



DESCRIPTOR SYSTEMS

"We Bring You Up To Speed"

JavaServer Faces (JSF) Programming

Description	This course teaches developers how to write Java Enterprise Edition (JEE) applications that use JavaServer Faces for the Web user interface.
Audience	Developers who will write JEE applications using JSF.
Prerequisites	Java programming skills are mandatory.
Length	3 days
Format	Instructor-led; lecture and hands-on lab exercises.

Detailed Topic List

1. Introduction to the Course

- JavaServer Faces Programming
- Legal Information
- JavaServer Faces Programming
- Introductions
- Course Description
- Course Objectives
- Sample Agenda
- Sample Agenda, cont'd
- Sample Agenda, cont'd
- Course Logistics

2. Introduction to JSF

- Introduction to JSF
- What is JSF?
- JSF History
- JSF Feature Overview
- JSF Implementations
- JSF Development Environments
- JSF Development Process
- JSF Hello, World
- JSF Hello, World, cont'd
- JSF Hello, World, cont'd
- JSF Hello, World, cont'd
- JSF Hello, World, cont'd
- JSF Hello, World, cont'd
- JSF Hello, World, cont'd
- JSF Hello, World, cont'd
- Chapter Summary

3. Writing JavaBeans

- Writing JavaBeans
- What is a JavaBean?
- Why Use JavaBeans?
- JavaBean GUI Toolkits
- JavaBeans versus Enterprise JavaBeans
- JavaBean Requirements
- JavaBean Features
- Visual versus Non-Visual Beans
- What are Reflection and Introspection?
- Writing JavaBean Methods
- JavaBean Properties
- Simple Properties
- Implementing Simple Properties
- Calculated Properties
- Accessing Simple Properties From a JSP
- Indexed Properties
- Quick Practice
- Optional Coverage
- Introduction to Events
- Event Architecture
- The Event Object Class
- Event Listener Interfaces
- Registering for an Event
- Registering for an Event, cont'd
- Firing an Event Based on Property Change
- Firing an Event
- Event Consumers
- Bound Properties
- Implementing a Bound Property
- Implementing a Bound Property, cont'd
- Listening to a Bound Property
- Advanced JavaBean Techniques
- Review Questions
- Chapter Summary

4. J2EE Review

- J2EE Review
- What is Java Enterprise Edition?
- Introduction to Servlets
- Why Use Servlets?
- Writing a Servlet
- A Simple Servlet
- A Simple Servlet, cont'd
- Generating HTML in a Servlet
- Introduction to JavaServer Pages
- Why Use JSPs?
- Separating Content from Presentation
- The Model-View-Controller Architecture
- Using a JavaBean from a JSP
- Bean Scopes
- Using the JSP Expression Language
- JSP EL Operators
- JSTL EL Implicit Objects
- EL Operator Examples

- Custom JSP Actions - Tag Libraries
- Uses of Custom Actions
- Using a Tag Library
- JEE Packaging Model
- Web Application Directory Structure
- The Web Deployment Descriptor
- Deployment Descriptor Elements
- Forwarding versus Redirecting
- Chapter Summary

5. JSF Architecture

- JSF Architecture
- JSF Requirements
- Configuring the Faces Servlet
- JSF URLs
- Optional: Preventing Direct JSP Access
- Optional: Providing a Start Page
- JSF Tag Libraries
- Sample JSF Page
- Managed Beans
- Introduction to the JSF Expression Language
- Introduction to JSF Components
- The Component Tree
- Typical Request Processing
- Invoking an Application Method
- Accessing the Servlet Environment
- Introduction to Navigation
- Chapter Summary

6. Request Processing and Navigation

- Request Processing and Navigation
- JSF Components
- The Component Tree
- Request/Response Lifecycle
- Restore View Phase
- View State
- Apply Request Values Phase
- Displaying Conversion Errors
- Validation Phase
- Update Model Phase
- Invoke Application Phase
- Renderer Response Phase
- Backing Beans
- JSF Navigation
- Navigation Rule Syntax
- Static Navigation
- Dynamic Navigation
- Using Redirection
- Navigation Wildcards
- Using a GUI Tool for Navigation Rules
- Chapter Summary

7. Managed Beans and the JSF EL

- Managed Beans and the JSF EL
- What is a Managed Bean?
- Using Managed Beans

- Bean Scopes
- Dependency Injection and Wiring
- Injecting Simple Values
- Injecting Lists
- Injecting Maps
- Wiring Bean References
- Wiring Bean References, cont'd
- Rules for Bean Scopes
- JSF Expression Language
- Why Another Expression Language?
- JSF EL Operators
- Operator Examples
- JSF EL Implicit Variables
- Implicit Variable Examples
- Evaluating Expressions in Java
- Chapter Summary

