Java Training: SOA Concepts, Design & Implementation (JAV302, 4 days)

Description
The course SOA Concepts, Design & Implementation (Java Training) discusses every aspect of the planning, design and implementation of a Service Oriented Architecture (SOA) with Java. The course covers XML technologies (XML, DOM, SAX, JAX, etc.) with a view to understanding design & implementation considerations in an SOA context. This is followed by a practical exploration of Web Service technologies and their use in Java. Technologies such as JAX-WS, client scripting, AJAX & REST are studied. This course provides participants with a complete, end to end, exploration of the design & implementation of an SOA architecture in Java.

Pricing
- Individual Pricing: $2,775/person
- Guaranteed date and automatic 10% discount when you register 2 people.

Outline
Overview of SOA
- Client vs. Server-Side Technologies
- Distributed Applications: Technology and Infrastructure
- Web Applications: Technology and Infrastructure
- SGML, HTML, XHTML, and XML
- The Need for XML
- SOA Advantages and Disadvantages
- A Note on ITIL V3 and SOA

Key Concepts: From Repositories to Interfaces
- Key Technologies: SOAP and UDDI
- The World of SOAP: Versions and Features
- From Client Code to Service: The Communications Process

XML Technology Essentials
- The Role of XML in Web Service Communications
- How XML Works
- Well Formed XML Documents
- Well-Formed XML Summary
- Document Validation Basics
- Purpose and Design of XML Schemas

Schema Document Basics
- Schema namespaces
- XSD Data Types: Simple and Complex
- Using Element Groups
- Attribute Groups
- Creating Custom Data Types
- Schema Comments

Importing Schemas
- Linking the XML Document to a Schema

Deciphering WSDL
- The Role of XSL - From XSD to XSL
- The Path to SOA Part I – Standards and Requirements

XML Schema Basics
- The Path to SOA Part II – The Design

Understanding SOAP Documents
- Deciding what Functionality will be exposed by the Service
- Separating and Modularizing the Business Logic
- Designing Services at the Appropriate Level of Granularity

The Path to SOA Part III – The Implementation

Identifying the Requirements
- Using Business Use Cases to Define the Process

Using Business Use Cases to Formal Design
- Writing Good Business Use Cases

Deciding what Functionality will be exposed by the Service
- Designing Services at the Appropriate Level of Granularity

The Path to SOA Part IV – Deployment and Governance

The Art of Designing Loosely Coupled Services
- The Art of Breaking down Complex Business Processes

Using Agile Modeling Techniques to Service Design
- Applying Agile Techniques to Service Design

Using UML to Describe Service Design

A Forum on Web Service Technology
- RESTful Web Services using JAX-WS
- RESTful Web Services using JAX-RS
- Understanding REST
- Implementing REST with JAX-WS
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Schema Namespaces
XSD Schemas
Schema Data Types: Simple and Complex
Using Element Groups
Attribute Groups
Creating Custom Data Types
Schema Comments
Importing Schemas
Linking the XML Document to a Schema
Understanding SOAP Documents
Deciphering WSDL
The Role of XSL: From XML to XML and from XML to XHTML
The Path to SOA Part I – Standards and Requirements
Identifying the Requirements
Using Business Use Cases to Define the Process
Writing Good Business Use Cases
Design Principles of an SOA Application
Deciding what Functionality will be exposed by the Service
Separating and Modularizing the Business Logic
The Art of Designing Loosely Coupled Services
Designing Services at the Appropriate Level of Granularity
The Path to SOA Part II – The Design
Applying Agile Modeling Techniques to Service Design
Moving from Use Cases to Formal Design
Using UML to Describe Service Design
The Art of Breaking down Complex Business Processes
Grouping Operations into Services
Factoring in Legacy Systems
The Path to SOA Part III – The Implementation
Developing the Service Interface
Planning and Implementing the Repository
Options for Developing the Service
SLAs and OLAs
Service Validation and Testing
Web Service Messaging Implementation
Creating a Web Service with JAX-WS
Using a Web Service
Exploring WS-Basic Profile
Ensuring Reliability with WS-Reliable Messaging
Messaging
Protecting the Content
Using Page Inputs
Understanding SOA Enablers
What about ESBs?
Event Driven vs. Document XML Processing

JAX Overview
JAX Basics: XML Document Manipulation
Creating New Documents
Applying XSL Transformations in Code
Introducing XML Beans
Client Scripting
The XML Document Object Model
Loading an XML Document
Creating New XML Elements via DOM
Creating New XML Attributes via DOM
XSL Transformations via DOM
AJAX Overview
The XMLHttpRequest Object - AJAX
Understanding REST
Implementing REST with JAX-WS
RESTful Web Services using JAX-RS
A Forum on Web Service Technology