XML Fundamentals in C#

WHAT EXACTLY IS XML ANYWAY?

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Course Goals

Different methods to read XML files
- LINQ to XML, XDocument, XElement
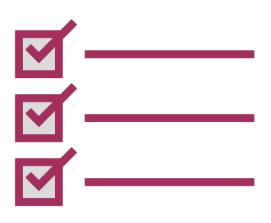
LINQ to XML processing

XPath queries

Serialize .NET objects to XML

Cache frequently used data

I assume you are familiar with...

- .NET
- C#

You want to learn to...

- Read XML documents
- Use LINQ to XML
- Use XPath
- Write XML documents
- See real-world examples

Related Pluralsight Courses

XML Fundamentals

by Dan Sullivan

Using XML and XQuery Effectively with SQL Server

by Bob Beauchemin

XML Syntax Fundamentals

by Ken Holman

Modules in This Course

Modules

What Exactly Is XML Anyway?

- Overview of XML
  - Elements, attributes, etc.
- Example XML documents
- Generate XML schemas
- Validating XML

Modules

LINQ to XML Makes Processing XML Documents Quick and Easy

- Use LINQ to process XML
- Search, sort, and aggregate XML data

Use XPath Queries to Process XML Documents

- Read XML from file and a string
- Select nodes using XPath queries

Modules

Modify Nodes and Write XML Files
- Add, edit, and delete XML nodes
- Write XML files to disk

Store and Restore .NET Objects as XML
- Serialize a .NET object to XML
- Deserialize XML back to a .NET object

Modules

A Design Pattern for Caching Frequently Used Data in XML

- Download data from SQL Server
- Store as XML locally
- Read data locally

XML Overview

What Is XML?

eXtensible Markup Language

Used to store and transport data

No pre-defined tags
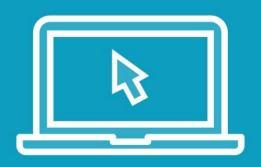
You make up the tags and the data

Uses of XML?

Configuration settings

Cache data locally

Object Serialization

EDI, RSS, Web Services

Document storage (Word, Excel, etc.)

Demo

XML file examples

Demo

Terminology of XML

Tags, Elements, and Attributes

Tag Naming

Must begin with a letter or an underscore

Must contain one letter

Cannot start with "xml"

Can contain letters, digits, hyphens, underscores, and periods

Tag Naming

No spaces in the name

Case sensitive

Make element names readable

Elements

The data itself

Placed between the start and end tag

Identified by tag names

Can have an empty element

<Title></Title> or <Title/>

Demo

Customer XML file using attributes

Schemas

XML Schema

Defines XML structure

What elements & attributes should be present

Repeating elements or not

Helps you validate XML document is correct
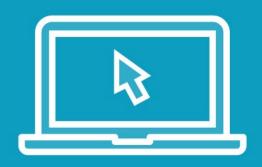
Old version - Document Type Definition (DTD)

New version - Xml Schema Definition (XSD)

Demo

XSD files

Demo

A more complex XSD file

Demo

Free XSD/XML Schema Generator

Demo

Validate XML

Summary

XML is a great way to transport data

Creating XML is easy

Use element-based
- Add a single attribute for an ID if needed

Create a schema
- Helps validate XML document
- Use free online XSD generator

Coming up in the next module...

Using LINQ to XML
Search, sort and aggregate data