HTML Document Object Model
DOM

www.w3schools.com/htmldom

What is DOM?

• The DOM is a W3C (World Wide Web Consortium) standard.

• The DOM defines a standard for accessing documents like HTML and XML:

• The DOM is separated into 3 different parts / levels:
    Core DOM - standard model for any structured document
    XML DOM - standard model for XML documents
    HTML DOM - standard model for HTML documents

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

What is 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.

HTML DOM Nodes

In the DOM, everything in an HTML document is a node.

- The entire document is a document node
- Every HTML element is an element node
- The text in the HTML elements are text nodes
- Every HTML attribute is an attribute node
- Comments are comment nodes

HTML DOM Nodes
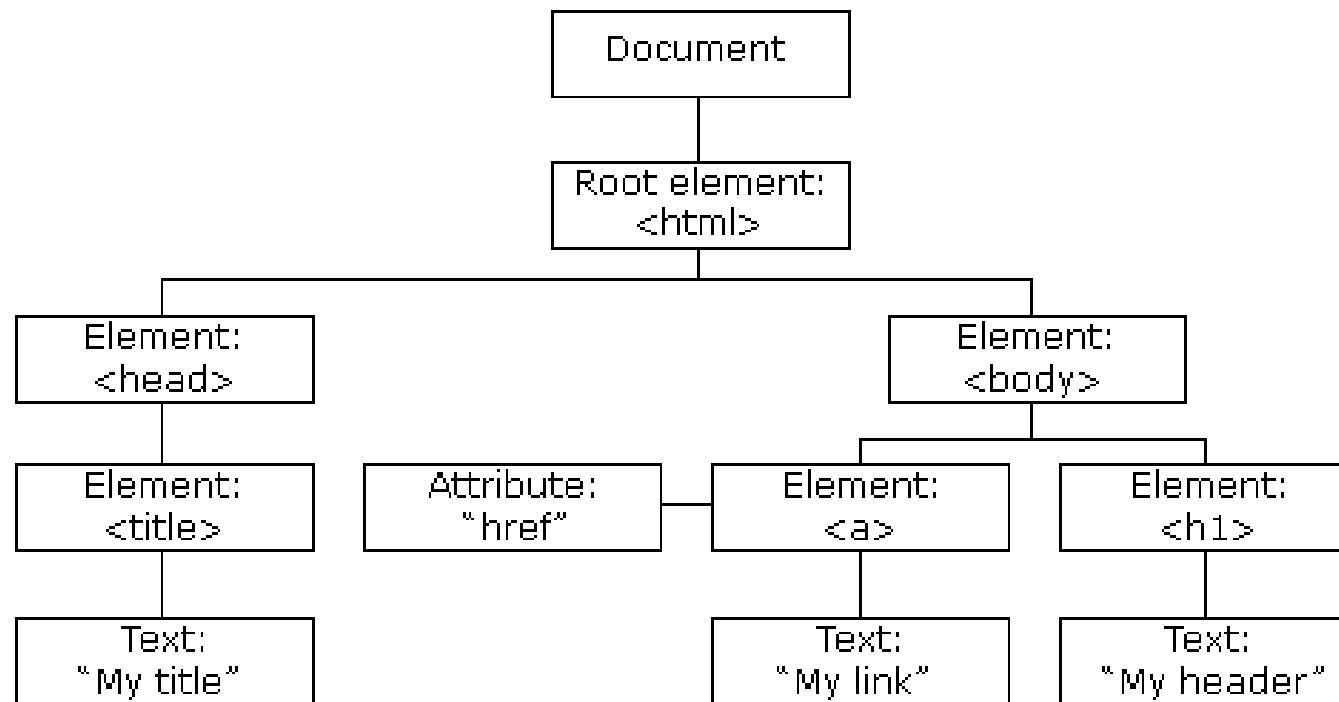
Text is always stored in Text Nodes!

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

In `<title>DOM Tutorial</title>`, the element node <title>, holds a text node with the value "DOM Tutorial".

