

Training: Capstone Courseware
517 XML Schema

TRAINING GOALS:

This course gives the student who knows the fundamentals of XML a detailed introduction to the **XML Schema** standard for defining document type information.

The first module introduces the new **XML Schema** recommendation. Students review the shortcomings of the DTD for expressing type information, and learn how to use XML Schema to create strict document models. Schema data types and structures are studied, allowing precise grammar and validation rules to be defined for document content.

A second module offers intermediate-to-advanced instruction in effective use of the new XML Schema recommendation. Students build skills in use of keys and key references to associate elements based on key fields; cover complex-type extension; use of multiple namespaces and schema; and finally a chapter in best-practices in schema design.

CONSPECT:

Module 1. Introduction to XML Schema

- Chapter 1. Getting Started with XML Schema
 - What is an XML schema?
 - Schemas vs. DTDs
 - Structure of a Schema
 - Associating Schema with Documents
 - Types of Types
 - Defining Elements
 - Defining Complex Types
 - Validation
- Chapter 2. Simple Types
 - Simple and Atomic Types
 - Built-In Types
 - Primitives
 - Numeric Derived Types
 - String Derived Types

- Simple Type Restriction
- Facets
- Enumerations
- Patterns
- Lists
- Unions
- Nillable Values
- Chapter 3. Complex Types
 - Model Groups
 - Sequences, Conjunctions, and Disjunctions
 - Particles
 - Occurrence Constraints
 - Global and Local Definitions
 - Defining Attributes
 - Empty, Any, and Mixed Content
 - Model Group Definitions
 - Attribute Group Definitions
 - Annotations

Module 2. Advanced XML Schema

- Chapter 1. Keys and Key References
 - Schema as Object Models
 - UML for XML
 - Composition
 - Association
 - Identity Constraints
 - Asserting Uniqueness
 - Keys and Key References
 - Controlling Association Cardinality
- Chapter 2. Reusing Schema Types
 - Type Specialization
 - Extending Complex Types
 - Using Extended Types
 - Derivation by Restriction
 - Abstract Types
 - Substitution Groups

- "Complete" Specialization (The final Attribute)
- Chapter 3. Namespaces and Schema
 - Using Namespaces in Documents
 - Populating a Namespace
 - Qualified and Unqualified Locals
 - Multiple Namespaces in Schema
 - Importing and Including Schema
 - Multiple Schema per Namespace
 - Validating by Namespace (Wildcards)
- Chapter 4. Using Schema in XML Applications
 - Schema Design Issues
 - Type Granularity
 - Ease of Parsing, Transformation, Presentation and Maintenance
 - Mapping from Object Models
 - Mapping from Database Schema
 - Foreign-Key Relationships
 - XSLT for Validation
 - Application Validation

REQUIREMENTS:

- A basic knowledge of [XML](#), such as provided by Course 501.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Capstone Courseware.

TRAINER:

Authorized Capstone Courseware Trainer.