

Lecture 10 – Ajax and jQuery

INLS 760

Web Databases

Spring 2013

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AJAX

What is AJAX?

1. The “original” Ajax... is in Agamemnon’s army
2. Another Ajax... is “stronger than dirt”
3. Asynchronous JavaScript and XML

Where can I get Ajax?

1. Homer’s Iliad
2. Try the grocery store
3. There is nothing to “get” support is built-in to modern browsers. Ajax is a programming technique.

What does AJAX do?

- Traditional use of HTTP causes pages to be reloaded when data is exchanged
- AJAX uses JavaScript's XMLHttpRequest method to exchange data with the server without reloading the current page.
 - This enables quick, small transactions
 - Client can communicate more often with the server
 - More flexible user-interfaces can be built
 - Web applications can look/act more like desktop apps

Digging Deeper

- Traditional HTTP communication
 - User clicks a link or presses a form button
 - Client browser makes an HTTP request using either GET or POST
 - Server processes request and sends a response
 - Browser loads the response in a new web page

Digging Deeper

- AJAX
 - JavaScript event fires
 - calls user defined JavaScript function
 - Client browser makes a request using XMLHttpRequest
 - Client sets a handler to process the response when it arrives
 - This communication is asynchronous, so response could arrive whenever
 - When the response arrives, a client handler does something
 - For example, update just a PART of the page

“Real-World” Example

- Google Suggest

Simple Example – Client Side

```
<form name="myForm">  
  Name: <input type="text"  
        onkeyup="ajaxFunction();" name="username" />  
  Time: <input type="text" name="time" />  
</form>
```

This example code is from

http://www.w3schools.com/ajax/ajax_browsers.asp

Client Side – Browser Check

```
function ajaxFunction()  
{  
    var xmlhttp;  
    try {  
        // Firefox, Opera 8.0+, Safari  
        xmlhttp=new XMLHttpRequest();  
    } catch (e) {  
        alert("Your browser does not support our brand of  
AJAX!");  
        return false;  
    }  
}
```

lect10/ajaxff.php

Client Side – Handle Response

```
xmlHttp.onreadystatechange=function()  
{  
  if(xmlHttp.readyState==4)  
  {  
    // Get data from the server  
    document.myForm.time.value =  
      xmlHttp.responseText;  
  }  
}  
// Ask the server for some data  
xmlHttp.open("GET","time.php",true);  
xmlHttp.send(null);  
} // close the ajax function
```

4 = completed

True means handle asynchronously

Simple Example – Server Side

lect10/time.php

```
<?php
    header("Cache-Control: no-cache, must-revalidate");

    // Date in the past
    header("Expires: Mon, 26 Jul 1997 05:00:00 GMT");

    echo date('h:i:s');
?>
```

Ajax Tutorials

- W3schools
 - <http://www.w3schools.com/ajax/default.asp>
- Tizag
 - <http://www.tizag.com/ajaxTutorial/index.php>
- IBM developerWorks
 - <http://www.ibm.com/developerworks/web/library/wa-ajaxintro1.html>
 - http://www-128.ibm.com/developerworks/views/web/libraryview.jsp?search_by=Mastering+Ajax

Ajax + MySQL

- Search interface
- Develop together in class
 - [lect10/ajax-db.html](#)

ajax libraries

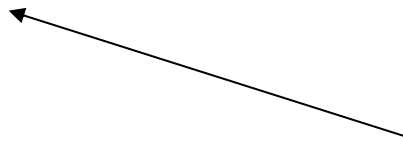
- Many developers use ajax libraries
 - jQuery
 - Prototype
 - script.aculo.us
 - many others

ajax in jQuery

```
<body>
<h1>jQuery ajax test</h1>
<table border="1" width="100%">
<tr>
  <td width="30%">
    <div id="fred">
      fred<br>
      <button onclick='lucy();'>Click me!</button>
    </div>
  </td>
  <td width="70%">
    <div id="ethel">
      ethel<br>
    </div>
  </td>
</tr>
</table>
</body>
</HTML>
```

lect10/twodiv.html
(part 2)

lucy() is defined in
<head>, see part 1



See: <http://docs.jquery.com/Tutorials>

ajax in jQuery

lect10/twodiv.html
(part 1)

```
<HTML>
<head>
<script type="text/javascript"
  src="http://ajax.googleapis.com/ajax/libs/jquery/1.4.2/jquery.min.js">
</script>
<script type="text/javascript">
  function lucy() {
    $.ajax({
      type: "POST",
      dataType: "html",
      url: "twodiv.php",
      success: function(data) {
        $("#ethel").append(data);
        $("#ethel").append("<br>");
      }
    });
  }
</script>
</head>
```

ajax call to server

"anonymous" function to be executed on ajax success; data returned from server is put into "data"

jQuery syntax for appending data onto a specific div

ajax in jQuery

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