

DOM

(Document Object Model)

What is the HTML DOM?

The HTML DOM is:

- A standard object model for HTML
- A standard programming interface for HTML
- Platform- and language-independent
- A W3C standard

The HTML DOM defines the **objects and properties** of all HTML elements, and the **methods** (interface) to access them.

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

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DOM Example

Look at the following HTML document:

```
<html>
  <head>
    <title>DOM Tutorial</title>
  </head>
  <body>
    <h1>DOM Lesson one</h1>
    <p>Hello world!</p>
  </body>
</html>
```

The root node in the HTML above is `<html>`. All other nodes in the document are contained within `<html>`.

The `<html>` node has two child nodes; `<head>` and `<body>`.

The `<head>` node holds a `<title>` node. The `<body>` node holds a `<h1>` and `<p>` node.

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The HTML DOM views an HTML document as a node-tree.
All the nodes in the tree have relationships to each other.

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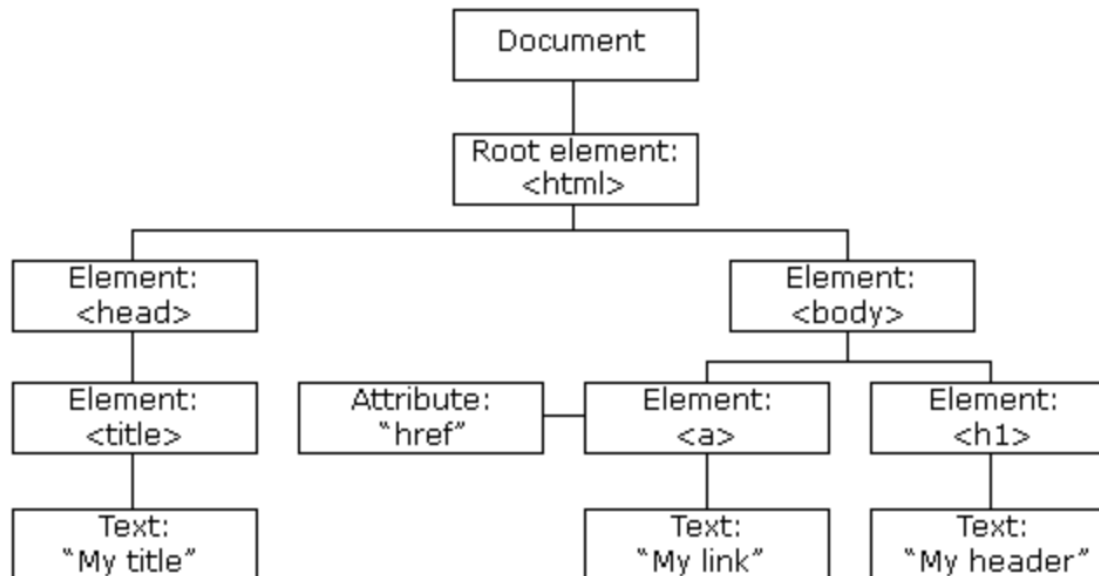
(Document Object Model)

The HTML DOM Node Tree

The HTML DOM views an HTML document as a tree-structure. The tree structure is called a **node-tree**.

All nodes can be accessed through the tree. Their contents can be modified or deleted, and new elements can be created.

The node tree below shows the set of nodes, and the connections between them. The tree starts at the root node and branches out to the text nodes at the lowest level of the tree:



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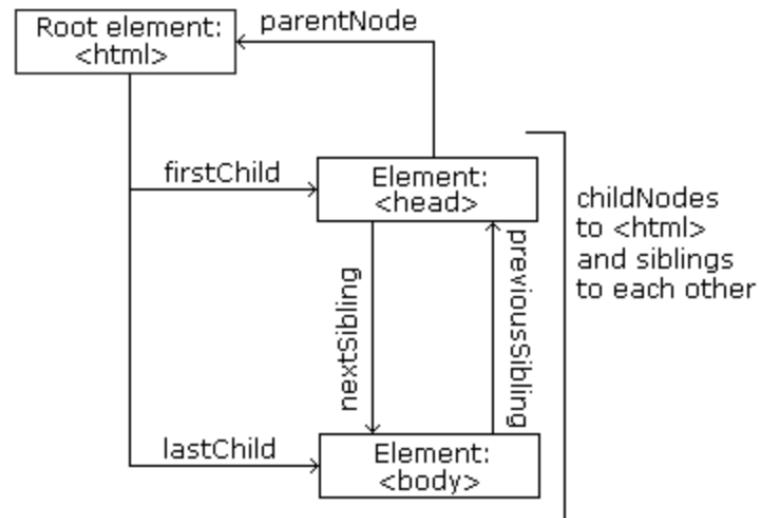
Node Parents, Children, and Siblings

The nodes in the node tree have a hierarchical relationship to each other.

The terms parent, child, and sibling are used to describe the relationships. Parent nodes have children. Children on the same level are called siblings (brothers or sisters).

- In a node tree, the top node is called the root
- Every node, except the root, has exactly one parent node
- A node can have any number of children
- A leaf is a node with no children
- Siblings are nodes with the same parent

The following image illustrates a part of the node tree and the relationship between the nodes:



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Look at the following HTML fragment:

```
<html>
  <head>
    <title>DOM Tutorial</title>
  </head>
  <body>
    <h1>DOM Lesson one</h1>
    <p>Hello world!</p>
  </body>
</html>
```

From the HTML above:

- The <html> node has no parent node; it is the root node
- The parent node of the <head> and <body> nodes is the <html> node
- The parent node of the "Hello world!" text node is the <p> node

and:

- The <html> node has two child nodes; <head> and <body>
- The <head> node has one child node; the <title> node
- The <title> node also has one child node; the text node "DOM Tutorial"
- The <h1> and <p> nodes are siblings, and both child nodes of <body>

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Look at the following HTML fragment:

```
<html>
  <head>
    <title>DOM Tutorial</title>
  </head>
  <body>
    <h1>DOM Lesson one</h1>
    <p>Hello world!</p>
  </body>
</html>
```

First Child - Last Child

From the HTML above:

- the `<head>` element is the first child of the `<html>` element, and the `<body>` element is the last child of the `<html>` element
- the `<h1>` element is the first child of the `<body>` element, and the `<p>` element is the last child of the `<body>` element

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