

AJAX for Java Developers

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This two-day course starts with an introduction to using XMLHttpRequest and its properties and methods. It includes in-depth coverage of programming with AJAX to send and retrieve data to and from a server, updating a Web page with JavaScript, and using CSS to modify the look of a Web page.

The course includes detailed coverage of how to handle AJAX requests using Servlets/JSP and Java Web applications. This includes generation of HTML, XML and JSON from Java, as well as the use of various other server-side AJAX techniques.

The course also provides coverage on using frameworks - both client side JavaScript and server side Java - to support the complex programming that AJAX requires. These frameworks can reduce the sometimes complex and tedious programming that AJAX can require. Covered are frameworks like Prototype, Scriptaculous, rico, JSON, DOJO, Direct Web Remoting (DWR) to invoke server side Java from JavaScript.

It also includes doing ajax to receive RSS feeds and addresses the security issues concerning ajax (like server of origin policy implemented by recent browsers).

This course is hands on with labs(30% theory and 70% hands-on) to reinforce all the important concepts. It will enable you to build working AJAX applications, and give you an understanding of the important concepts and technology in a very short time.

Course Objectives

Understand the principles of interactive Web applications and how AJAX is used to create them.

Understand how XMLHttpRequest works, and use it with JavaScript to update a Web page.

Use Servlets/JSP to handle AJAX requests.

Understand JSON (JavaScript Object Notation).

Use JavaScript and DOM with AJAX to manipulate the structure of a Web page.

Be familiar with using AJAX with XML/XSLT.

Be familiar with AJAX technologies and frameworks such as Prototype, script.aculo.us, Dojo, JSON libraries, DWR (Direct Web Remoting) and rico.

Understand the basics of CSS and use it with AJAX to dynamically change the Web page look.

Understand issues with using AJAX technology.

Audience

Web developers using AJAX and Java developers who need to work with AJAX-based Web applications.

Prerequisites

Basic knowledge of HTML and JavaScript as well as practical Java and Servlet/JSP programming skills

Course Length

Course Length = 2 Days.

Materials Included

Printed Course Material

Course Contents

1. Introduction to ajax.
2. Cross-browser syntax to get the XMLHttpRequest object.
3. XMLHttpRequest object's methods and properties.

Basic ajax:

1. Using the XMLHttpRequest object for a get request.
2. A form submit using ajax (using post method).
3. Building our own javascript library for ajax routines and testing it.
4. Receiving xml from server (using responseXML property of XMLHttpRequest).
5. Using ajax to receive RSS - processing the rss file on client.
6. Understanding "server of origin policy" : Refactoring previous demo by processing rss on the server.
7. Introduction to JSON syntax: Receiving data from server as a string formatted in json format and using javascript to get a JSON object from this string.

Implications of Ajax

1. Advantages and disadvantages of ajax.

2. ajax security issues.

Creating ajax widgets : using ajax in forms:

1. check for a unique userid in a sign-up form without page refresh.
2. Based on user selection populate a select with values from server without page refresh.(Manipulate DOM structure by using javascript).
3. Creating an auto-suggest field - AutoSuggest.html

Ajax Techniques and Patterns:

1. Setting a time limit for request object.
2. Ajax and XSLT.
3. Predictive fetch pattern.
4. Window auto scroll.
5. Show/Hide a topic on screen.
6. Fade yellow technique.
7. Polling the server (using different timestamp technique to prevent browser cache).

Introduction to third-party libraries:

1. Introduction to prototype : Ajax syntax in prototype.
2. Introduction to rico : Creating a drag and drop web-UI (like nokia.co.in) which stimulates ajax at the end of the drag.
3. Introduction to scriptaculous -
 - a. using effects from this library.
 - b. creating google-like auto-suggest field using
4. Introduction to DWR
 - a. Steps for setting up to work with dwr.
 - b. Calling methods of java.util.date from client.
 - c. Calling method of a user defined class to populate a select.
 - d. Using utility functions of dwr.
5. Introduction to DOJO -
 - a. Using dojoType, widgetId, dojo.require ,dojo.addOnLoad, and dojo.event.connect.
 - b. Dojo's syntax for performing ajax : using dojo.io.bind
 - c. creating a validation application with classic ajax and then refactoring using dojo : appreciating the reduction in number of lines of code by using dojo.
 - d. using mimetype, dojo.byId and dojo.dom
 - c. Dojo's built-in widgets : the calendar widget and the editor widget.
 - d. using JSON library with DOJO.

Software Requirements

- 1 . Jdk 1.5
2. Net-beans 5.0
3. FireFox browser
4. Internet access to following URLs:
<http://rss.news.yahoo.com/rss/topstories>



<http://www.nokia.co.in>