

Technical Training Solutions



ADVANCED XML, XSLT & XPATH (3 Day Course)

Technical
Course
Outline

Course Summary

The goal of this course is to provide students with an advanced level of understanding of what can be done with Extensible Markup Language (XML) and the technologies that support it.

Students will further their knowledge of XSLT and XPath and perform extreme transformations of XML data. XML Namespaces are revisited to learn how to utilize them in parsing situations. This course explores the W3C Document Object Model to show students how to effectively parse and manipulate XML data in an object-oriented way. The powerful XML Schema standard is covered - - students will build a schema and then use it for validation purposes. Lastly, students will build a simulated B2B XML data exchange using Microsoft's XMLHTTP ActiveX control (which is the basis for the extremely popular AJAX web technology) to perform asynchronous XML operations.

Intended Audience:

This course is intended for **existing XML application developers** who wish to leverage the power that XML, XSLT, XPath, Schemas, Namespaces, and the W3C DOM offer in order to build an array of XML applications.

Prerequisites:

To ensure an effective learning environment *for all attendees*, it is imperative that *each student* meet minimum course prerequisites. **Students that do not meet these stated requirements may be asked to leave the course.**

- Basic word processing and Windows skills (i.e. switching between open windows, file copying, renaming, & moving)
- Successful completion of, or 90% proficiency with, the topics from the following courses
(Please refer to each course outline to make sure you meet these requirements):
 - "Introduction to HTML, XHTML, & CSS"
 - "Introduction to JavaScript"
 - "Introduction to XML"
- Fundamental knowledge/experience working *with relational databases*.

Course Contents:

XML Overview/Review

- "Well Formed" XML
- "Valid" XML
- XML Parsers

Advanced XML DOM Usage

- Checking For "Well-Formedness" Via Code
- Parsing The XML Node Tree
- Programmatically Creating New XML Nodes
- Working With NodeLists
- More W3C DOM Objects, Properties & Methods
- Microsoft DOM Extensions

Advanced Style Sheet Usage

- XSLT/XPath Warm-Up
- Using XPath To Query For Specific XML Namespace Data
- `<xsl:include>`
- `<xsl:import>` & `<xsl:apply-imports>`
- `<xsl:variable>` & XSL Variable Referencing
- XPath Predicates

Generating XML Data From A Database

- Active Server Pages (ASP) Review (Brief Overview)
- ActiveX Data Objects (ADO) Overview (Brief Overview)
- Preparing The Web Client To Receive XML
- Assembling The New XML Data

Server-Side XML Processing

- Using The XML DOM Server-Side
- Reading In Existing XML Data
- Synchronous & Asynchronous XML Data Passing

Introduction To AJAX

- The Accidental Invention of Web 2.0
- The `ServerXMLHTTP` Object
- The `XMLHttpRequest` Object
- Preparing The Request
- Receiving The Response
- The `ResponseText` Property
- The `ResponseXml` Property

XML Validation

- Document Type Definitions (DTD's) Revisited
- The W3C XML Schema Standard
 - Creating Schema Definitions
 - Element & Attribute Declarations
 - Data Typing
 - Simple vs. Complex Types
 - Adding Restrictions
- Performing Schema Validations
 - Linking XML To An .xsd
 - The `XMLSchemaCache`
- Error Handling Via The `ParseError` Object