



Computer Science S-75

Building Dynamic Websites

Harvard Summer School
<https://www.cs75.net/>

Lecture 7: Ajax

David J. Malan
malan@harvard.edu

DOM

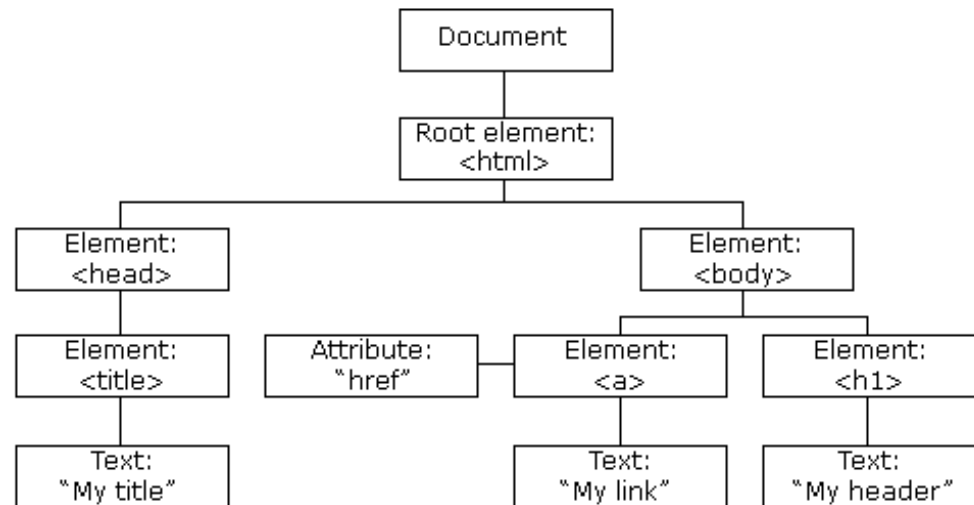
```
<!DOCTYPE html PUBLIC
    "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>My title</title>
  </head>
  <body>
    <a href="">My link</a>
    <h1>My header</h1>
  </body>
</html>
```

DOM

```
<!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>
  </body>
</html>
```



DOM

- HTML DOM Reference
http://www.w3schools.com/html/dom/dom_reference.asp
- DOM (Document Object Model) Reference
<http://www.javascriptkit.com/domref/>
- DOM objects and methods
<http://www.howtocreate.co.uk/tutorials/javascript/domstructure>

XMLHttpRequest

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

Methods

- 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)

Properties

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

Content Types

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

http://www.quirksmode.org/blog/archives/2005/12/the_ajax_respon.html

JSON

<ul style="list-style-type: none"> • ASP. • ActionScript: <ul style="list-style-type: none"> ◦ ActionScript1. ◦ ActionScript2. ◦ ActionScript3. ◦ JSONConnector. • C. <ul style="list-style-type: none"> ◦ JSON_checker. ◦ JSON parser. ◦ json-c. ◦ M's JSON parser. ◦ YAJL. • C++: <ul style="list-style-type: none"> ◦ TinyJSON. ◦ jsoncpp. ◦ zoolib. ◦ Jaula. ◦ JOST. ◦ JSON Spirit. • C#: <ul style="list-style-type: none"> ◦ JSON_checker. ◦ Jayrock. ◦ Json.NET - LINQ to JSON. ◦ JSONSharp. ◦ LitJSON. ◦ JSON for .NET. ◦ JsonFx. ◦ JsonExSerializer. • ColdFusion: <ul style="list-style-type: none"> ◦ ColdFusion 8. ◦ CFJSON. ◦ toJSON. • D. • Delphi: <ul style="list-style-type: none"> ◦ Delphi Web Utils. ◦ JSON Delphi Library. ◦ JSON Toolkit. 	<ul style="list-style-type: none"> • E. • Erlang. • Haskell: <ul style="list-style-type: none"> ◦ JSON.hs. ◦ HaskellNet. • haXe. • Java: <ul style="list-style-type: none"> ◦ 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. • JavaScript. • Lasso. • Lisp: <ul style="list-style-type: none"> ◦ Common Lisp. ◦ Emacs Lisp. ◦ Chicken Scheme. ◦ MZScheme. • LotusScript: <ul style="list-style-type: none"> ◦ JSON LS. ◦ JSON Reader/Writer. • Lua: <ul style="list-style-type: none"> ◦ Json4Lua. ◦ Json.lua. 	<ul style="list-style-type: none"> • Objective C: <ul style="list-style-type: none"> ◦ BJSONAdditions. ◦ Cocoa JSON Framework. • Objective CAML. • OpenLaszlo. • Perl. • PHP: <ul style="list-style-type: none"> ◦ PHP 5.2. ◦ json. ◦ Services_JSON. ◦ Zend_JSON. ◦ JSONRPC. ◦ Solar_Json. ◦ SCA_SDO. ◦ Comparison of php json libraries. • Pike: <ul style="list-style-type: none"> ◦ Public.Parser.JSON. ◦ Public.Parser.JSON2. • pl/sql. • PowerShell. • Prolog. • Python: <ul style="list-style-type: none"> ◦ python-cjson. ◦ simplejson. ◦ python-json. ◦ demjson. ◦ pyparsing. ◦ Choosing a Python JSON Translator. • R. • REALbasic. • Rebol. • Ruby. • Squeak. • Tcl.
--	--	--

PHP + JSON

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

Progress...

- Ajax loading gif generator
<http://www.ajaxload.info/>
- AJAX Activity indicators
<http://mentalized.net/activity-indicators/>
- . . .

http://ajaxpatterns.org/Progress_Indicator



jQuery.ajax()

<http://api.jquery.com/jQuery.ajax/>



YUI Connection Manager

<http://developer.yahoo.com/yui/connection/>



Computer Science S-75

Building Dynamic Websites

Harvard Summer School
<https://www.cs75.net/>

Lecture 7: Ajax

David J. Malan
malan@harvard.edu