Developing Core JEE Web Services (TT7300)

Modality: Virtual Classroom

Duration: 3 Days

About this course:

Intended for experienced engineers, Java Web Service Essentials is a lab-intensive training course for web services for three days that introduces designers profoundly guidelines that empower Web Services. This course aims around what separates a specially appointed series of web services (NOT SOA) from a vibrant, managed, reusable catalog of big business services (definitely SOA). This course gives an outline of the whole range from the cloud computing promise to the grit of the content of XML. Understudies will gain functional, hands-on involvement in executions of the Web Service and Java XML APIs including JAXB, JAXP, WSEE, JAX-WS 2.0, and XWSS. As far as Java, the attention is on using the JAXB APIs and JAX-WS 2.0, and executions as the reason for deploying and generating web services and service customers.

Web Services and SOA introduce a groundbreaking development in distributed computing. The ideas are not completely new, yet the utilization of them, and the unanimous acceptance of main principles like XML, HTTP, WSDL, SOAP, and the different WS approaches, have made ready for service-oriented architectures and XML Web Services. An overreaching issue identified with services is security. Different parts of security are woven into this course, allowing understudies to see the whole range of issues and also solutions. These comprise digital signatures, encryption, authorization and authentication assertions, and perceived security issues of application, for example, Injection assaults and Cross-Site Scripting.

The normal compensation of a Java Developer is $90,992 every year.

Course Objective:

Working within a hands-on, engaging learning condition, guided by our master group, participants will have the ability of:

- Comprehend and apply the essential ideas of SOA to the design and identification of web services.
- Welcome the idea of layered services including orchestration
- Comprehend the connection between SOA and the whole range of services from RESTful and SOAP services to microservices
- Comprehend and intelligently talk about Web Services and the main advancements involved
- Design, deploy and develop real-world JEE Web ServicesExpose existing Java parts as Web Services of XML.
- Peruse and comprehend a document of WSDL.
- Compose Java segments that get to remote Web Services facilitated by a third party
- Analyze, process, and react to a SOAP message
- Comprehend the ideas behind REST and execute a REST-based web administration
- Apply handlers to inject cross-cutting answers for logging, security, auditing, and different

necessities
- Work with WS-Security to defend resources, content, and different resources

Audience:

This training course is an intermediate-level course, intended for experienced Java architects and developers who need to recognize, structure, and execute web services. We will discover and apply the terminology, the specification, the procedures and advancements explicit to web services.

Prerequisite:

Understudies ought to have 1-2 years of working information with JSPs and Servlets, and ought to be acquainted with Namespaces, XML, and XML Schema.

Course Outline:

Module 1: Path to Useful Web Services

Lesson: Services Via the Web

- Architectural Style: Common Framework
- Loose Coupling: Spectrum of Options
- Software Agents: Services
- Types of Services: SOAP, REST, and Micro
- Interacting: Orchestrated
- SOA Reference Architecture
- Service Layers
- Governance and Compliance

Lesson: Web Services Overview

- Web Services Architecturally
- Spec and Standard Evolution
- Web Services Interoperability Organization
- .NET Platform &.NET Web Services
- Java and Web Services
- Exercise: Web Services in Action

Lesson: Web Services, Java, and JEE

- XML Signature
- XML Encryption
- JAXP, JAXB, and JAX-WS
- JEE and Web Services
- Web Services Stacks at a Glance

Lesson: Web Services Quickstart

- “Typical” Web Services Stack
- How Stack is Used on the Service-Side
- How Stack is Used on the Client-Side
- Debugging Web Services
- Exercise: Implementing a Web Service
- Exercise: Debugging Web Services

Module 2: Foundation for Web Services

Lesson: XML, Namespaces and Schemas

- XML Separates Structure, Content and Format
- XML Namespaces
- Namespaces Best Practices
- W3C XML Schemas
- Exercise: Namespaces and Schemas

Lesson: XML in Java - JAXP and JAXB

- JAXP: Java API for XML Processing
- Security Concerns Relative to Parsing
- JAXB: Binding XML to Java
- Exercise: Working With JAXB

Module 3: Binding – SOAP/REST

Lesson: SOAP Overview

- Anatomy of a SOAP Message
- SOAP and HTTP
- SOAP Messaging
- Remote Procedure Calls
- SOAP With Attachments
- The SOAP Envelope
- SOAP Data Model
- Exercise: SOAP in Action

Lesson: REST Overview

- REpresentational State Transfer
- REST Characteristics
- REST Elements
- REST Architectural Principles
- REST and HTTP

- REST/HTTP: Representation-Oriented
- REST Design Principles
- Exercise: Working With REST

Module 4: Description and Discovery

Lesson: WSDL

- Describing Web Services
- WSDL 2.0/1.1 in Practice
- WSDL Namespaces
- WSDL Anatomy

Lesson: Discovery

- Issues With Broadly Scoped Discovery
- UDDI Registries
- Tools That Support Discovery
- Exercise: Description and Discovery in Action

Module 5: Web Services in Java – JAX-WS

Lesson: JAX-WS Overview

- JAX-WS Architecture
- JAX-WS Features
- Web Service Annotations
- JAX-WS Programming Model
- JAX-WS Handlers

Lesson: Working with JAX-WS

- JAX-WS Development Process
- Bottom-up Building of a Web Service
- Top-Down Building of a Web Service
- Types of JAX-WS Clients
- Exercise: Cost Service
- Exercise: Cost Service Clients
- Exercise: Membership Registration Service
- Exercise: Membership Registration Client
- Exercise: Modifying the Registration Service

Lesson: Handlers

- JAX-WS and Handlers
- Handler Life Cycle

- Configuring Handlers
- Understanding SAAJ
- Connections
- Exercise: Working with Handlers
- Exercise: Checking Compliance with Handlers (optional)

Lesson: Working with Attachments

- SOAP With Attachments
- Sending Binary Data
- Optimized Serialization
- WS-I Attachment Profile
- swaRef
- Enabling MTOM in JAX-WS
- Attached and In-line
- JAX-WS and swaRef