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## Java XML Programming

(3 days)

### Course overview

Java and XML are two of the most successful technologies of the last decade. The fact that they naturally co-exist in software applications is no coincidence. The combination of the simplicity and flexibility of XML and the functionality of Java makes them a perfect team. Recently, XML has been used in data messaging underpinning distributed applications.

This course provides thorough coverage of how to manipulate and create XML content by using Java APIs.

### What you'll learn

- Manipulating XML data using SAX, StAX, and DOM
- Serializing Java objects to XML using JAXB
- Locating XML content using XPath
- Transforming XML content using XSLT
- Defining and calling SOAP Web services
- Defining and using REST Web services

### Prerequisites

- At least 6 months programming experience
- Familiarity with XML document structure

### Course details

- **XML Essentials:** XML document anatomy; Validating XML documents using DTD and XSD; Transforming XML documents using XSLT
- **Working with the Simple API for XML (SAX):** XML programming techniques; Overview of SAX; Handling elements, attributes, and content; Error handling and validation; SAX and the Java API for XML Processing (JAXP)
- **Working with the Streaming API for XML (StAX):** Overview of StAX; Reading a document using StAX; Creating a new document using StAX
- **Working with the Document Object Model (DOM):** Overview of DOM; Navigating a document; Modifying content; Error handling and validation; DOM and the Java API for XML Processing (JAXP)
- **Using Java Architecture for XML Binding (JAXB):** Overview of JAXB; Simple marshalling; Custom marshalling; Unmarshalling
- **Java and XPath:** Overview of XPath; Using XPath in Java; Filtering results; Using XPath functions and operators; Using XPath 2.0 features

- **Java and XSLT:** Overview of XSLT; Using XSLT in Java; Defining overloaded template rules; Loops and decision making in XSLT; Sorting results; Defining and calling named template rules; Parameterizing template rules; Using XSLT 2.0 and 3.0 features
- **SOAP Web Services:** Overview of SOAP Web services; Defining and calling SOAP Web services in Java; Using Java-WS; Passing complex types to and from a SOAP Web service
- **REST Web Services:** Overview of REST Web services; Implementing REST Web services in Java; Using Java-RS; Working with JSON data