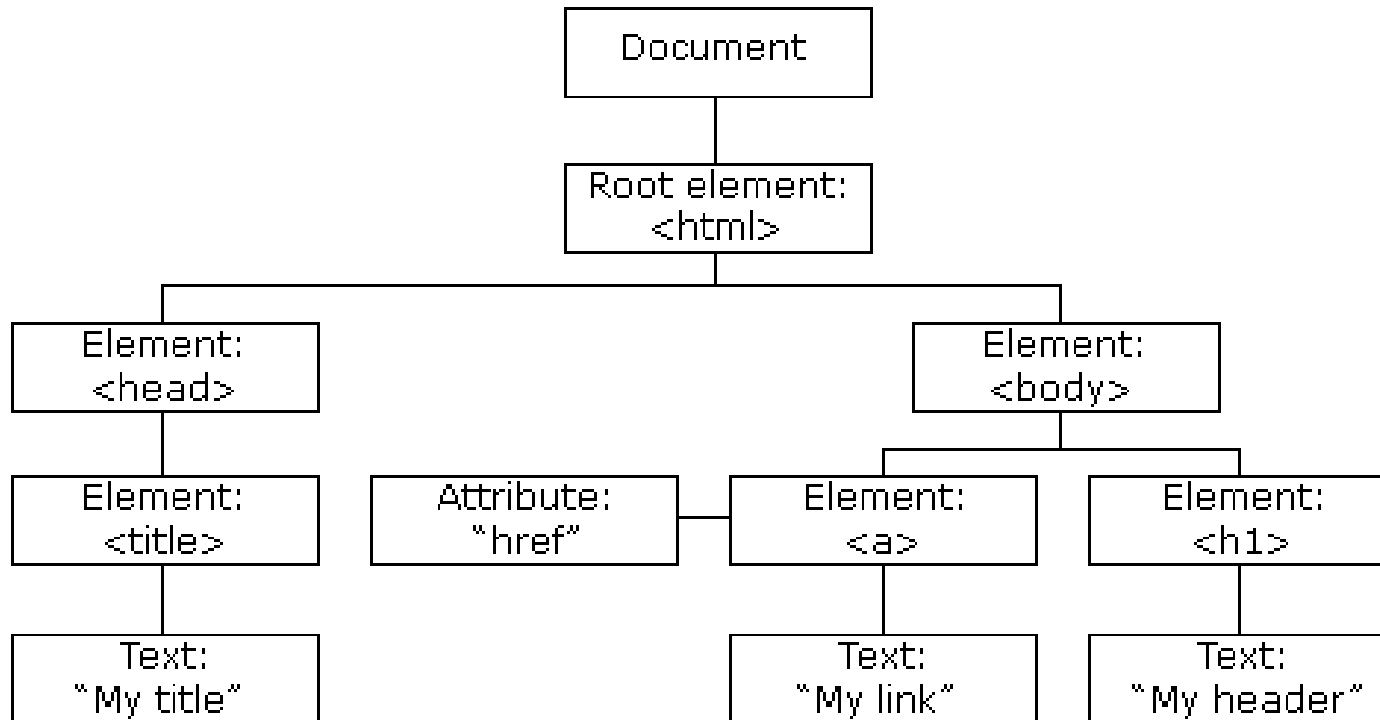


# JAVASCRIPT HTML DOM

---

## The HTML DOM Tree of Objects



# ALL ELEMENTS ARE OBJECTS

---

- JavaScript **can change** all the HTML elements in the page
  - JavaScript **can change** all the HTML attributes in the page
  - JavaScript **can change** all the CSS styles in the page
- 
- JavaScript **can remove** existing HTML elements and attributes
  - JavaScript **can add new** HTML elements and attributes
- 
- JavaScript **can react** to all existing HTML **events** in the page
  - JavaScript **can create new** HTML **events** 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

---

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

```

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

# 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>
```

## 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



# WINDOW LOCATION ASSIGN

---

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

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

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

</body>
</html>
```

# WINDOW HISTORY

---

```
<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 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>
```

# WINDOW TIMING EVENTS

---

- `window.setTimeout(function, milliseconds);`

```
<html><head>
<script>
function startTime() {
    var today = new Date();
    var h = today.getHours();
    var m = today.getMinutes();
    var s = today.getSeconds();
    m = checkTime(m);
    s = checkTime(s);
    document.getElementById('txt').innerHTML =
    h + ":" + m + ":" + s;
    var t = window.setTimeout(startTime, 500);
}
function checkTime(i) {
    if (i < 10) {i = "0" + i}; // add zero in front of numbers < 10
    return i;
}
</script>
</head>
<body onload="startTime()"><div id="txt"></div></body></html>
```

# 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;`