Mastering JEE Web Development (TT5100)

Overview

This course is for experienced Java developers who are new to JEE and need to get up and running with essential dynamic web development skills. You will gain core JEE knowledge and skills that can be used as the foundation for developing production-quality web applications to a basic level.

Target Audience

This is an introductory- level Java programming course, designed for experienced developers who wish to get up and running with JEE, or who need to reinforce sound Java for Web / JEE coding practices. Attendees should have a working knowledge of developing basic Java software applications.

Course Objectives

Students who attend Mastering JEE Web Application Development will leave the course armed with the required skills to design and build scalable, secure, maintainable web applications - leveraging our extensive experience in the delivery of scalable enterprise applications with complex web interfaces based on JEE technologies. Throughout this training, you will be confronted with common web application design problems and given the tools you will need to solve them, such as JEE design patterns. You will also be exposed to a range of JEE and web technologies such as Servlets, JSPs, JSF, JNDI, CDI and advice on when and how to use them. Students will also learn about the capabilities of servlets, their advantages, servlet architecture, and session management. Developers will also learn about managing resources, deployment, and application models, how to use custom tags, and how to build robust and capable web applications using servlets and other components. The course begins with a discussion of web application architecture. A major part of the course is spent on the various web components that are used to implement dynamic web applications. Students will learn not only specific topics and APIs but also how to fit the pieces together into a complete application.
Working within in an engaging, hands-on learning environment, guided by our expert team, attendees will learn to:
Design and build web applications from both business and technical requirements
Build web interfaces with JSF, JSPs and Servlets, using the latest technologies in JEE.
Write maintainable web applications that separate HTML and Java
Understand the design and development of web applications using Servlets, JSPs, web fragments, and JSF
Work JEE's version of dependency injection (CDI)
Make Servlets cooperate and share data
Store and process session information
Deal with concurrency issues
Access databases with JPA
Work with annotations included in JEE
Work with WebSockets as well as asynchronous servlets
Use Java Bean validation in a web application
Properly handle various types of exceptions

Course Outline

1 - Developing Java EE applications

Enterprise Development
Java EE Core Components

2 - JEE Dynamic Web Applications

Introduction to Servlets
Form processing using Servlets
Java Server Pages
Implementing MVC in JEE
Session Management

3 - JEE Servlet Filters and Listeners

Servlet Filters

4 - Expression Language 3.0 (EL)

Overview of EL
The EL language

5 - Custom Tags

Introduction to Custom Tags
The Java Standard Tag Library

6 - Contexts and Dependency Injection (CDI)

Introduction to CDI
Using CDI
CDI and Java EE

7 - Using Resources

JEE DataSources
Overview of JPA

8 - Java API for WebSocket

Introduction to WebSocket
Implementing WebSocket Endpoint
Extending WebSockets

9 - Java Bean Validation (JSR 349)

Introduction to Bean Validation
Bean Validation

10 - Managing Web Applications

Web Fragments
Error Handling
Asynchronous Servlets
Web Security

11 - Introduction to Java Server Faces

Introduction to JSF
JSF Components

12 - Facelets

Facelets
Facelets Templating and Resources