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Learning Style: Virtual Classroom

Technology:

Difficulty: Beginner

Course Duration: 3 Days

Introduction to XML | XML Fundamentals (TT4300)

About this course:

Core XML is a three day in-depth course geared for software developers who need to understand what XML is and how to use in with today's systems and architectures. This course covers the topics from tags to architectures.

This course is an intensive, hands-on treatment of XML, XPath, and XSLT. The course is a balanced mixture of theory and practical labs designed to take students from a quick review of the basic fundamentals of XML through to the related advanced technologies. The students walk through the different standards in a structured manner to enable them to master the concepts and ideas, which are reinforced in the lab exercises. The course starts with a quick review of the fundamentals of XML before covering XML Schema in detail. It then moves on to the XPath and XSLT covering advanced topics in both. Finally, XML and Web Services security mechanisms and issues are addressed.

The average salary of an XML Developer is **$74,480** per year.

Course Objective:

- Write well-formed XML documents
- Model business requirements using XML
- Handle XML reserved characters
- Validate an XML document with a DTD and with a Schema
- Centralize data and markup definition with entities
- Create Schemas using XML tools
- Generate XML documents from databases
- Write and debug XSLT stylesheets to transform XML documents into any other text representation
- Integrate XML, XSL and the DOM to implement a complete solution

Audience:

- This is a **basic** level XML training course, designed for those needing an introduction to concepts and technologies associated with XML and its related recommendations

Prerequisite:

- Previous experience or knowledge of HTML is helpful but not essential.

Course Outline:

Module 1: XML Content

Lesson: Introduction to XML

- XML Separates Structure, Content and Format
- Content: XML Document Syntax Rules
- Structure: DTD or XML Schema
- Formatting: XSLT Transformation to HTML

Lesson: XML Mechanics

- XML Document Structure
- Rules for Well-Formed XML
- Content as MarkUp
- Namespaces Associate Alias with a URI

Module 2: XML Structure

Lesson: Namespaces

- XML Namespaces
- Name Collisions
- Namespace Scope
- Namespaces Best Practices

Lesson: Structure Using Schemas

- Document Type Definition (DTD)…
- W3C XML Schemas
- Elements, Attributes, and Types
- Restricting Simple Types: Facets
- Complex Types
- Attribute Definitions
- Derivation by Extension
- Using XML Schema with Namespaces

Module 3: XML Formatting

Lesson: CSS and Rendering XML

- Cascading Style Sheets and XML
- XML/CSS Processing Flow

Lesson: XSL Transformations

- XPath Describes Locations Within XML
- XSLT is Rule-Based Transformation Language
- XSL is Oriented Towards Formatting

Lesson: XSLT and XPath

- XPath Data Model

- Location Paths
- Additional Filtering
- XPath Operators and Functions
- XSLT Stylesheet Structure
- Templates Are The Rules
- Conflict Resolution for Templates
- Calling Templates
- Looping, Sorting and Conditional Processing Constructs

Lesson: XPath 2.0 and XSLT 2.0 Overview

- XPath 2.0 Improvements
- XPath 2.0 and XQuery 1.0
- XSLT 2.0 Improvements

Lesson: XSL FO (Formatting Objects)

- XSL Family Working Together

- Apache's FOP: Rendering XML

- Page Types Can Be Conditional

- Content Flows Into Page Regions

Module 4: Applying XML

Lesson: XML Interoperability

- XML From a Data Perspective

- XML/Database Interfacing

- Challenges to Mapping XML

Lesson: XML Performance Improvements

- Best Practices

- Organization of Best Practices

Lesson: Web Services Overview

- XML in Web Services

- WSDL: Description

- Many Web Services Challenges

Lesson: XML Applications

- W3C Activities

- Benefits of XML

- Drawbacks of XML

- Crossing Boundaries

- Challenges to Integration