"DOM Tutorial" is not the value of the <title> element!

HTML DOM Tree

HTML DOM Tree Example
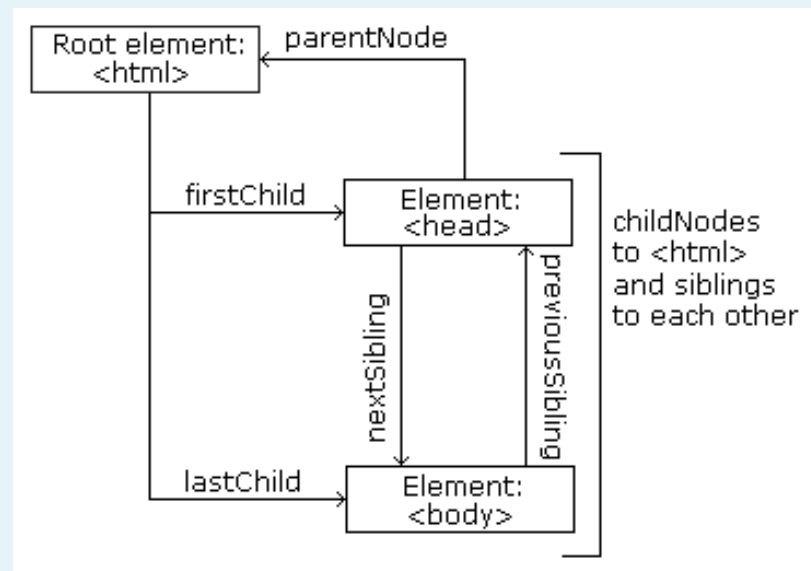
HTML DOM Node Tree

The HTML DOM views an HTML document as a node-tree.

All the nodes in the tree have relationships to each other.

HTML DOM Node Tree

Node Parents, Children, and Siblings

- 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

HTML DOM Properties and Methods

The programming interface of the DOM is defined by standard properties and methods.

- Properties are often referred to as something that is (i.e. the name of a node).

- Methods are often referred to as something that is done (i.e. remove a node).

HTML DOM Properties

Some DOM properties:

- x.innerHTML - the text value of x
- x.nodeName - the name of x
- x.nodeValue - the value of x
- x.parentNode - the parent node of x
- x.childNodes - the child nodes of x
- x.attributes - the attributes nodes of x

Note: In the list above, x is a node object (HTML element).

HTML DOM Methods

Some DOM Methods:

- x.getElementById(id) - get the element with a specified id
- x.getElementsByTagName(name) - get all elements with a specified tag name
- x.appendChild(node) - insert a child node to x
- x.removeChild(node) - remove a child node from x

Note: In the list above, x is a node object (HTML element).

HTML DOM Access Nodes

Accessing Nodes

You can access a node in three ways:

- By using the getElementById() method
- By using the getElementsByTagName() method
    -returns a node-list (an array of nodes)
    -length property defines the number of nodes in a node
    list

```
x=document.getElementsByTagName("p");
for (i=0;i<x.length;i++)
{
document.write(x[i].innerHTML);
document.write("<br />");
}
```

- By navigating the node tree, using the node relationships

HTML DOM Node Information

The nodeName Property specifies the name of a node.

- nodeName is read-only
- nodeName of an element node is the same as the tag name
- nodeName of an attribute node is the attribute name
- nodeName of a text node is always #text
- nodeName of the document node is always #document

Note: nodeName always contains the uppercase tag name of an HTML element.

HTML DOM Node Information

The nodeValue Property specifies the value of a node.

- nodeValue for element nodes is undefined
- nodeValue for text nodes is the text itself
- nodeValue for attribute nodes is the attribute value

HTML DOM Node Information

The nodeType Property specifies the type of node and is read only.

Element type	NodeType
Element	1
Attribute	2
Text	3
Comment	8
Document	9

DOM How To's

http://www.w3schools.com/htmldom/dom_using.asp