8. JSF Components

- JSF Components
- JSF is a Component-Based Framework
- JSF Provides a Pluggable Architecture
- How Does JSF Create Component Objects?
- The Client-Server Model
- JSF Tag Libraries
- Actions in the Core Tag Library
- Actions in the Core Tag Library, cont'd
- Actions in the HTML Tag Library
- Actions in the HTML Tag Library, cont'd
- Common Attributes
- HTML Pass Through Attributes
- The f:view Action
- HTML Output Actions
- Output Actions Example
- The h:form Tag
- HTML Input Actions
- Input Actions Example
- HTML Command Actions
- Command Actions Example
- Single Selection Actions
- Single Selection Example
- Multiple Selection Actions
- Multiple Selection Example
- Conditionally Enabling Components
- Conditionally Displaying Components
- Chapter Summary

9. Conversion and Validation

- Conversion and Validation
- Data Conversion
- JSF Request Lifecycle
- Standard Converters
- Converter Example
- Converting Dates
- Displaying Conversion Error Messages
- Conversion Error Messages, cont'd
- Custom Converter Error Messages

- Custom Converter Error Messages, cont'd
- Custom Converter Error Messages, cont'd
- Standard Converter and Validation Messages
- Custom Converters
- Custom Converter Example
- What is Validation?
- Validation Scenarios
- Converters vs Validators
- Required Fields
- JSF Standard Validators
- Displaying Validation Error Messages
- Custom Validation Error Messages
- Defining a Custom Validator
- Custom Validator Example
- Bypassing Conversion and Validation
- Chapter Summary

10. Event Handling

- Event Handling
- Event Handling in Java
- JavaBean Events
- JavaBean Event Architecture
- JSF Event Categories
- Action Events
- Immediate vs Non-Immediate Events
- Configuring an Immediate Event
- Immediate Event Example
- Phase Listeners
- Phase Listener Example
- Chapter Summary

11. Panels and Data Tables

- Panels and Data Tables
- What is a Panel?
- The h:panelGrid Tag
- The h:panelGroup Tag
- Introduction to Data Tables
- The h:dataTable Tag
- Data Table Iteration
- Data Table Facets
- Alternating Row Styles
- Components in Data Table Cells
- Editable Table Cells
- Table Data Models
- Using a Data Model
- Advanced Data Table Topics
- Using a Data Table with a Database
- Accessing the Database
- What is JPA?
- Java Persistence Ancestry
- Java Persistence Overview
- JPA Data Table Example
- Paging Large Result Sets
- JPA Paging Support
- Enabling and Disabling Paging Buttons
- Paging Example

- Chapter Summary

12. JSF and Internationalization

- JSF and Internationalization
- What is Internationalization ?
- JSE Support for I18N
- What is Unicode?
- Language and Country Codes
- What is a Locale?
- How Does JSF Determine Locale?
- Selecting a Locale Explicitly
- Message Bundle Property Files
- Formatting Dates and Numbers
- Complete I18N Example
- Chapter Summary

13. Introduction to Facelets

- Introduction to Facelets
- What is Facelets?
- Why Use Facelets?
- Installing Facelets
- Configuring the View Handler
- Configuring the View File Extension
- Writing a Facelets Application
- Common Layout and Content
- Writing a Facelets Template
- Writing a Facelets Page
- Another Facelets Page
- The Managed Bean
- Navigation Rules
- The Facelets Namespace
- The jsfc Attribute
- Inlining Text
- Facelets and JSTL
- Chapter Summary

14. JSF and Other Frameworks

- JSF and Other Frameworks
- JSF and Other Frameworks
- The Seam Framework
- Seam Architectural Highlights
- Seam Enhancements to JSF
- Seam and AJAX
- Seam Hello, World
- The JPA Entity
- The JSF Input Form
- The Session Bean
- What is Struts?
- A Simple Request
- Writing a Struts HTML Form
- Action Form Example
- Action Form Example, cont'd
- Action Example
- Action Example, cont'd
- The Struts-Faces Component
- What is Apache Shale?

- Shale Features
- Shale Validation
- What is RichFaces?
- RichFaces Hello, World
- What is IceFaces?
- IceFaces Hello, World
- Chapter Summary

15. JSF 2 Overview

- JSF 2 Overview
- JSF 2 Overview
- Major Changes in JSF 2
- Facelets
- Ajax Support
- Partial State Saving
- Annotations
- HTTP GET Support
- New Validators
- Chapter Summary