

Course Outline



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Advanced XML: Schema Design

Course Description:

This course introduces XML Schemas, the new and preferred way to design and validate XML documents and data. The XML Schemas specification is maintained by the W3C (World Wide Web Consortium) and achieved full Recommendation status in the spring of 2001. It is a core part of the growing family of XML technologies, and is set to replace the XDR (XML Data Reduced) and various other schema recommendations that had been used while the industry waited for the final recommendation. Students in this course will learn all the basic components of the XML Schemas recommendation, including its elements, attributes, data types, and facets. They will also learn techniques for XML document and data modeling, an essential aspect of Schema design. The MSXML 4.0 parser is used for document validation. A simple text editor, such as Notepad, is used for editing.

Upon successful completion of this course, students will be able to:

- Analyze the role of schemas in XML validation and their strengths over alternatives and use the MSXML parser to validate documents using two earlier validation methods (DTDs and XDR schemas).
- Plan and model information from diverse sources by creating an ontology and then mapping that ontology to XML components.
- Create element and attribute declarations, complex type definitions, and annotation information in writing your first schema.
- Increase the control that a schema has by using restrictions based on occurrence and identity constraints.
- Use data types, derived simple types, and facets to add more power to a schema.
- Provide additional modularity to your XML by importing, including, and redefining schemas and definitions.

Pre-requisites:

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This course was designed for the student who already has a general knowledge of the concepts and technologies involved in XML programming.

Prior knowledge of XML DTDs is very helpful for this course.

Prior knowledge of traditional Web development technologies, such as HTML and Web scripting, is helpful but not required.

Students will learn the basics of the XML Schemas recommendation, as well as techniques for XML document and data modeling.

This course is for anyone already introduced to the basics of XML and its related technologies, and who is interested in XML programming and data/document modeling. Knowledge of and experience with XML DTD design is preferable.

Course Content:

- **XML and the Rise of Schemas**
 - The World of XML
 - XML and its Related Technologies
 - DTDs and the Role of Validation
 - The Rise of XML Schemas
- **XML Document and Data Modeling**
 - The Planning Stage
 - Modeling Documents, Data, and the World
- **Elements, Attributes, and Complex Types**
 - Schema Namespaces and Documentation
 - Complex Type Definitions
 - Element Declarations
 - Attribute Declarations
- **Occurrence and Identity Constraints**
 - Minimum and Maximum Occurrence Constraints
 - Schema Keys and Data Uniqueness
- **Data Types and Facets**
 - Data Typing and its Importance
 - Explicit Simple Type Definitions
 - XSD Facets

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- **Schema Modularity**

Course Duration:

1 Days