

Oracle DBA, Oracle Developer, Java, Android, SQL Server, Linux, C, C++, MySQL PHP, HTML, CSS, Java Script, MySQL DBA, Postgresql DBA, ASP.Net

Java Webservice

BENEFITS OF ATTENDANCE:

- Upon completion of this course, students will be able to:
- Describe the interoperable web services architecture, including the roles of SOAP and WSDL.
- Understand the importance of the WS-I Basic Profile for interoperable web services.
- Build JAX-WS services and clients that take full advantage of the automated data binding of JAXB.
- Use lower-level SOAP and XML APIs for services and/or clients.
- Customize data binding by specifying specific type mappings or altering method or parameter names.
- Expose session beans as web services.
- Incorporate binary data, such as images, into service and client code.

PREREQUISITES:

- Students must be able to read XML documents and to write well-formed XML by hand. Knowledge of XML Schema will be helpful, too, but is not a strict prerequisite. Experience with other Java EE standards, especially servlets and JSP, will be very helpful in class, but is not strictly required.

COURSE OUTLINE:

CHAPTER 1. OVERVIEW OF WEB SERVICES

1. Why Web Services?
2. Service-Oriented Architecture
3. HTTP and XML

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4. Simple Object Access Protocol (SOAP)
5. Web Service Description Language (WSDL)
6. Universal Description, Discovery and Integration (UDDI)
7. The WS-I Basic and Related Profiles
8. REST

CHAPTER 2. WEB SERVICES FOR JAVA EE

1. Hosting Web Services: Scenarios
2. Invoking Web Services: Scenarios
3. Web Services for Java EE (WS4JEE)
4. The Automated Approach: JAX-WS and JAXB
5. Manual Options: SAAJ and JAXP
6. Portable Web-Services Metadata
7. Service Registries: JAXR

CHAPTER 3. THE SIMPLE OBJECT ACCESS PROTOCOL

1. Messaging Model
2. Namespaces
3. SOAP over HTTP
4. The SOAP Envelope
5. The Message Header
6. The Message Body
7. SOAP Faults
8. Attachments

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CHAPTER 4. THE JAVA API FOR XML BINDING

1. The Need for Data Binding
2. XML Schema
3. Two Paths
4. JAXB Compilation
5. Mapping Schema Types to Java
6. Java-to-XML Mapping Using Annotations
7. Marshaling and Unmarshaling
8. Working with JAXB Object Models
9. In-Memory Validation

CHAPTER 5. WEB SERVICES DESCRIPTION LANGUAGE

1. Web Services as Component-Based Software
2. The Need for an IDL
3. Web Services Description Language
4. WSDL Information Model
5. The Abstract Model -- Service Semantics
6. Message Description
7. Messaging Styles
8. The Concrete Model -- Ports, Services, Locations
9. Extending WSDL -- Bindings
10. Service Description

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CHAPTER 6. THE JAVA API FOR XML-BASED WEB SERVICES

1. Two Paths
2. How It Works: Build Time and Runtime
3. The Service Endpoint Interface
4. Working from WSDL
5. Working from Java
6. RPC and Document Styles
7. One-Way Messaging
8. Binary Protocols

CHAPTER 7. WSDL-TO-JAVA DEVELOPMENT

1. The @WebService Annotation
2. Generated Code
3. Compilation and Assembly
4. Deployment
5. Runtime Behavior
6. Scope of Code Generation
7. More JAXB: Mapping Collections
8. More JAXB: Mapping Enumerations

CHAPTER 8. CLIENT-SIDE DEVELOPMENT

1. Stubs and Proxies
 2. Generated Code
 3. Locating a Service
 4. Invoking a Service
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CHAPTER 9. JAVA-TO-WSDL DEVELOPMENT

1. The @WebMethod, @XmlParam, and Related Annotations
2. Scope of Code Generation
3. More JAXB: Mapping Inheritance
4. Controlling the XML Model
5. Controlling the WSDL Description

CHAPTER 10. JAX-WS BEST PRACTICES

1. Which Way to Go?
2. Interoperability Impact
3. Portability Impact
4. Polymorphism in Web Services
5. Web Services as Java EE Components
6. Lifecycle Annotations
7. Context Interfaces
8. The @WebServiceRef Annotation

CHAPTER 11. PROVIDER AND DISPATCH APIs

1. Stepping Down
 2. The Provider<T> Interface
 3. Implementing a Provider
 4. JAXB Without WSDL
 5. Integrating JAXP
 6. The Dispatch<T> Interface
 7. Building Clients
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CHAPTER 12. THE SOAP WITH ATTACHMENTS API FOR JAVA

1. The SAAJ Object Model
2. Parsing a SOAP Message
3. Reading Message Content
4. Working with Namespaces
5. Creating a Message
6. Setting Message Content

CHAPTER 13. MESSAGE HANDLERS

1. Handling SOAP Headers
2. Servlet Endpoint Context
3. MessageContext and SOAPMessageContext
4. Message Handlers and Handler Chains
5. Processing Model and Patterns
6. Client-Side Handlers

CHAPTER 14. EJBS AS WEB SERVICES

1. Enterprise JavaBeans
2. Three Tiers for Java EE
3. EJB3 and JAX-WS
4. Session Beans as Web Service Endpoints
5. The Bean's Service Endpoint Interface
6. SOAP as an EJB Protocol
7. Pitfalls

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CHAPTER 15. HANDLING BINARY CONTENT

1. The WS-I Attachments Profile
2. Using base64Binary
3. MIME Attachments
4. JAX-WS Support
5. MTOM and XOP
6. SAAJ Support