

DOM

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Contents

- What is DOM?
- DOM Levels
- DOM Level 0
- DOM Level 1

What is the DOM?

- The Document Object Model is an API for HTML and XML documents.
- It does two things for web developers:
 - it provides a structural representation of the document, and
 - it defines the way that that structure is to be accessed and manipulated from script, allowing you to get at the web page as a structured group of nodes.
- Essentially, it connects web pages to scripts or programming languages.

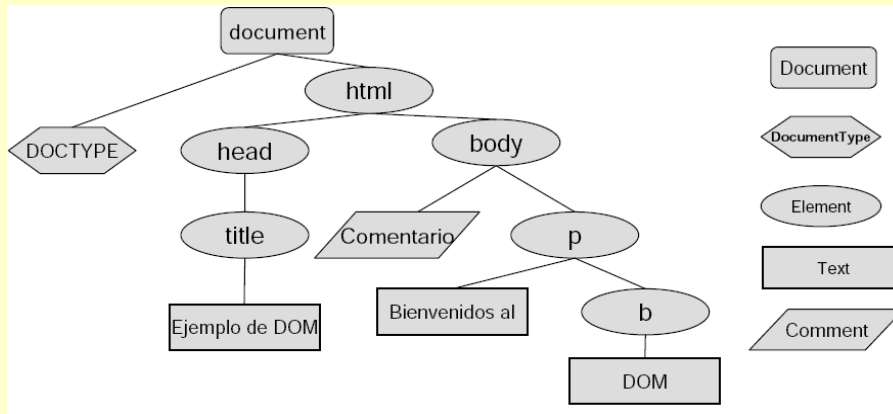
What is the DOM?

- **Example:**

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML
 4.01>
<html>
<head>
<title>Ejemplo de DOM</title>
</head>
<body>
<!-- es un ejemplo un poco simple -->
<p style="color:red">Bienvenidos al
  <b>DOM</b></p>
</body>
</html>
```

What is the DOM?

- Nodes reflect content and structure of the document:

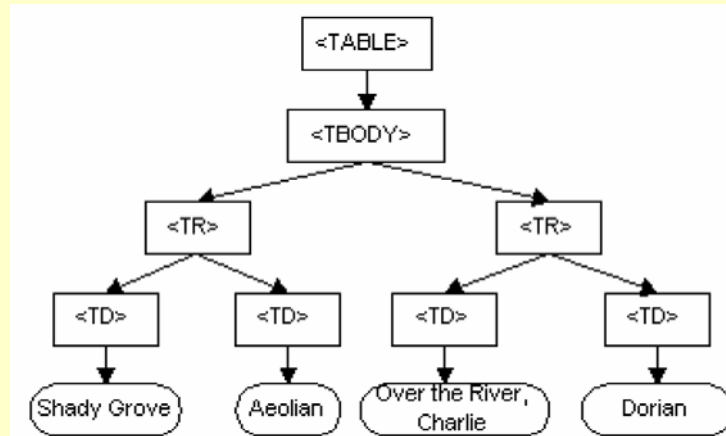


What is the DOM?

- Example:

```
<TABLE>
<TBODY>
<TR>
<TD>Shady Grove</TD>
<TD>Aeolian</TD>
</TR>
<TR>
<TD>Over the River, Charlie</TD>
<TD>Dorian</TD>
</TR>
</TBODY>
</TABLE>
```

What is the DOM?



What is DOM?

- Benefits:
 - Allows us client-side processing without the need of web server processing

DOM Levels

- DOM 0
- DOM 1: Core and HTML
- DOM 2: Core, HTML, Style, Events, View, etc.
- DOM 3: in progress

DOM Level 0

- The term "DOM Level 0" refers to a mix (not formally specified) of HTML document functionalities.
- Offered from Netscape Navigator version 3.0 and Microsoft Internet Explorer version 3.0.
- It is also a set of APIs which are not a part of any W3C DOM specification, but are implemented across several browsers → No standard.

DOM Level 0

- **innerHTML:**
 - Sets or retrieves the HTML between the start and end tags of the object.
 - For example, the entire contents of the document body can be deleted by:

```
// Replaces body content with an empty string.  
document.body.innerHTML = "";
```

DOM Level 0

- As there is no public specification for this property, implementations differ widely.
- It should never be used to write parts of a table—W3C DOM methods should be used for that—though it can be used to write an entire table or the contents of a cell.

DOM Level 0

- Example:

```
<p onmouseover="this.innerHTML='<b>Mouse  
out to change back.</b>'"  
  onmouseout="this.innerHTML='<i>Mouse  
over again to change.</i>'">  
<i>Mouse over this text to change it.</i>  
</p>
```

DOM Level 1

- Two parts:
 - Core: a low-level set of fundamental interfaces that can represent any structured document, as well as defining extended interfaces for representing an XML document.
 - HTML: provides additional, higher-level interfaces that are used with the fundamental interfaces to provide a more convenient view of an HTML document.

DOM Level 1

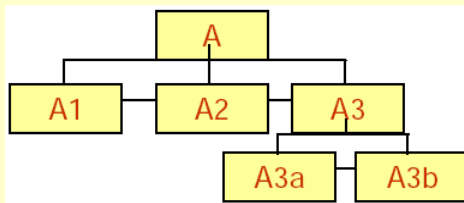
- Every node is a type of Node, but there are different subtypes: Document, DocumentType, Element, Text, Comment, ...
- Attributes are nodes of type Attr, but they are not in the tree that represents the document

DOM Level 1

- Every node has a set of properties that link to the “relatives”:
 - childNodes
 - firstChild
 - lastChild
 - parentNode
 - nextSibling
 - prevSibling

DOM Level 1

- Example:



A.firstChild = A1
A.lastChild = A3
A.childNodes.length = 3
A.childNodes[0] = A1
A.childNodes[1] = A2
A.lastChild.firstChild = A3a
A3b.parentNode.parentNode = A
A1.nextSibling = A2
A3.prevSibling = A2
A3.nextSibling = null

DOM Level 1

- getElementById("elementID")
 - var element = document.getElementById("myTable")
- getElementsByTagName("tagName"):
 - var images = document.getElementsByTagName("img")
 - The special value "*" matches all tags.

DOM Level 1

- **createElement("tagName")**
 - var element =
document.createElement("tbody")
- **appendChild(element)**
 - element.appendChild(newChild);
- **replaceChild(element, element)**
 - element.replaceChild(newElement,
oldElement);

DOM Level 1

```
// HTML:  
// <div id="d"><p>Content</p>  
// <p>Further Elaborated</p>  
// </div>  
  
