

AJAX

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By Vijay Shivakumar
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Web Specialist®



AJAX

About Me

Vijay Shivakumar

Designer | Developer | Trainer

Training on web technologies and Adobe products from past 10 years

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AJAX

About You

Designer

Developer

Software Programmer

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Prerequisites

HTML / XHTML

CSS

JavaScript

XML

Programming Fundamentals

Willingness to learn

Keep pace with other participants this is a hands on training



Course Agenda

Basic standards for ajax

Learn using ajax

Browser support

Dealing with different data formats

Server side ajax

Cross domain ajax

New HTML5 ajax

Frameworks and toolkits for ajax

AJAX

What you need?

Aptana Studio 3.2.2

notepad++

editpad

notepad

Internet Explorer recommended 9 or above

Firefox latest (15.x)

**Internet connection to download JavaScript
and xml files**

AJAX

What is Ajax ?

AJAX = Asynchronous JavaScript and XML.

Based on JavaScript and HTTP requests.

**Type of programming made popular in 2005
by Google.**

**Is not a new programming language, but a
new way to use existing standards.**

**Term AJAX was coined in February 18, 2005,
by Jesse James Garret**



AJAX

Basics for AJAX

HTML

CSS - Cascading Style Sheets

DOM Events

JavaScript

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HTML

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01  
Transitional//EN""http://www.w3.org/TR/html4/loose.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml">  
  
<head>  
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />  
    <title>your web page title</title>  
    <script type="text/javascript"></script>  
</head>  
  
<body>  
    <div></div>  
</body>  
</html>
```



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CSS

Inline style

```
<div style="width:200px; height:200px"></div>
```

Page style / Embedded style

```
<style type="text/css">  
    div{      width: 200px; height: 200px;      }  
</style>
```

External style

