Course Outline

Java Web Services

Course Description:

The Java Web Services course is designed to provide a good level of understanding of Web Services and their place in the application stack, using modern Java technologies. With close attention to the practical issue of building SOAP and RESTful services into applications, delegates will practice creating, deploying, monitoring and using Java Web Services and gain a broad understanding of the Java Web Services landscape.

This course will benefit anyone who needs to create, manipulate, use and understand Java Web Services within a SOA environment.

Pre-requisites:

Java Programming.

Course Content:

- **SOA EXPLAINED**
  - Designing an SOA Architecture
  - Implementing SOAs with Web Services
  - Web Services Overview
  - Java APIs for Web Services

- **XML SUPPORTING WEB SERVICES**
  - XML Basics
  - XML Schema
  - XML Namespaces
  - XPath and XSLT

- **JAVA API'S FOR XML PARSING AND TRANSFORMATION**
  - SAX
  - DOM
  - StAX

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- **SOAP AND WSDL**
  - Introducing SOAP
  - Structure of SOAP messages
  - WSDL
  - Defining Web Service Interfaces
  - SoapUI
  - SAAJ

- **WEB SERVICES WITH JAX-WS**
  - JAX-WS POJO Annotations
  - Configuring and Deploying Web Services

- **IMPLEMENTING JAVA SOAP CLIENTS**
  - Generating Client Artifacts from WSDL
  - Message Monitoring
  - Authenticating and Authorising Clients

- **JAVA ARCHITECTURE FOR XML BINDING (JAXB)**
  - Mapping XML with JAXB
  - Converting Java Arguments with JAXB and JAX-RS

- **RESTFUL WEB SERVICES**
  - The REST Architectural style
  - Comparing SOAP and RESTful Web Services

- **RESTFUL WEB SERVICES WITH JAX-RS**
  - Adding JAX-RS Annotations to a POJO
  - Using HTTP Request Headers
  - Deploying a JAX-WS Service
  - Interacting with Request URLs
  - Mapping URLs to Java Classes and Methods
  - Binding URL Components to Method Arguments

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- **WS SPECIFICATIONS**
  - Web Services Interoperability Technology (WSIT)
  - WSIT Overview
  - WSIT Binary Attachment Scheme (MTOM/XOP)
  - WS-Reliable Messaging

- **SUPPORTING AJAX CLIENTS**
  - Handling JavaScript Object Notation (JSON)
  - JSON with RESTful Services
  - Interpreting a JSON Message
  - JSON Generation with JAXB Annotations
  - JSON Return Types from Java Methods

- **WEB SERVICES SECURITY**
  - WSIT Security
  - Web Services Security - Jersey
  - HTTP Basic Authentication
  - Secure Message Transmission with SSL/TLS
  - Client Authentication and Authorisation

Course Duration: 3 Days