d = document.getElementById("d");  
alert(d.innerHTML);
```

More Information

- <http://www.alvit.de/handbook/>
- <http://www.w3schools.com/>
- <http://www.w3.org/>

The screenshot shows a browser window displaying the website 'the web developer's handbook'. The page features a dark background with white text and a grid of links organized into categories. At the top, there is a navigation bar with links like 'creativity', 'css daily reading', 'css web-tools & services', and 'specifications'. Below this, a central banner reads 'updated // 08.05.06' and 'Hello, Digg users! Thanks for your e-mails, means "recently updated" = "old link" Support the project, donating via PayPal!'. The main content is divided into four columns: 'creativity', 'css daily reading', 'css web-tools & services', and 'specifications'. Each column contains a list of links to various resources, such as '450bestwebsites.com', 'CSS Zen Garden', and 'All CSS Properties Listed Alphabetically'. The browser's address bar shows the URL 'http://www.alvit.de/handbook/'.

W3Schools Online Web Tutorials - Microsoft Internet Explorer

Archivo Edición Ver Favoritos Herramientas Ayuda

Dirección http://www.w3schools.com

W3 Schools

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Quick and Easy Learning

Because time is valuable, we deliver quick and easy learning. At W3Schools, you can study everything you need to learn, in an accessible and handy format.

"Never increase, beyond what is necessary, the number of entities required to explain anything" — William of Ockham (1288-1349)

Where to Start

What does a Web developer have to know? W3Schools will answer this, and help you become a professional Web developer, well prepared for the future.

For the beginner: [Go to our Web Building Primer](#)
For the developer: [Go to our Web Building Tutorial](#)

Internet Joke

For example: "It is said that Aristotle was the first to find a kitten had six legs!"

HTML Tutorials

- Learn HTML
- Learn XHTML
- Learn CSS
- Learn TCP/IP

XML Tutorials

- Learn XML
- Learn XSL
- Learn XSLT
- Learn XSL-FO
- Learn XPath
- Learn XQuery
- Learn XSLK
- Learn XPath
- Learn DTD
- Learn Schema
- Learn XML DOM
- Learn XPath
- Learn SOAP
- Learn WSDL
- Learn RDF
- Learn RSS
- Learn WAP
- Learn Web Services

Browser Scripting

- Learn JavaScript
- Learn HTML DOM
- Learn DHTML
- Learn VBScript
- Learn AJAX
- Learn EXE
- Learn WMLScript

Server Scripting

- Learn SQL
- Learn ASP
- Learn ADO
- Learn PHP

.NET (dotnet)

- .NET Microsoft
- .NET ASP
- .NET Mobile

Multimedia

- Learn Media
- Learn SMIL
- Learn SVG
- Learn Flash

Web Building

- Web W3C
- Web Browsers
- Web Quality
- Web Semantic
- Web Careers
- Web Hosting
- Web Certification

SITE SEARCH

About W3Schools
W3Schools Forum

HTML Examples

- HTML 4.01
- XHTML 1.0
- CSS 2.0
- JavaScript
- HTML DOM
- PHP 5.4
- SQL 7.0
- XPath 2.0
- XSL-FO
- XML 1.1
- ASCL Reference
- Entity Reference
- HTML Color Names

EXAMPLES

- HTML Examples
- CSS Examples
- XML Examples
- DOM Examples
- WAP Examples
- JavaScript Examples
- Entity Examples
- VBScript Examples
- ASP Examples
- ADO Examples
- ASP.NET Examples
- SVG Examples

QUIZZES

- HTML Quiz
- XHTML Quiz
- CSS Quiz
- XML Quiz
- JavaScript Quiz
- SQL Quiz
- PHP Quiz
- ASP Quiz

CERTIFICATION

- HTML Certification
- XML Certification
- ASP Certification

QUICK STARTERS

- MyFirst HTML
- MyFirst CSS
- MyFirst JavaScript
- MyFirst VBScript

VALIDATION

- Validate HTML
- Validate CSS
- Validate XHTML

Document Object Model (DOM) Specifications - Microsoft Internet Explorer

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Dirección http://www.w3.org/DOM/DOM1R

W3C Architecture domain

About DOM DOM Activity statement
Technical Reports Technical Materials
Test Suites FAQ Mailing List
Members only resource: DOM Working Group

Document Object Model (DOM) Technical Reports

See also [other W3C Technical Reports](#).

Table of contents

- [Document Object Model Level 1](#)
- [Document Object Model Level 2](#)
- [Document Object Model Level 3](#)
- [Others](#)

Document Object Model Level 1

[Document Object Model Level 1 \(W3C Recommendation\)](#)
1 October 1998, Vidur Apparao, Steve Byrne, Mike Champion, Scott Isaacs, Ian Jacobs, Arnaud Le Hors, Gavin Nicol, Jonathan Robie, Robert Sutor, Chris Wilson, Lauren Wood
[\[errata\]](#)

[Document Object Model Level 1 \(Second Edition\) \(W3C Working Draft\)](#)
29 September 2000, Vidur Apparao, Steve Byrne, Mike Champion, Scott Isaacs, Ian Jacobs, Arnaud Le Hors, Gavin Nicol, Jonathan Robie, Robert Sutor, Chris Wilson, Lauren Wood

Document Object Model Level 2

[Document Object Model Level 2 Core \(W3C Recommendation\)](#)
13 November 2000, Arnaud Le Hors, Philippe Le Hégaré, Lauren Wood, Gavin Nicol, Jonathan Robie, Mike Champion, Steve Byrne
[\[errata\]](#)

[Document Object Model Level 2 Views \(W3C Recommendation\)](#)
13 November 2000, Arnaud Le Hors, Laurence Cable
[\[errata\]](#)

[Document Object Model Level 2 Events \(W3C Recommendation\)](#)
13 November 2000, Tom Fritley
[\[errata\]](#)

[Document Object Model Level 2 Style \(W3C Recommendation\)](#)
13 November 2000, Chris Wilson, Philippe Le Hégaré, Vidur Apparao
[\[errata\]](#)

[Document Object Model Level 2 Traversal and Range \(W3C Recommendation\)](#)
13 November 2000, Joe Kesselman, Jonathan Robie, Mike Champion, Peter Sharpe, Vidur Apparao, Lauren Wood
[\[errata\]](#)

[Document Object Model Level 2 HTML \(W3C Recommendation\)](#)
9 January 2003, Johnny Sterback, Philippe Le Hégaré, Arnaud Le Hors, Chris Wilson, Ian Jacobs, Mike Champion, Scott Isaacs, Vidur Apparao
[\[errata\]](#) [\[issues list\]](#) [\[implementation report\]](#) [\[CR Disclosure\]](#)

Exercises

- Sort a table:
 1. Get the table → getElementById
 2. Get the tbody → getElementsByTagName
 3. Get the rows → getElementsByTagName
 4. Insert the rows in an array (use cloneNode)
 5. Sort the array with sort() method of array
 6. Reverse order: use reverse() method of array
 7. Create a new tbody → document.createElement
 8. Append ordered rows → appendChild
 9. Replace old tbody → replaceChild

Exercises

- Add rows to a table

Exercises

```
<html>
<head>
<title>Add rows</title>
<script language="JavaScript">
function addRow()
{
  var table = document.getElementById('myTable');
  var row = table.insertRow(table.rows.length);
  var cell = row.insertCell(row.cells.length);
  cell.appendChild(document.createTextNode("Una prueba"));
}
</script>
</head>
<body>

<table id="myTable">
</table>

<form name="myForm">
<input type="button" value="Add row" onclick="addRow();" >
</form>
</body>
</html>
```

Exercises

- Filter a table