

# Computer Science E-75

## Building Dynamic Websites

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Lecture 7: Ajax

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```
<!DOCTYPE html PUBLIC
"-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-
transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>My title</title>
</head>
<body>
<a href="">My link</a>
<h1>My header</h1>
</html>
```

Ajax

DOM

```
<!DOCTYPE html PUBLIC
"-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-
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<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>My title</title>
</head>
<body>
<a href="">My link</a>
<h1>My header</h1>
</html>
```

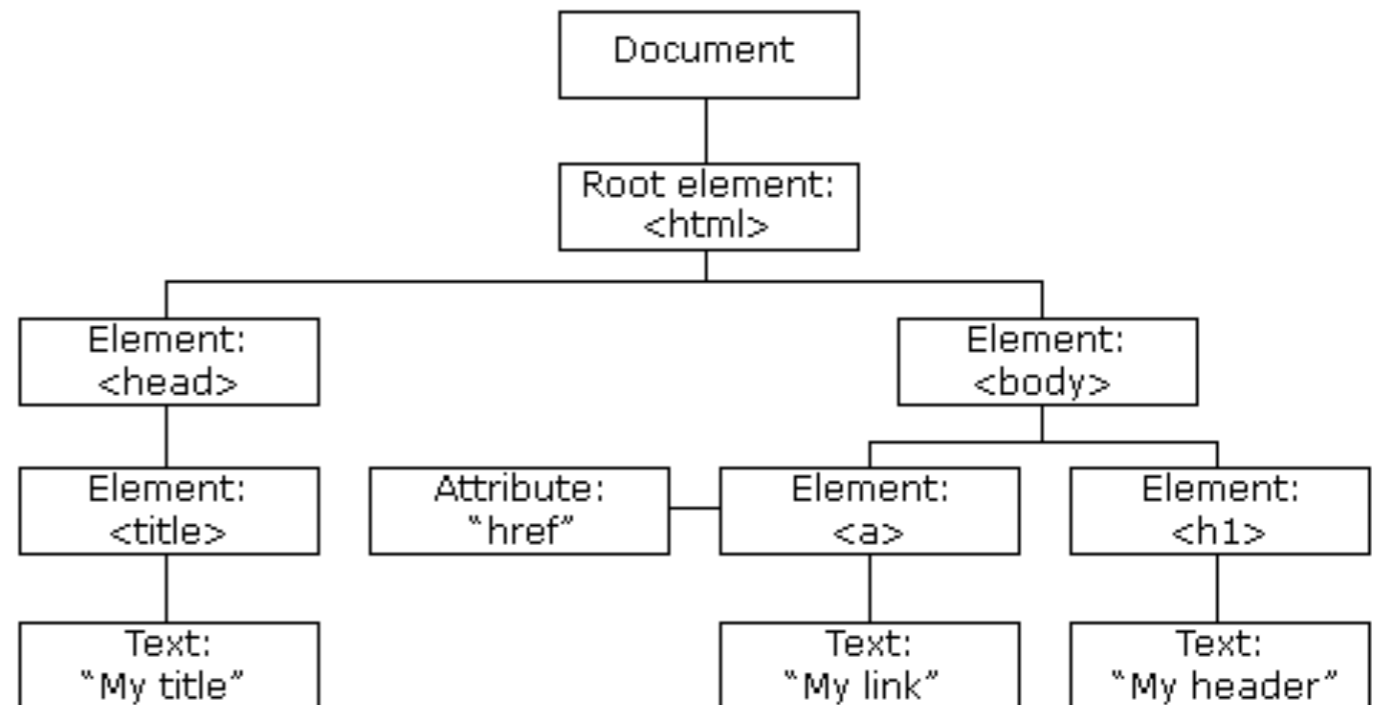


Image from <http://www.w3schools.com/html/dom/>.

Ajax

DOM

- HTML DOM Reference  
[http://www.w3schools.com/html/dom/dom\\_reference.asp](http://www.w3schools.com/html/dom/dom_reference.asp)
- DOM Reference  
<http://www.javascriptkit.com/domref/>
- DOM objects and methods  
<http://www.howtcreate.co.uk/tutorials/javascript/domstructure/>

Ajax

DOM

- XMLHttpRequest Object (from MSDN)  
[http://msdn2.microsoft.com/en-us/library/ms535874\(VS.85\).aspx](http://msdn2.microsoft.com/en-us/library/ms535874(VS.85).aspx)
- XMLHttpRequest Object (MozDev Center)  
<http://developer.mozilla.org/en/docs/XMLHttpRequest>
- XMLHttpRequest Object (World Wide Web Consortium)  
<http://www.w3.org/TR/XMLHttpRequest/>

Ajax

XMLHttpRequest

- abort()
- getAllResponseHeaders()
- getResponseHeader(header)
- open(method, url)
- open(method, url, async)
- open(method, url, async, user)
- open(method, url, async, user, password)
- send()
- send(data)
- setRequestHeader(header, value)

Ajax

Methods

- onreadystatechange
- readyState
  - ▶ 0 (initialized)
  - ▶ 1 (open)
  - ▶ 2 (sent)
  - ▶ 3 (receiving)
  - ▶ 4 (loaded)
- responseBody (IE only)
- responseText
- responseXML
- status
  - ▶ 200 (OK)
  - ▶ 404 (Not Found)
  - ▶ 500 (Internal Server Error)
  - ▶ . . .
- statusText

Ajax

Properties

- XML (text/xml)
- XHTML (text/html)
- JSON (application/json)

[http://www.quirksmode.org/blog/archives/2005/12/the\\_ajax\\_respon.html](http://www.quirksmode.org/blog/archives/2005/12/the_ajax_respon.html)

Ajax

Content Types



*object*

*{ members }*

*members*

*pair , pair , ..*

*pair*

*string : value*

*array*

*[ elements ]*

*elements*

*value , value , ..*

*value*

*string, number, object, array, **true**, **false**, **null***

Ajax

JSON

- ASP:
  - JSON for ASP.
  - JSON ASP utility class.
