

OBJECTIVES

- JavaScript HTML DOM
- Finding HTML Elements
- Changing HTML Elements
- Assignment 12

LECTURE

JavaScript HTML DOM

With the HTML DOM, JavaScript can access and change all the elements of an HTML document.

The HTML DOM (Document Object Model)

When a web page is loaded, the browser creates a Document Object Model of the page.

The HTML DOM model is constructed as a tree of Objects:

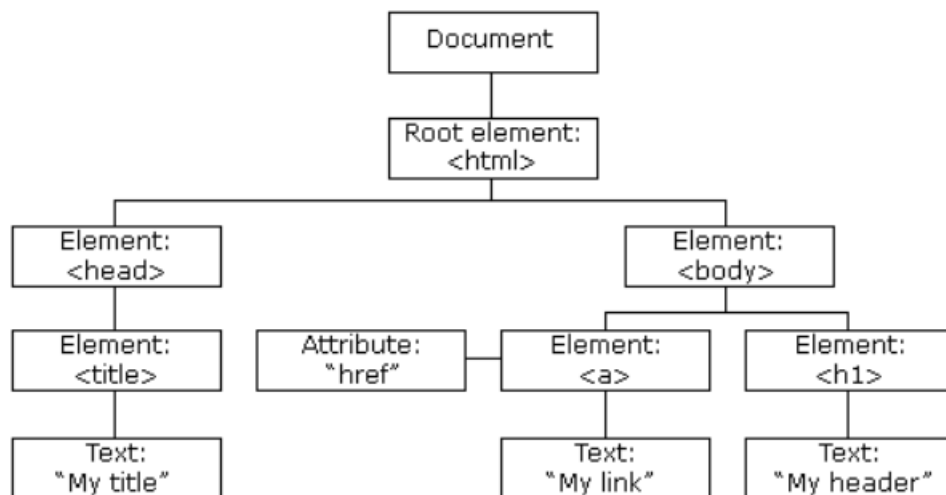


Fig 1: The HTML DOM Tree of Objects

It basically describes how these objects (elements) are laid down in the tree fashion model much like this diagram.

With the object model, JavaScript gets all the power it needs to create dynamic HTML:

- JavaScript can change all the HTML elements on the page
- JavaScript can change all the HTML attributes on the page
- JavaScript can change all the CSS styles on 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 on the page
- JavaScript can create new HTML events on the page

What is the HTML DOM?

The HTML DOM is a standard object model and programming interface for HTML. It defines:

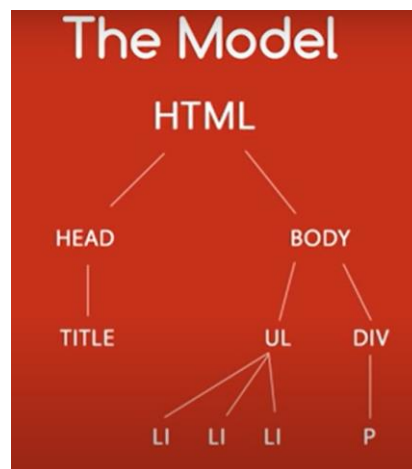
- The HTML elements as objects
- The properties of all HTML elements
- The methods to access all HTML elements
- The events for all HTML elements

In other words: The HTML DOM is a standard for how to get, change, add, or delete HTML elements.

NODES:

Everything we can change in the document is a node:

- Elements
- Text within elements
- HTML attributes



Here the li tag is not, the text of the li tag is node as well. All HTML attributes are nodes. For example, the class, href, or style attributes are nodes.

Finding HTML Elements

https://www.w3schools.com/js/js_html_dom_elements.asp

To manipulate HTML elements, you have to find the elements first.

There are several ways to do this:

- Finding HTML elements by id `document.getElementById("intro");`
- Finding HTML elements by tag name `document.getElementsByTagName("p");`
- Finding HTML elements by class name `document.getElementsByClassName("intro");`
- Finding HTML elements by CSS selectors `document.querySelectorAll("p.intro");`
- Finding HTML elements by HTML object collections

If you want to access any element in an HTML page, you always start with accessing the document object.

Changing HTML Elements

Property

`element.innerHTML = new html content`

`element.attribute = new value`

`element.style.property = new style`

Method

`element.setAttribute(attribute, value)`

Assignment 12:

Instructions:

Creating the HTML DOM Tree and Recreate Elements Using JavaScript

You have an HTML file with tags, attributes, and styles.

- Your task is to create the corresponding HTML DOM tree of objects on paper, representing each element with its tag name and including the existing attributes and styles (**your reference is Fig 1 of the current document**).

- Then, use JavaScript to create the elements dynamically **without adding any extra attributes or styles**.

```
<body>
  <div id="mainDiv">
    The <b>World Wide Web Consortium</b>
    , abbreviated to<strong>W3C</strong>
    , is a
    <a href=" http://en.wikipedia.org/wiki/Standards_organization "
      target="_blank" title="Standards organization">
      Standards Organization.</a>
    A <i>non-profit</i>
    responsible for promoting the compatibility of the technologies
    <a href="http://en.wikipedia.org/wiki/World_Wide_Web"
      target="_blank" title="World Wide Web">World Wide Web</a>.
    <p style="text-align: right">Your Name Here</p>
  </div>
</body>
```