This course is an intensive, hands-on treatment of XML, XPath, and XSLT. The course is a balanced mixture of theory and practical labs designed to take students from a quick review of the basic fundamentals of XML through to the related advanced technologies. The students walk through the different standards in a structured manner to enable them to master the concepts and ideas, which are reinforced in the lab exercises. The course starts with a quick review of the fundamentals of XML before covering XML Schema in detail. It then moves on to the XPath and XSLT covering advanced topics in both. Finally, XML and Web Services security mechanisms and issues are addressed.

Skills Gained
Extensible Markup Language (XML) is a standard that is enabling a revolution in web applications and business to business interactions. XML is the basis for Wireless Markup Language (WML), Voice Markup Language (VoiceML), Simple Object Access Protocol (SOAP), Web Services, and numerous industry initiatives such as ACORD (insurance), PXML (proposal/RFP) and OTA (travel). This course is an intensive, hands-on introduction to XML, XPath, and XSLT. The course is a balanced mixture of theory and practical labs designed to take students from the basic fundamentals of XML through to the related advanced technologies. The students walk through the different standards in a structured manner to enable them to master the concepts and ideas, which are reinforced in the lab exercises. The course starts with the fundamentals of XML, including coverage of DTDs and XML Schema. It then moves on to the XPath and XSLT standards, and how to use them to transform XML documents into other documents such as HTML documents or other XML documents.

- Write well-formed XML documents
- Model business requirements using XML
- Handle XML reserved characters
- Validate an XML document with a DTD and with a Schema
- Centralize data and markup definition with entities
- Create DTDs and Schemas using XML tools
- Generate XML documents from databases
- Write XSL templates to transform XML documents into HTML
- Integrate XML, XSL and the DOM to implement a complete solution

Who Can Benefit
This is a basic level XML training course, designed for those needing an introduction to concepts and technologies associated with XML and its related recommendations.

Prerequisites
Previous experience or knowledge of HTML is helpful but not essential.

Course Details
Session: XML Content
Lesson: Introduction to XML
Lesson: XML Mechanics

- XML Document Structure
- Rules for Well-Formed XML
- Content as MarkUp
- Namespaces Associate Alias with a URI

Session: XML Structure
Lesson: Namespaces

- XML Namespaces
- Name Collisions
- Namespace Scope
- Namespaces Best Practices

Lesson: Structure Using Schemas

- Document Type Definition (DTD)...
- W3C XML Schemas
- Elements, Attributes, and Types
- Restricting Simple Types: Facets
- Complex Types
- Attribute Definitions
- Derivation by Extension
- Using XML Schema with Namespaces

Session: XML Formatting
Lesson: CSS and Rendering XML

- Cascading Style Sheets and XML
- XML/CSS Processing Flow

Lesson: XSL Transformations

- XPath Describes Locations Within XML
- XSLT is Rule-Based Transformation Language
- XSL is Oriented Towards Formatting

Lesson: XSLT and XPath

- XPath Data Model
Lesson: XPath 2.0 and XSLT 2.0 Overview

- Location Paths
- Additional Filtering
- XPath Operators and Functions
- XSLT Stylesheet Structure
- Templates Are The Rules
- Conflict Resolution for Templates
- Calling Templates
- Looping, Sorting and Conditional Processing Constructs

Lesson: XPath 2.0 Improvements

- XPath 2.0 Improvements
- XPath 2.0 and XQuery 1.0
- XSLT 2.0 Improvements

Lesson: XSL FO (Formatting Objects)

- XSL Family Working Together
- Apache’s FOP: Rendering XML
- Page Types Can Be Conditional
- Content Flows Into Page Regions

Session: Applying XML
Lesson: XML Interoperability

- XML From a Data Perspective
- XML/Database Interfacing
- Challenges to Mapping XML

Lesson: XML Performance Improvements

- Best Practices
- Organization of Best Practices

Lesson: Web Services Overview

- XML in Web Services
- WSDL: Description
- Many Web Services Challenges

Lesson: XML Applications

- W3C Activities
- Benefits of XML
- Drawbacks of XML
- Crossing Boundaries
# Challenges to Integration

## Schedule (as of 3 )

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Enroll</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 4, 2019 – Nov 6, 2019</td>
<td>Virtual</td>
<td><a href="#">Enroll</a></td>
</tr>
</tbody>
</table>