

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