J2EE Web Development

Description

Java Servlets and Java Server Pages provide a solid foundation for designing robust and scalable web applications. This J2EE training is designed to support developers in creating modern and high-performance solutions. Participants will learn how to leverage servlet and JSP technologies while also understanding the essential mechanisms of the Java Enterprise Edition platform. With a progressive and structured approach, each learner will gain real autonomy to develop with J2EE dynamic and object-oriented applications.

An asset for developers

Today, mastering n-tier web applications is essential to meet business needs. This course strengthens Java fundamentals while introducing professional practices. Learners will discover how to integrate a web interface with databases, manage sessions, and apply proven architectural models such as MVC. This approach ensures a clear understanding of the interactions between the different layers of an application.

Course Content

Module 1: Course overview

- Review of Java SE and Java EE program
- Introduction to web application technologies

Module 2: Web application essentials

- Java Servlet technology
- JavaServer Pages technology
- Model-View-Controller (MVC) architecture
- Java EE containers and application servers
- Web application development process
- Essential structure of a WAR file

Module 3: Developing a servlet

- HTTP headers and their functions
- Request and response processes
- Servlet life cycle
- Annotations and injection methods
- Servlet threading model
- Developing a servlet to handle client browser requests

Module 4: Processing form requests

- HTML forms and data submission
- HTTP requests and parameter transmission
- Servlets for retrieving form data
- Using HttpSession objects
- Managing cookies
- URL rewriting for session management

Module 5: Configuring the web application

- Deployment descriptors
- Servlet mappings
- Context and initialization parameters
- @WebServlet and @WebInitParam annotations
- ServletContextListener interface
- Application scopes
- Error handling with a deployment descriptor

Module 6: Implementing MVC design

- Controller implementation with a servlet
- Model implementation with POJO
- View implementation with JSP and Expression Language
- Connecting model, view, and controller
- Injecting a service into a controller

Module 7: Developing with JSP

- JSP technology
- Writing JSP code using script elements
- JSP page directive
- Standard tags
- Expression Language (EL)
- JSP configuration in web.xml
- JSP error pages

Module 8: Custom JSP tags

- Designing pages with tag libraries
- Using custom tag libraries
- JSTL tags

Module 9: Using filters

- Web container request cycle
- Filter API
- Developing a filter class
- Configuring a filter in web.xml

Module 10: Advanced servlet features

- Asynchronous servlet
- HTTP requests via JavaScript

- Handling HTTP responses in JavaScript
- Server-push effect
- Managing multipart form data

Module 11: Security

- Common security failures
- User authentication
- Java EE security model
- Secured SSL communication

Module 12: Database integration

- Model and persistence
- Persistent storage with JDBC and JPA

Lab / Exercises
Lab 1: Developing a Servlet Lab 2: Handling Form Requests in Servlets Lab 3: Configuring Your Web Application Lab 4: Implementing an MVC Design Lab 5: Developing Components with JavaServer Pages Technology Lab 6: Developing JSP Pages by Using Custom Tags Lab 7: Using Filters in Web Applications Lab 8: More Servlet Features Lab 9: Implementing Security Lab 10: Integrating Web Applications with Databases
Documentation

- Digital courseware included

Participant profiles

- Individuals involved in developing Web applications with Java

Prerequisites

- Real-world Java programming experience
- Knowledge of Web technologies and HTML

Objectives

- Build data-driven Web applications with server-side Java technologies
- Add a Web interface to your databases using Java servlets
- Generate dynamic Web pages with JavaServer pages (JSP)
- Personalize content for users with cookies and sessions using the Java Servlet API
- Integrate JSP custom tags to minimize scriptlet code

Description
J2EE Training
Niveau
Intermédiaire
Classroom Registration Price (CHF)
3100
Virtual Classroom Registration Price (CHF)
2900
Duration (in Days)
4
Reference
JAVAW