```
<style type="text/css">  
    @import url("mystyle.css")  
</style>  
<link href="mystyle.css" type="text/css" rel="stylesheet" />
```



Selectors

Specificity

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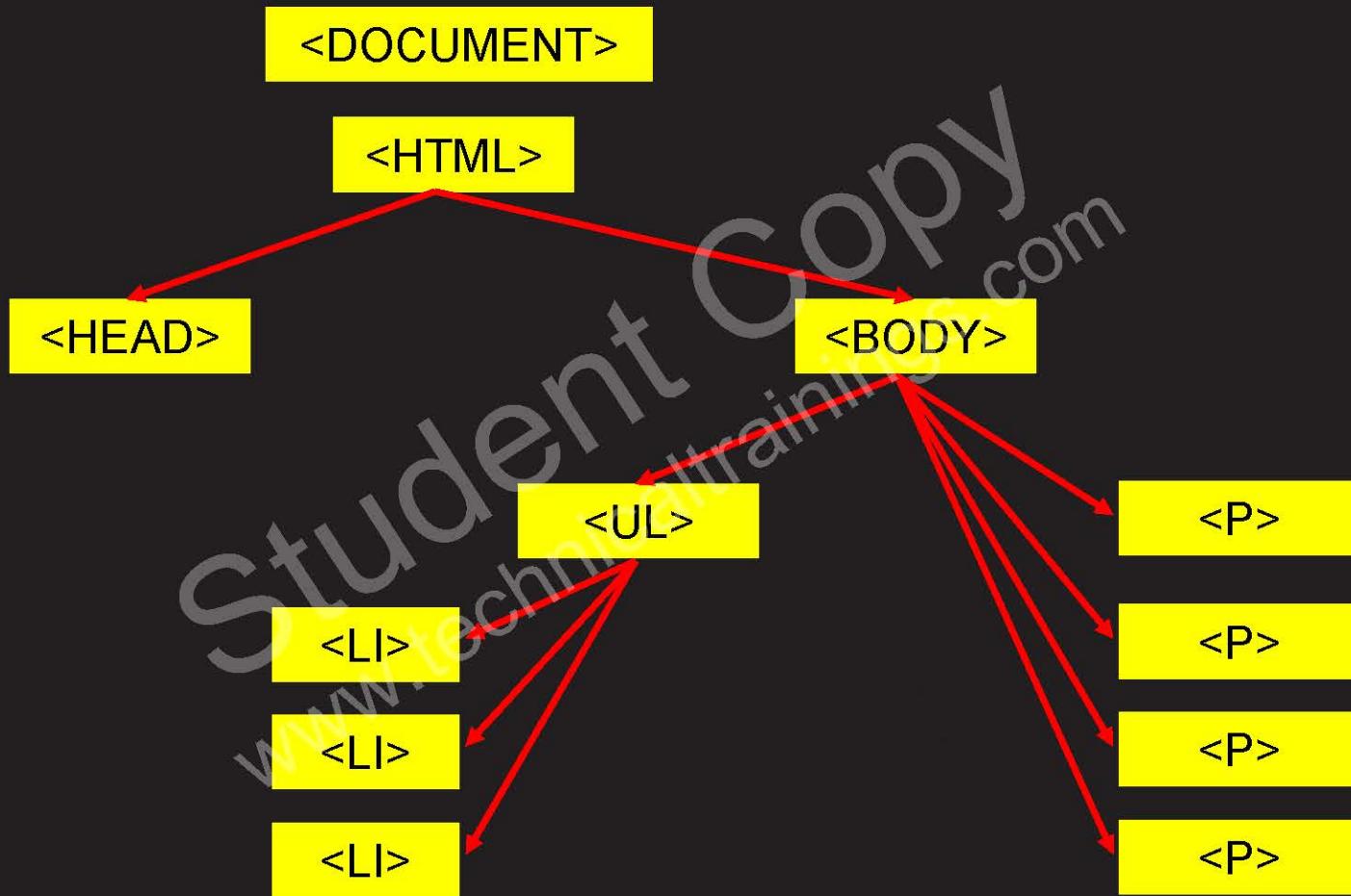
DOM

- DOM selection
- DOM creation
- DOM attributes
- DOM removing
- DOM navigation

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DOM





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JavaScript

Using JavaScript to access CSS

Reading / Modifying

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JS Events

- DOM Events
- Native Events
- Inline Events
- Unobtrusive
- Cross Browser Event Implementation
- Event Object
- Event Flow



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JS OOP

Differences between classical & prototypical

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HTTP Request



HTML, XML, JavaScript, Images, audio/video etc...



XMLHttpRequest

The XMLHttpRequest Advantages

- In a traditional request the user waits a lot before the data is displayed on the page
- Ajax makes the wait time lot lesser 😊
- Saves bandwidth makes your application responsive and fast etc...



XMLHttpRequest

The XMLHttpRequest

- Cross browser JavaScript object that can request data from server without refreshing the page.
- It was first implemented by Microsoft in IE 5
- Now supported by W3C



AJAX

XMLHttpRequest

Properties of XMLHttpRequest object

readyState

responseText

responseXML

status

statusText



XMLHttpRequest

Properties of XMLHttpRequest object

readyState is not cross browser friendly

- 0 = Uninitialized (object contains no data)
- 1 = Open (object is currently open)
- 2 = Sent (object finished sending request for data)
- 3 = Receiving (receiving data or processing returned data)
- 4 = Loaded (object finished initializing)

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XMLHttpRequest

Properties of XMLHttpRequest object

status

200	=	OK
400	=	Bad request
401	=	Unauthorized
403	=	Forbidden
404	=	Not found
500	=	Internal server error



XMLHttpRequest

Methods of XMLHttpRequest object

abort() | Cancels the request

getAllResponseHeaders()

getResponseHeaders()

**open("method","URL", async(false sync , true
async) ,["user" , "pass"])**

send(content for post or null/empty for get)

setRequestHeader("label","value")



XMLHttpRequest

Methods of XMLHttpRequest object

setRequestHeader("label","value")

setRequestHeader("Content-Type", "application/x-www-form-urlencoded");

setRequestHeader("Content-Type", "text/xml");

setRequestHeader("Content-Type", "application/json");

setRequestHeader("Content-Type", "text/plain");



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XMLHttpRequest

Event Handlers of XMLHttpRequest

onreadystatechange()

Firefox Specific Events (Use at your own risk)

onload triggered when readyState is 4

(basically fires only when the load is complete)

onprogress triggered for any progress

Onerror triggered when any error happens

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HTTP Request

Cross Origin Request





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XMLHttpRequest

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Frameworks

Prototype

Scriptaculous

Dojo

YUI

Mootools

jQuery

ExtJS

GWT (Java)

DWR (Java)

Ajax for ASP.NET

200+ more...



AJAX

Prototype.js

- Prototype is a free, open source JavaScript library that works across modern web browsers.
- Easy dynamic web application development
- Abstracts all the browser differences
- Began in 2005 as a Ruby on Rails framework
- More info on <http://prototypejs.org>

AJAX

Prototype.js

Browser Support for Prototype



6.0 or Greater



2.6 or Greater



9.2.X or Greater



1.5 or Greater



1.0 or Greater



AJAX

Prototype.js

Main Objectives

- Dom Manipulation
- Events
- Ajax
- Effects via scriptaculous

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Selection of DOM

- **\$()** select elms with an ID
 - An alternate for `document.getElementById()`;
- **\$\$()** retrieves an array of element with matching css selector
- **\$F()** retrieves form values.



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Scriptaculous.js

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Mootools

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dōjō

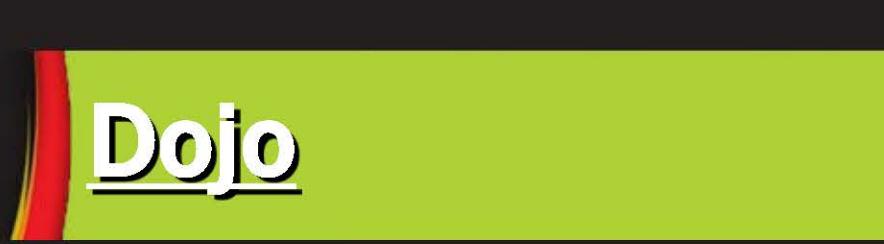
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Dojo

Comes with 3 packages

Dojo

Dijit

DojoX

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