- ActionScript:
  - ActionScript1.
  - ActionScript2.
  - ActionScript3.
  - JSONConnector.
- C.
  - JSON\_checker.
  - JSON parser.
  - json-c.
  - M's JSON parser.
  - YAJL.
- C++:
  - TinyJSON.
  - jsoncpp.
  - zoolib.
  - Jaula.
  - JOST.
  - JSON Spirit.
- C#:
  - JSON\_checker.
  - Jayrock.
  - Json.NET - LINQ to JSON.
  - JSONSharp.
  - LitJSON.
  - JSON for .NET.
  - JsonFx.
  - JsonExSerializer.
- ColdFusion:
  - ColdFusion 8.
  - CFJSON.
  - toJSON.
- D.
- Delphi:
  - Delphi Web Utils.
  - JSON Delphi Library.
  - JSON Toolkit.
- E.
- Erlang.
- Haskell:
  - RJson package.
  - json package.
  - JSON.hs.
  - HaskellNet.
- haXe.
- Java:
  - org.json.
  - org.json.me.
  - Json-lib.
  - JSON Tools.
  - org.json.simple.
  - Stringtree.
  - SOJO.
  - VRaptor.
  - Restlet.
  - Jettison.
  - json-taglib.
  - FLEXJSON.
  - XStream.
  - JsonMarshaller.
  - Flexjson.
  - Jackson JSON Processor.
  - JON tools.
  - google-gson.
- JavaScript:
  - json2.js.
  - json\_parse.js.
  - json\_parser\_state.js.
  - json\_sans\_eval.
- Lasso.
- Lisp:
  - Common Lisp.
  - Emacs Lisp.
  - Chicken Scheme.
  - MZScheme.
  - PLT Scheme.
- LotusScript:
  - JSON LS.
  - JSON Reader/Writer.
- Lua:
  - Json4Lua.
  - Json.lua.
- Objective C:
  - BSJSONAdditions.
  - Cocoa JSON Framework.
- Objective CAML.
- OpenLaszlo.
- Perl.
- PHP:
  - PHP 5.2.
  - json.
  - Services\_JSON.
  - Zend\_JSON.
  - JSONRPC.
  - Solar\_Json.
  - SCA\_SDO.
  - Comparison of php json libraries.
- Pike:
  - Public.Parser.JSON.
  - Public.Parser.JSON2.
- pl/sql.
- PowerShell.
- Prolog:
  - SWI-Prolog HTTP support
  - json.prolog.
- Python:
  - demjson.
  - jsonlib.
  - python-cjson.
  - python-json.
  - simplejson.
  - Comparing JSON modules in Python.
  - Choosing a Python JSON Translator.
- R.
- REALbasic.
- Rebol.
- Ruby.
- Squeak.
- Tcl.

Image from <http://www.json.org>.

# Ajax

# JSON

- `json_encode($value)`  
<http://us3.php.net/manual/en/function.json-encode.php>
- `eval(string)`  
<http://www.json.org/js.html>

Ajax

PHP + JSON

- Ajax Loading GIF Generator  
<http://www.ajaxload.info/>
- Ajax Activity Indicators  
<http://mentalized.net/activity-indicators/>
- ...  
[http://ajaxpatterns.org/Progress\\_Indicator](http://ajaxpatterns.org/Progress_Indicator)

Ajax

Progress

- Dojo  
<http://dojotoolkit.org/>
- jQuery  
<http://jquery.com/>
- Prototype  
<http://www.prototypejs.org/>
- script.aculo.us  
<http://script.aculo.us/>
- YUI  
<http://developer.yahoo.com/yui/>

Ajax

Frameworks

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