



Web Engineering

Inxhinieri e Webit

Erzen Talla
erzen.talla@ubt-uni.net



Document Object Model (DOM).



Objects

- Properties
- Behaviour (Methods)
- Events

Core DOM

XML DOM

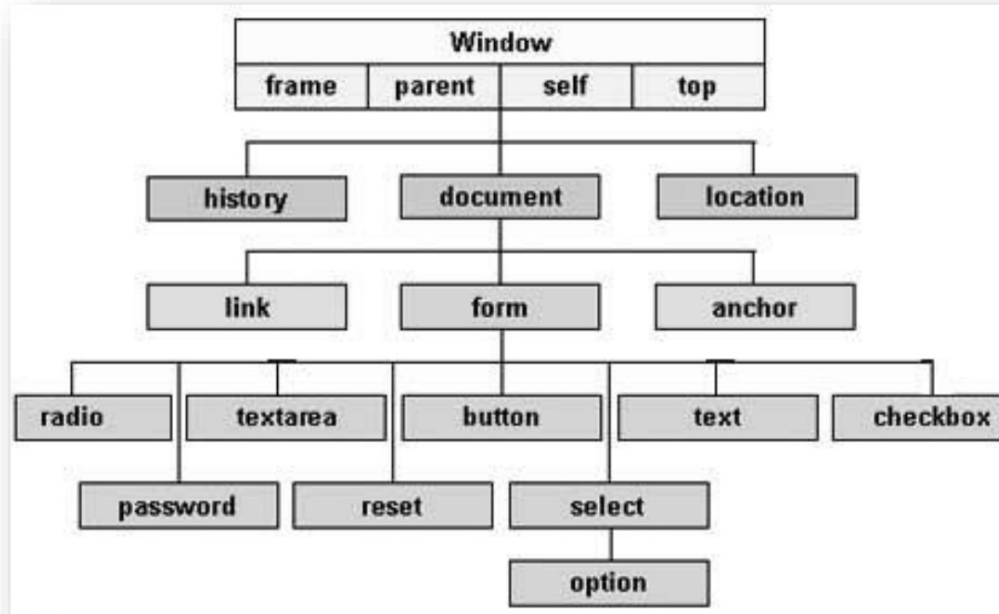
HTML DOM



The entire document is a document node.

- Every HTML element is an element node.
- The text in the HTML elements is a text node.
- Every HTML attribute is an attribute node

- document
- History
- Screen
- height
- Navigator
- appName
appVersion
language
platform
userAgent
- window = browser





- document
- History
- Screen
- height
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- appVersion
- language
- platform
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```
<html>
<head>
  <title>Javascript</title>
  <script>
    window.alert(window.screen.height);
    window.alert(window.navigator.appName);
    window.alert(window.navigator.userAgent);
    window.alert(window.location);
  </script>
</head>
<body>
<p>Shembull me Javascript</p>
</body>
</html>
```



window.alert
window.prompt
window.confirm

Detyrë: Kalkulatori me JavaScript.

Kërko numrin e parë dhe të dytë, operacionin "+,-,*" dhe trego rezultatin.



Ndryshimi i CSS si dhe evente tjera

Event	Occurs When
<code>onclick</code>	The user clicks on an element
<code>oncontextmenu</code>	The user right-clicks on an element
<code>ondblclick</code>	The user double-clicks on an element
<code>onmousedown</code>	A mouse button is pressed over an element
<code>onmouseenter</code>	The pointer is moved onto an element
<code>onmouseleave</code>	The pointer is moved out of an element
<code>onmousemove</code>	The pointer is moving over an element
<code>onmouseout</code>	The mouse pointer moves out of an element
<code>onmouseover</code>	The mouse pointer is moved over an element
<code>onmouseup</code>	The mouse button is released over an element

Event	Description
<code>onkeydown</code>	The event occurs when the user is pressing a key
<code>onkeypress</code>	The event occurs when the user presses a key
<code>onkeyup</code>	The event occurs when the user releases a key

```
<html>
<head>
  <title>Ushtrime ne Web</title>
  <link rel="stylesheet" type="text/css" href="css/style.css"/>
</head>
<body>
<p id="p1">Nje paragraf qe do te i ndryshoj ngjyra ne menyre dinamike</p>
<script>
function OnMouseOver(){
  document.getElementById("p1").style.backgroundColor="red";
  document.getElementById("p1").style.color="orange";
}
function OnMouseOut(){
  document.getElementById("p1").style.backgroundColor="white";
  document.getElementById("p1").style.color="black";
}
document.getElementById("p1").onmouseover = OnMouseOver;
document.getElementById("p1").onmouseout = OnMouseOut;
</script>
</body>
</html>
```




HTML Forms dhe JS

Validimi ne front-end perms JS duke u qasur me ID ne secilin input.

