

JavaServer Faces 2 (JSF 2): Using JSF 2 to Build JEE Web Apps

Course Summary

Description

JSF is a JEE technology that focuses on simplifying the building of Web based user interfaces in Java. It builds on existing technologies, such as Servlets/JSP, but solves many of the issues that arise when using them directly. It does this by providing a standard component based user interface (UI) framework that can be leveraged by tools to provide a rich and easy to use development environment.

This course will get you up to speed with JSF 2 in a very short time. It includes all the important concepts, as well as numerous hands on labs that will have you building working JSF applications very quickly. It covers all the important architectural concepts, as well as providing practical instruction on how to use the many capabilities of the JSF framework. It includes coverage of all important capabilities that are new in JSF 2, including the use of Facelets, and using the new JSF 2 annotations. The course includes a broad coverage of the most important JSF capabilities, including the JSF architecture, working with managed beans, the JSF Expression Language, creating JSF pages with facelets and/or JSP, the JSF core and HTML tag libraries, data tables, validation, and conversion. After learning this material, you'll be ready to use JSF to create your own solutions in the most demanding situations. All labs are done with the **Eclipse IDE** Java EE version deploying to the **Tomcat** server, and the lab instructions include detailed directions for using them.

Objectives

By the end of this course, students will be able to:

- Understand the shortcomings of servlets/JSP, and the need for a framework like JSF
- Understand MVC and the JSF architecture
- Create & configure applications using JSF, including the FacesServlet, and the faces-config.xml file
- Understand and use Managed Beans to manage application data
- Configure navigation rules for your Web application
- Use facelets to create JSF2 Web pages
- Use the JSF core and html tags and the JSF expression language
- Lay out tables using the JSF h:dataTable and associated tags
- Handle action events, value change events, and data model events
- Use JSF Validators to validate your input data
- Understand and use JSF data conversion
- Use composition to create custom tags and templates
- Understand the JSF request lifecycle, and write phase listeners

Topics

- Overview of Java EE and Java Web Applications
- Getting started with JSF
- Managed Beans
- JSF Navigation
- Facelets and JSF Tag Libraries
- h:dataTable
- More about JSF Tags
- JSF Data Validation
- JSF Data Conversion
- JSF Lifecycle
- Additional Topics
- JSF and Ajax
- Composite Components
- JSP Pages

Prerequisites

There are no prerequisites for this course.

Duration

Four days

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Course Outline

- I. Overview of Java EE and Java Web Applications**
 - A. Java EE and Web App Overview
 - B. Servlet, Servlet Scopes
 - C. JSPs, JSP Lifecycle
 - D. Custom Tags, Tag Libraries, taglib directive
 - E. Model View Controller
- II. Getting started with JSF**
 - A. JSF Overview
 - B. Purpose and Goals
 - C. JSF Architecture
 - D. JSF Views - facelets and JSP Pages
 - E. Managed Beans, Controller, configuration
 - F. Downloading and Installing JSF
 - G. Your first JSF Application - setup, configuration, deployment
 - H. Server setup and use
- III. Managed Beans**
 - A. Defining a Managed Bean (annotation-based and configuration in faces-config.xml)
 - B. Managed Bean Lifecycle
 - C. Managed Beans and JSF Forms
 - D. Managed Beans as Value Binding Expressions
 - E. JSF Expression Language (EL) & the Unified EL (JSF 1.2)
 - F. Value Binding Expressions
 - G. Method Binding Expressions
 - H. Implicit Objects
- IV. JSF Navigation**
 - A. <navigation-rule> configuration issues
 - B. <navigation-case> and nested elements
 - C. How to use the navigation rules
- V. Facelets and JSF Tag Libraries**
 - A. Facelet Introduction and Life Cycle
 - B. JSF Tag Library Overview
 - C. JSF Core tags <f:tagName>
 - D. JSF HTML tags <h:tagName>
 - E. Using the Most Common Form controls – TextFields, Buttons, Links ...
- VI. h:dataTable**
 - A. <h:dataTable> tag and nested tags <h:column> etc.
 - B. Working with collections of type List or array
 - C. Table headers and footers, f:facet
- VII. More about JSF Tags**
 - A. Using <h:commandLink> and <h:outputLink>
 - B. Using the h:selectXxx Tags (e.g h:selectManyListbox)
- VIII. JSF Data Validation**
 - A. Standard Validators
 - B. required, validateDoubleRange, validateLongRange
 - C. Creating, configuring, and using Custom Validators
- IX. JSF Data Conversion**
 - A. Standard JSF Converters
 - B. convertDateTime, convertNumber - configuration and usage
 - C. Custom Converters
- X. Templates**
 - A. Layout Issues in Web Pages
 - B. Using Templates with Facelets
 - C. Creating Custom Composite Components
- XI. JSF Lifecycle**
 - A. Lifecycle Overview
 - B. Initial requests and postbacks
 - C. Restore View, Apply Request Values, Process Events, Process Validations, Update Model Values, Invoke Application, Render Response
 - D. renderResponse() and renderComplete()
 - E. Phase listeners
- XII. Additional Topics**
 - A. Backing Beans / UIComponents
 - B. JSF and CSS
 - C. JSF and JavaScript
 - D. Localization and Resource Bundles
- XIII. JSF and Ajax**
 - A. Ajax Overview
 - B. Using f:ajax
 - C. Event Triggers for "Ajax-ified" Components
 - D. Listener Methods
- XIV. Composite Components**
 - A. Overview
 - B. Using composite:interface, composite:attribute, and composite:implementation
 - C. Passing Managed Beans and Methods to a Component
 - D. Adding Listeners and Actions
- XV. JSP Pages**
 - A. JSP Overview
 - B. Create JSF Page Using JSP