

Java EE 5: Web Component Development

Course length: 5 days

Course Description

Welcome to Java EE 5: Web Component Development. This course will help you to build upon your background knowledge in Java and gain the essential skills you need to develop web components in an enterprise environment. Additionally, the course offers you a job-related approach to the web application development process. Finally, it provides you with the basic expertise required to develop functionally sound and efficient Java Enterprise Edition 5 (JEE 5) web components.

Course Objective: You will develop JEE 5 web applications. You will create web components that support dynamic delivery of content. Next, you will learn how to maintain client state and how you can use this information to track users through your application. You will then use a JavaBean in your web application, and create and use a JSP custom tag library. Next, you will implement JSF components in your JSP page and add functionality to your web application. You will also incorporate security and filters into your application to prevent unauthorized access to the application's resources. Finally, you will explore JEE 5 design patterns and database integration into a web application.

Target Student: Students should be skilled and experienced in using J2SE and be familiar with SQL. Students should have knowledge of database structure and terminology. Students should understand object-oriented programming.

Prerequisites: To ensure your success in this course, we recommend that you take the following courses or have equivalent experience:

- Java 2: Programming Language
- SQL: Fundamentals of Querying
- Object-Oriented Programming: Principles
- Java 2: Object-Oriented Analysis and Design Using UML
- HTML 4.01: Web Authoring, Level 1 (Second Edition)
- XML: An Introduction (Third Edition)

Delivery Method: Instructor led, group-paced, classroom-delivery learning model with structured hands-on activities.

Performance-Based Objectives

Upon successful completion of this course, students will be able to:

- Prepare to develop JEE 5 web applications.
- Build a servlet.
- Build a JSP.
- Maintain client state.
- Use a JavaBean in a web application.
- Create and use a custom tag library.
- Create a JavaServer Faces application.
- Apply security and filters.
- Use design patterns in a web application.
- Integrate a web application with a database.



Course Content

Lesson 1: Preparing to Develop JEE 5 Web Applications

- Topic 1A: Structure a Web Application
- Topic 1B: Access the Database
- Topic 1C: Configure the Web Application

Lesson 2: Building a Servlet

- Topic 2A: Examine Servlets
- Topic 2B: Code a Servlet
- Topic 2C: Send and Receive Information
- Topic 2D: Access Input Streams to the Web Application
- Topic 2E: Control Access to Shared Objects
- Topic 2F: Include Other Resources
- Topic 2G: Return HTTP Errors
- Topic 2H: Handle a Servlet Exception
- Topic 2I: Write to the WebApp Log

Lesson 3: Building a JSP

- Topic 3A: Code a JSP
- Topic 3B: Write a Directive
- Topic 3C: Write a Scriptlet
- Topic 3D: Write a JSP Expression
- Topic 3E: Write a Declaration
- Topic 3F: Employ JSP Actions

Lesson 4: Maintaining Client State

- Topic 4A: Manage a Session with the HttpSession Interface
- Topic 4B: Use Hidden Fields
- Topic 4C: Use URL Rewrite
- Topic 4D: Implement Persistence Management
- Topic 4E: Implement Servlet Event Listening

Lesson 5: Using a JavaBean in a Web Application

- Topic 5A: Use a JavaBean
- Topic 5B: Use a Get Method of a JavaBean
- Topic 5C: Use a Set Method of a JavaBean

Lesson 6: Working with a JSP Custom Tag Library

- Topic 6A: Use the JSP Standard Tag Library
- Topic 6B: Declare a SimpleTag Handler
- Topic 6C: Create a Tag File
- Topic 6D: Create a Tag Library Descriptor
- Topic 6E: Use Custom Tags

Lesson 7: Working with JavaServer Faces

- Topic 7A: Examine JavaServer Faces Framework
- Topic 7B: Configure an Application with a Deployment Descriptor
- Topic 7C: Create JSP Pages Using JSF Components
- Topic 7D: Develop Backing Beans
- Topic 7E: Configure Application Configuration Resource File
- Topic 7F: Handle Message Resource Bundles
- Topic 7G: Deploy a JSF Application



Lesson 8: Applying Security and Filters

Topic 8A: Configure Authentication
Topic 8B: Configure Web Authorization
Topic 8C: Program Web Authorization
Topic 8D: Implement a Filter

Lesson 9: Using Design Patterns in a Web Application

Topic 9A: Design a JEE 5 Web Application with the MVC Pattern
Topic 9B: Design a JEE 5 Web Application with the Transfer Object Pattern
Topic 9C: Design a JEE 5 Web Application with the Data Access Object Pattern
Topic 9D: Design a JEE 5 Web Application with the Business Delegate Pattern

Lesson 10: Integrating a Web Application with a Database

Topic 10A: Configure the Web Application for JDBC Connectivity
Topic 10B: Obtain Connections to a Database
Topic 10C: Access a SQL Result Set in JEE 5 Web Components
Topic 10D: Create Connection Pooling

Appendix A: Sun Certified Web Component Developer for J2EE Platform, CX-310-080 Certification Exam Objectives

Appendix B: IBM 000-484 Certification Exam Objectives