```
<form onsubmit="return validateForm()">
  <label for="name">Name:</label><br>
  <input type="text" id="name" name="name"><br>
  <label for="surname">Surname:</label><br>
  <input type="text" id="surname" name="surname"><br>
  <label for="email">Email:</label><br>
  <input type="email" id="email" name="email"><br>
  <label for="city">City:</label><br>
  <select id="city" name="city">
    <option value="">Please select a city</option>
    <option value="PR">Prishtine</option>
    <option value="PZ">Prizren</option>
    <option value="PD">Podujev</option>
  </select><br>
  <label for="comments">Comments:</label><br>
  <textarea id="comments" name="comments" rows="5" cols="50"></textarea><br>
  <input type="submit" value="Submit">
</form>
```

```
<script>
function validateForm() {
  // Get the value of each form input
  var name = document.getElementById("name").value;
  var surname = document.getElementById("surname").value;
  var email = document.getElementById("email").value;
  var city = document.getElementById("city").value;
  var comments = document.getElementById("comments").value;

  // Validate that all inputs are filled out
  if (name == "" || surname == "" || email == "" || city == "" || comments == "") {
    alert("All fields are required!");
    return false;
  }

  // Validate the email address
  if (!/^\\w+([\\.-]?\\w+)*@\\w+([\\.-]?\\w+)*\\.\\w{2,3}+$/\\.test(email)) {
    alert("Invalid email address!");
    return false;
  }

  return true;
}
</script>
```



Name vs ID

ID është standard në DOM.

ID përdoret për të ju qasur elementeve nga javascript
Name përdoret në “GET” dhe “POST”.

ID përdoret në front-end (javascript)

Name përdoret për back-end (php, .net, etj.)



Name vs ID

GET vs POST

The GET method sends the data as a query string in the URL, while the POST method sends the data in the body of the HTTP request.

The method is specified using the method attribute of the form element.

```
<form method="GET" action="/process-form">
  <label for="name">Name:</label><br>
  <input type="text" id="name" name="name"><br>
  <input type="submit" value="Submit">
</form>
```

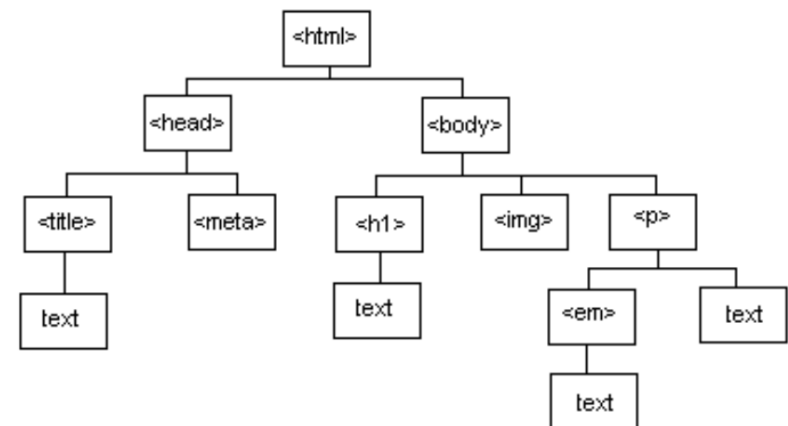
When this form is submitted, the data is appended to the URL as a query string: /process-form?name=Filan.

```
<form method="POST" action="/process-form">
  <label for="name">Name:</label><br>
  <input type="text" id="name" name="name"><br>
  <input type="submit" value="Submit">
</form>
```

When this form is submitted, the data is send in the body of HTTP Request so we don't see it in URL and its more secure because it can't be cached or logged in history of Browser.

Te shtojme ne menyre dinamike paragrafe te reja

```
node = document.createElement("p");  
textNode = document.createTextNode(text);  
node.appendChild(textNode)
```





Te shtojme ne menyre dinamike paragrafe te reja

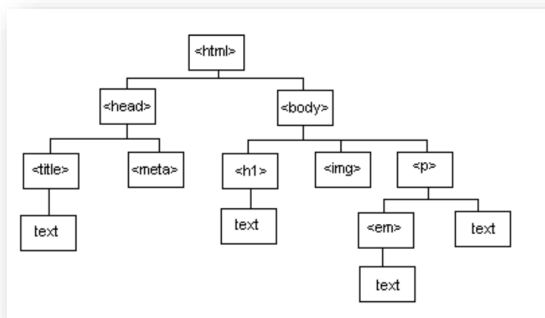
Te shtojme paragrafe ne menyre dinamike

Add Paragraph

Hello World 2022

Hello World 2022

Hello World 2022



```
<script>
function addParagraph() {
    // Create a new paragraph element
    var para = document.createElement("p");

    // Set the text of the paragraph to "Hello World 2022"
    para.textContent = "Hello World 2022";

    // Get a reference to the container element where you want to add the paragraph
    var container = document.getElementById("container");

    // Append the paragraph to the container
    container.appendChild(para);
}
</script>
```

```
<p>Te shtojme paragrafe ne menyre dinamike</p>
<button onclick="addParagraph()">Add Paragraph</button>
<div id="container"></div>
```



Arrays

Is a collection of values that are stored in a single, contiguous memory location.
Arrays are used to store multiple values in a single variable, and can be very useful for organizing and manipulating data in your code.

```
let car1 = "Audi";  
let car2 = "Mercedes Benz";  
let car3 = "BMW";  
  
const cars = ["Audi", "Mercedes Benz", "BMW"];
```

```
// Create an array with 3 elements  
var myArray = [1, 2, 3];  
  
for (var i = 0; i < myArray.length; i++) {  
  console.log(myArray[i]);  
}  
  
// Access the first element in the array  
var firstElement = myArray[0];  
  
// Access the third element in the array  
var thirdElement = myArray[2];  
  
// Change the value of the second element in the array  
myArray[1] = 99;  
  
// Add a new element to the end of the array  
myArray.push(4);  
  
// Add a new element to the beginning of the array  
myArray.unshift(0);  
  
// Remove the last element from the array  
myArray.pop();  
  
// Remove the first element from the array  
myArray.shift();  
  
// Sort the array in ascending order  
myArray.sort();  
  
// Sort the array in descending order  
myArray.reverse();
```