

XML Parsing using Visual Basic and .NET

BDT4251

This course teaches the different types of XML parsing available in .NET. The course starts off with an overview of the .NET Framework and XML classes found in the System namespace. It then dives into the different parsing methodologies available from Microsoft.

Prerequisites

- Object Innovations course 501, Introduction to XML, or similar. Ability to read and to write well-formed XML. Ability to read a DTD not strictly required, but preferred. A working knowledge of programming Visual Basic .NET, such as from Object Innovations courses 420, Object-Oriented Programming in VB.NET or 421, VB.NET Essentials.

Course Length

- Two Days

Teaching Methods

- Lectures and Hands on examples

Learning Objectives

- Understand the purpose of the .NET Framework XML classes.
- Identify the .NET classes involved in parsing and creating XML documents.
- Identify the trade-offs between cached/non-cached and push/pull XML parsing.
- Modify, create and delete information in an XML document using the DOM .NET classes.
- Handle XML parsing exceptions.
- Parse and validate XML data streams using XmlReader classes.
- Use the XmlTextWriter class to create XML data streams.

Course Outline

BF5

.NET Framework XML Overview

- Pure XML (How is XML used in the .NET Framework)
- Parsing XML
- Core .NET Namespaces
- .NET XML Classes
- The Tradeoffs of Pull/Push and Cached/Non-cached Parsers
- How Does the MSXML fit in .NET
- What Does the W3C say
- What Does the W3C not say
- .NET XmlReader and XmlWriter features
- .NET DOM Parser Features

The Reading XML Streams in .NET

- XML Document Streams
- The XmlTextReader Class
- Accessing Node Properties with the .NET XML Classes
- Traversing the XML Document
- Catching XmlExceptions
- Accessing Attribute Values
- The XmlNodeReader and XmlNodeValidatingReader Classes

Writing XML Streams in .NET

- The XmlWriter Class
- Four Steps for Creating the XML Document

- Common Settings for XML Document Streams
- The XmlTextWriter WriteXXX Methods
- Writing Elements
- Writing Attributes
- Writing Namespaces
- Serializing Objects into XML

The Document Object Model in .NET

- Origins of the DOM
- DOM Levels
- DOM2 Structure
- The XmlDocument Class
- DOM Tree Model
- DOM Interfaces
- XmlDocument, XmlNode and XmlNodeList classes
- XmlElement and XmlNode and XmlNodeList classes
- XmlElement and XmlText Interfaces
- Finding Elements By Name
- Walking the Child List
- The XmlAttribute Interface
- Namespaces and the DOM
- Error Handling
- The ProcessingInstruction Interface
- The DOM and the XML InfoSet
- Object Serialization with the DOM

Manipulating XML Information with the .NET DOM

- Modifying Documents
- Modifying Elements
- Modifying Attributes
- Managing Children
- Cloning
- Splitting Text and Normalizing
- Creating New Documents
- Object Persistence with the DOM
- Adapting Object Models to the DOM

Appendix A. Learning Resources

Appendix B. Core XML: Learning Resources

Appendix C. Core XML: Quick Reference – XML and DTD Grammar