

# Document Object Model

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# Agenda

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# What is the DOM

*The W3C Document Object Model (DOM) is a platform and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document.*

The DOM is mainly separated into 3 different parts:

- Core DOM - standard model for any structured document
- XML DOM - standard model for XML documents
- HTML DOM - standard model for HTML documents

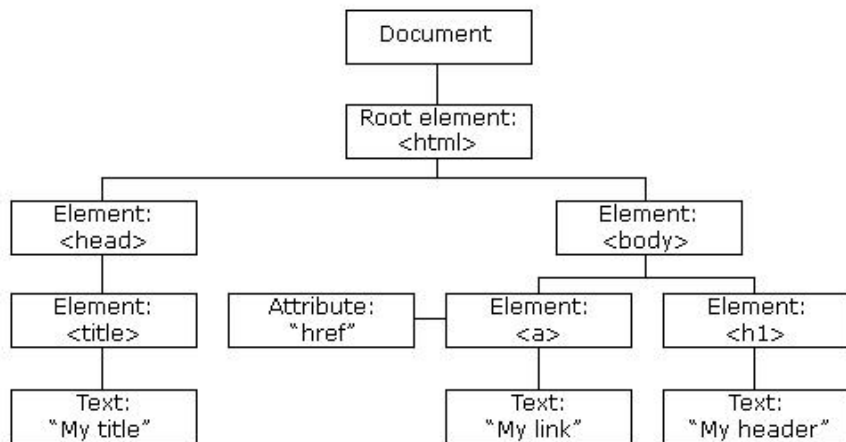


According to the DOM, everything in an HTML document is a node.

- 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



# The 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 (First Child, Last Child)
- A leaf is a node with no children
- Siblings are nodes with the same parent



# 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`
  - `nodeValue` for element nodes is undefined
  - `nodeValue` for text nodes is the text itself
  - `nodeValue` for attribute nodes is the attribute value
- `x.parentNode` - the parent node of `x`
- `x.childNodes` - the child nodes of `x`
- `x.attributes` - the attributes nodes of `x`

`x` is a node object (HTML element).



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`

`x` is a node object (HTML element).





# HTML DOM Properties and Methods

```
<script type="text/javascript">
    document.body.bgColor="lavender";
</script>
```

```
<script type="text/javascript">
    function ChangeStyle() {
        document.getElementById("p1").style.color="blue";
        document.getElementById("p1").style.fontFamily="Arial";
    }
</script>
```

```
<p id="p1">Hello world!</p>
<input type="button" onclick="ChangeStyle()"
    value="Change style" />
```



**Note:** There is no public standard that applies to the Window object, but all major browsers support it.

Some properties

- **document**, the Document object for the window
- **outerHeight**, Sets or returns the outer height of a window, including toolbars/scrollbars
- **outerWidth**, Sets or returns the outer width of a window, including toolbars/scrollbars
- **screenLeft**, **screenX**, Returns the x coordinate of the window relative to the screen
- **screenTop**, **screenY**, Returns the y coordinate of the window relative to the screen



## Some methods

- `open()`, Opens a new browser window
- `close()`, Closes the current window
- `alert()`, Displays an alert box with a message and an OK button
- `setTimeout()`, Calls a function or evaluates an expression after a specified number of milliseconds
- `clearTimeout()`, Clears a timer set with `setTimeout()`
- `setInterval()`
- `clearInterval()`



# HTML DOM Document Object

one general method

- **write()**, Writes HTML expressions or JavaScript code to a document



# One Example

```
<script type="text/javascript">
    function move() {
        document.getElementById("Layer1").style.left
            =Math.random()*500;
        document.getElementById("Layer1").style.top
            =Math.random()*500;
        setTimeout("move()",1000);
    }
</script>

<body onload="move()">
    <div id="Layer1" style="position:absolute;
        left:14px; top:44px;
        width:150px; height:102px; z-index:1">
        
    </div>
</body>
```



**Thank You!**  
**Any Questions?**

