

Price: R14,800.00 excl. VAT
Duration: 5 days
Delivery: Virtual classroom or
on-site training

Java Web Services

Description

A web service is a software program that makes itself available over the internet for another system to use. Web services use a set of international standards for communication between different systems.

The Java Web Services course is for Java programmers. It will teach you how to develop web services in Java, and how to write client programs that use web services. You will also learn about the various standards involved, the difference between SOAP and REST web services.

Objectives

After you have completed the Java Web Services course, you will be able to:

- Understand the various web service technologies and how to use them.
- Write SOAP and REST web services.
- Write Java clients that can use SOAP and REST web services.

Intended Audience

You should attend the Java Web Services course if:

- You are a Java programmer and you need to develop web services.
- You are a Java programmer and you need to support web services.
- You are a Java programmer and you want to use web services for internal interfaces.

Prerequisites

Before you attend the Java Web Services course:

- You must have a good knowledge of the Java language. So you should have attended our Java Programming course or already have practical experience programming in Java.
- You should have some knowledge of basic XML.

Course Contents

Web Services Overview.

- Why use web services in enterprise applications.
- Service-oriented architectures (SOA) vs resource-oriented architectures (ROA).
- SOAP web services as a service-oriented architecture.
- REST web services as a resource-oriented architecture.
- SOAP vs REST.

SOAP Web Services, Technologies and Java APIs.

- SOAP architecture, initiatives and specifications.
- Web Service Description Language (WSDL).

- Web Service Interoperability (WS-I).
- Java API for XML Web Services (JAX-WS).
- Java API for XML Processing (JAXP).
- Java Architecture for XML Binding (JAXB).
- Binary Attachments using SAAJ, DIME and MTOM.

Overview of XML (EXTensible Markup Language).

- XML syntax and validity.
- XML namespaces.
- Document Type Definition (DTD).
- XML schemas.

SOAP Web Services Endpoints and Clients.

- Exposing Web service endpoints in JSE applications, servlets and EJBs.
- Creating web services with the code-first vs contract-first approaches.
- SOAP web service client applications.

SOAP Security and Exceptions.

- Handling exceptions.
- User-defined exceptions.
- Web services security requirements.
- Basic authentication.
- Message-layer security.
- Second generation WS-* initiatives.

REST Web Services and Java APIs.

- REST web services overview.
- Review of HTTP features - HTTP methods, headers, query strings, status codes.
- HTTP methods and CRUD systems.
- Designing REST URLs.
- Data representations - XML, JSON, text.
- Java API for XML REST Web Services (JAX-RS).
- Implementation with various Java APIs - servlet API, JAX-RS, @WebServiceProvider.
- REST web service client applications.
- OpenAPI and RAML for describing REST services.

Best Practices and Design Patterns.

- Best practices and choosing the correct WS technology.
- Use of JEE design patterns in web services architecture.
- Practical application of JEE design patterns.

*** The lecturer reserves the right to modify the contents of the course to suit the needs of the delegates.*