

Soft-Train



*At Soft-Train
Technology Works*

Web Design with XML

(4 Days)

ST80004

COURSE GOAL: Teach the students the concepts behind programming and using XML for Web design.

PREREQUISITES: None

LEARNING OBJECTIVES:

Upon completion of this course the student will be able to:

- Understand the basic concepts of Web Design with XML.
- Model Information.
- Use Schemas
- Understand and use Stylesheets.
- Understand how to choose and use a compiler for their XML code.

KEY TOPICS:

I. What is XML

- A. Of Data, Files, and Text
- B. So What is XML
- C. Origin of the XML Standards
- D. Where XML can Be Used, and What You Can Use It For

II. Well-Formed XML

- A. Parsing XML
- B. Tags and Text and Elements
- C. Attributes
- D. Comments
- E. Empty Elements
- F. XML Declarations
- G. Processing Instructions
- H. Illegal PCDATA Characters
- I. Errors in XML

III. XML Namespaces

- A. Why We need Namespaces
- B. How XML Namespaces Work
- C. Understanding URIs
- D. When to Use Namespaces

IV. Document Type Definitions

- A. Running the Samples
- B. Sharing Vocabularies
- C. Anatomy of a DTD
- D. Developing DTDs
- E. DTD Limitations

V. XML Schemas

- A. Benefits of XML Schemas
- B. Do We Still Need DTDs

- C. XML Schemas
- D. Creating a Schema from Multiple Documents
- E. Documenting XML Schemas

- D. The XQuery Data Model
- E. XQuery Expressions
- F. XQuery Functions
- G. Using Parameters with XQuery
- H. User-Defined Functions

VI. Relax NG

- A. XML and Compact Syntaxes
- B. RELAX NG Patterns
- C. Combining and Reusing Patterns and Grammars
- D. Additional RELAX NG Features

VII. XPath

- A. Ways of Looking at an XML Document
- B. Modeling XML Documents
- C. Visualizing XPath
- D. Abbreviated and Unabbreviated Syntax
- E. XPath 1.0 Axes
- F. XPath 1.0 Functions
- G. Predicates
- H. Structure of XPath Expressions
- I. XPath 2.0

VIII. XSLT

- A. What is XSLT
- B. How an XSLT Processor Works
- C. Running Examples
- D. Procedural vs. Declarative Programming
- E. Foundational XSLT Elements
- F. Getting Information from the Source Tree
- G. Conditional Processing

IX. XQuery, the XML Query Language

- A. Why XQuery
- B. XQuery Tools
- C. Some XQuery Examples

X. XML and Databases

- A. The Need for Efficient XML Data Stores
- B. Approaches to Storing XML
- C. Using Native XML Databases
- D. XML in Commercial RDBMSs
- E. XML in an Open Sources RDBMS
- F. Choosing a Database to Store XML

XI. The XML Document Object Model

- A. Purpose of the XML DOM
- B. The Document Object Model at the W3C
- C. Two Ways to View DOM Nodes
- D. Tools to Run the Examples
- E. The Node Object
- F. The Document Interface
- G. How the XML DOM is Used in InfoPath 2007

XII. Simple API for XML (SAX)

- A. What is SAX and Why Was it Invented
- B. Receiving SAX Events
- C. Good SAX and Bad SAX
- D. Consumers, Producers, and Filters

XIII. RSS, Atom, and Content Syndication

- A. Syndication and Meta Data

- B. Working with News Feeds
- C. A Simple Aggregator
- D. Data Quality

XIV. Web Services

- A. What Is an RPC
- B. RPC Protocols
- C. The New RPC Protocol: Web Services
- D. Taking a REST
- E. The Web Services Stack

XV. Soap and WSDL

- A. Laying the Groundwork
- B. Running Examples In Windows 2003, XP, and 2000
- C. The New RPC Protocol: SOAP
- D. Defining Web Services: WSDL

XVI. Ajax

- A. Early Attempts at Asynchronous Updates
- B. Basic Posting Techniques
- C. Transport and Processing on the Server
- D. Server- Side Proxies

XVII. Cascading Style Sheets (CSS)

- A. Introducing CSS
- B. Using CSS for Layout of XML Documents
- C. Laying Out Tabular Data
- D. Kinks in XML Documents
- E. Attribute Content

XVIII. XHTML

- A. Separating Style from Content
- B. Learning XHTML 1.x
- C. Modularized XHTML
- D. What's Next for XHTML

XIX. Scalable Vector Graphics (SVG)

- A. What is SVG
- B. Getting Started
- C. Tangram: A Simple Application
- D. XHTML Wrapper

XX. XForms

- A. How XForms Improves on HTML Forms
- B. XForms Tools
- C. An Illustrative XForms Example
- D. XForms Controls
- E. Constraining XForms Instances
- F. XForms Events
- G. The XForms Action Module
- H. Alternatives to XForms