Java EE Web Services

Audience Course Java EE Web Services
The course Java EE Web Services is aimed at experienced Java developers who want to develop Web Services in a Java EE environment.

Prerequisites Java EE Web Services
To join this course, knowledge of and experience with programming in Java and Java EE Web Applications is required.

Realization Training Java EE Web Services
This course has a hands-on character. The theory is covered on the basis of presentation slides and is interspersed with practical exercises. Demos are used to clarify the theory. The course material is in English.
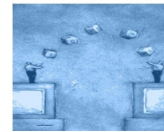
Certificate Java EE Web Services
Participants receive an official certificate Java EE Web Services after successful completion of the course.
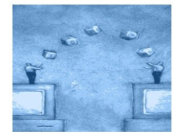
Duration: 4 days   **Price: € 2999**

Open Schedule

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Content Course Java EE Web Services

In the course Java EE Web Services you will learn what Web Services are, how you can create Web Services in Java and how they can be accessed from Java and other platforms.

SOAP and REST
The course covers both SOAP Web services and REST Web services.

Web Service Standards
The various standards on which Web Services are based are treated, such as XML Schema, SOAP, WSDL and HTTP for REST Services.

JAX-WS
In particular, attention is paid to the various Java APIs for Web Services such as JAX-WS 2.x, SAAJ (SOAP with Attachment API), JAXB (Java API for XML Binding) and JAX-RS.

Interoperability
Attention is also paid to what you should look out for to ensure that Web Services are interoperable between different platforms such as Java and .NET. Also the architecture of modern Single Page Applications with a REST service backend is discussed.

Web Service Security
And finally, the various mechanisms and standards for the security of Web Services are discussed. This course covers the topics that are asked on the Oracle Java EE Web Services exam.

Modules Course Java EE Web Services

Module 1 : Web Services Intro	Module 2 : SOAP	Module 3 : SAAJ
What are Web Services?	What is SOAP?	What is SAAJ?
Distributed Applications Evolution	SOAP Characteristics	SOAP message structure
Role of interface	SOAP Messages	SOAP Message Parts
Interoperability	SOAP Body	SOAP Part
Web Service Types	SOAP Headers	Attachment Parts
Web Services Stack	SOAP Namespaces	SAAJ and DOM
SOAP Web Services	SOAP Faults	SAAJ Class Hierarchy
REST Web Services	SOAP Version differences	SAAJ Connections
RPC Style Web Services	SOAP Messages as payload	Creating a Message
Micro Services	Message Exchange Patterns	Adding Message Elements
Document Style Web Services	SOAP Intermediaries	Sending and Receiving
Service Oriented Architecture	actor and mustUnderstand attribute	Accessing SOAP Body

Module 4 : XML-Schema	Module 5 : JAXB	Module 6 : WSDL
Why XML-Schema?	XML Processing Options	Web Service Description Language
Well formed and valid documents	Java API for XML Binding	WSDL Usage
What XML-Schema's?	JAXB Architecture	WSDL and Code Generation
Markup Languages	JAXB Binding Life Cycle	WSDL in Web Service stack
XML Schema Advantages	Role of Binding Compiler	WSDL Namespaces
XML Schema design models	XML tot Java Mapping Rules	WSDL Structure
Classic Use of Schema's	Mapping of XML Schema Types	WSDL Elements
XML Namespaces	JAXB API	Types and Messages
Simple and Complex types	JAXB Annotations Types	PortType and Operations
XML Schema Data Types	Binding Elements and Attributes	WSDL Bindings
User Defined Data Types	Named Complex Types	Service Element
Derivation by Restriction	Customized Mappings	SOAP Messages Modes
Derivation by Extension	Adapter Classes	WSDL 2.0

Module 7 : JAX-WS	Module 8 : Message Handlers	Module 9 : Asynchronous Calling
What is JAX-WS?	Message Handlers	Web Service Invocations
JAX-WS Design Goals	Characteristics	Supporting Asynchrony
JAX-WS Runtime System	JAX-WS Handler Types	Client Side Fire and Forget
JAX-WS Tools	SOAP Message Handlers	Client Side Polling
Service Endpoint Models	Logical handlers	Client Side Callbacks
JAX-WS Servlet Endpoint	Call Chain	Enabling Asynchronous calls
Enterprise Java Beans Endpoints	Inbound Messages	Callback Handler
JAX-WS Architecture	Outbound Messages	Calling Asynchronously
Client Side Programming Models	Processing the Payload	Asynchronous Web Services
Dynamic Proxy Invocation Model	Handler Chains	Asynchronous Web Service Model
Dispatch Invocation Model	Configuring Handler Chains	Using WS-Addressing

Module 10 : REST Services	Module 11 : Interoperability	Module 12 : Web Service Security
Representational State Transfer	WS Interoperability Organization	Web Service Security
REST Web Service Principles	Challenges and Deliverables	Security at Transport level
ID and Links	Profiles	Security at XML Level
REST Services in Java	Profile Standards	XML Encryption
JAX-RS and Rest Jersey	Conformance Requirements	XML Digital Signature
Content Negotation	WS-I Testing Tools	XML Key Management
Embedded Path Parameters	Monitor and Analyzer	WS-Security
@Path and @Param	Interoperability Technologies	Security Enabled SOAP
Multiple Representations	WS-Reliable Messaging	REST Security
@Produces and @Consumes	WSDL Reliable Messaging	Access Restriction
Common REST Patterns	Levels of Delivery Assurance	Restrict HTTP Methods
Resources URI Access	Bootstrapping and Configuration	JSON Web Tokens
XML versus JSON	Message Transmission Optimization	API Keys