

XML: A Comprehensive Hands-On Introduction - 4 Days

Course 542 Overview

- You Will Learn How To**
- Leverage the power of Extensible Markup Language (XML) and related technologies
 - Access, modify and search XML documents using the Document Object Model (DOM) and XQuery
 - Transform XML documents into other formats and apply presentation styles with XSL
 - Ensure XML data is valid and conforms to design requirements using schemas
 - Implement strategies to secure XML data interchange
 - Integrate XML into Web Services and Ajax applications

Course Benefits XML has become a standard technology that allows enterprise systems to maintain constant and immediate access to customers and business partners in order to remain competitive. XML-based formats have become the default for systems offering an effective way to conduct business-to-business transactions and handling data interchange. In this course, you gain comprehensive knowledge and hands-on experience using XML and related technologies including XSL, schemas, XPath, XQuery and DOM.

Who Should Attend Those involved in developing enterprise solutions or anyone wanting to gain more knowledge about XML.

Hands-On Training Hands-on experience developing XML solutions is provided throughout this course. Exercises include:

- Creating well-formed XML documents
- Searching XML documents with XQuery
- Extracting XML from relational databases
- Designing XML documents from business requirements
- Reading and creating XML documents using the DOM
- Encapsulating business and validation rules in an XML schema
- Rendering an XML document as HTML and PDF
- Investigating Web Services and Ajax applications

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Course 542 Outline

Introduction and Overview

Demystifying XML

- Surveying the XML landscape
- The business benefits of XML

XML in the real world

- Exchanging data with XML: RSS, Ajax, Web Services
- XML best practices

Designing and Implementing XML Documents

XML document structure

- The document root and prolog
- Elements
- Attributes
- Entities
- Namespaces
- Differentiating between well-formed and valid documents
- Exploiting popular XML editing tools

XML design and data mapping

- Elements vs. attributes
- Design techniques
- Designing an XML document from a requirements document

Distinguishing dialects with namespaces

- Adhering to proper naming conventions
- Eliminating document ambiguity with namespaces
- Defining namespaces using Uniform Resource Identifiers (URI)

Generating and Updating XML Documents

The XML processing models

- Document Object Model
- Event-driven processing
- Navigating a document with XPath
- Querying a document with XQuery
- Differences between event-driven and tree-based models

Communicating with databases using XML

- Database storage options
- Retrieving database results as XML
- Reformatting database results with XQuery
- Storing XML with a native XML data type

Processing information with the DOM

- Navigating XML documents

- Extracting and modifying data
- Building XML documents from scratch
- Creating element and text nodes

- Enabling an Ajax-powered web page with XML

Validating XML Data

Constraining XML structure and content

- Defining an XML structure with Document Type Definitions (DTDs)
- Building XML schemas to validate XML structure and data

Validation with XML schemas

- XML schema syntax and components
- Writing schemas to restrict XML content
- Specifying valid elements and attributes
- Encapsulating business rules in XML schemas
- Leveraging schema datatypes

Extending schemas

- Importing existing schemas
- Leveraging modular schemas
- Defining custom user-defined types

Transforming Documents with Extensible Style Language (XSL)

The power of XML transformation

- Converting XML documents to adhere to different schemas
- Processing documents with pattern matching
- Specifying output format with templates
- XSL best practices

Applying style to data

- Formatting XML data for presentation
- Styling XML for display as HTML and PDF

Searching and filtering with XPath

- Formatting and sequencing XML data
- Sorting, grouping and filtering output

Application Security and Integration

Securing XML applications

- Implementing transport security
- Encrypting XML data
- Enabling SOAP security with WS-Security

Integrating applications with XML

- Communicating with XML messaging
- Investigating Web Services, SOAP and WSDL