Oracle Developer Day

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J2EE Track: Session #3
Developing JavaServer Faces Applications

Name
Title
Agenda

• Introduction to JavaServer Faces
  – What is JavaServer Faces
  – Goals
• Architecture
  – Request Lifecycle
  – JSF Components
  – Developing JSF Applications
• Oracle and JSF

What is JavaServer Faces?

• Standard J2EE Web UI framework
• Developed through Java Community Process (JCP) as JSR-127, JSR-252
• Nickname: Faces
• Started: May 2001
• First release: March 2004
• Oracle is a primary contributor
Role of Faces

- Focus on components, not markup
- Automatic event and state handling
- Designed to be leveraged by tools

Goal is to simplify J2EE web application development

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- Oracle and JSF
Evolution of J2EE web tier

- Each is built on the previous layer
- Progressive levels of abstraction
- Higher level programming

JSF Architecture

- Abstracts away from HTTP
  - Developers don’t need to understand request-response cycle
- Abstracts away from HTML
  - Developers work with components, not markup
  - Developers don’t need to decode requests
JSF Architecture

Formal Phases – Initial Request

JSF LIFECYCLE

Client / Browser

Restore View

Render Response
Formal Phases - Postback

**JSF LIFECYCLE**

- Client / Browser
- Restore View
- Apply Request Values
- Process Validation
- Render Response
- Invoke Application
- Update Model

Formal Phases (cont.) - JSP

**JSP LIFECYCLE**

- Client / Browser
- Servlet URL parsing
- Render JSP Response
- Product code (state management, events, etc.)
JavaServer Faces and JSP

- JSF is specified to support JSP
  - But need not always utilize it
  - Can build your own ViewHandler
- JSF JSP support comes with a set of Base UI Component libraries
  - Core – For application tasks
    - Validation, Datatype conversion
  - HTML – For rendering basic HTML
    - Input fields, menus, tables button

JSF vs. Traditional JSP

<table>
<thead>
<tr>
<th>Developer</th>
<th>JSP</th>
<th>JSF</th>
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<tr>
<td>Events</td>
<td>Http Requests</td>
<td>Java</td>
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<tr>
<td>UI</td>
<td>Markup</td>
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JSF Components

- Basic building blocks of a JSF application
- Simple to complex UI components from a button to a complete page
- Uses Value Binding to associate Model objects
- Fully Extendable
- Components include “Helper objects”
  - Validators, Converters, PhaseListeners…

The term “JSF Component” generally consists of:

- UIComponent
  - Functionality, definition, or behavior
- Renderer
  - Handle client side markup
  - Bundled in RenderKit
- UI Component Tag Handler (for JSP)
  - Allows usage of JSF component in JSP
  - Associates Renderer with UI Component
JSF Application

A typical JSF application consists of:

• JSP pages
  - With JSF components wrapped as JSP tags
• Navigation Model
  - Defined in the Faces configuration file
• Managed Beans
  - Application logic
• Faces configuration - faces-config.xml

Demonstration
Developing a JSF Application
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  - JSF Components
  - Developing JSF Applications
- Oracle and JSF

Oracle and JSF

- JSF Development in JDeveloper 10.1.3
  - Complete visual development environment for JSF
- Oracle ADF Faces
  - Oracle’s complementary library of JSF Components
JSF and JDeveloper 10.1.3

- JSF Visual Editing
  - JSF UI Component visual editing
  - “Autobinding” backing code generation Option
  - Visual design for mobile clients

- Faces Config Editing Console
  - Console for productive editing of faces-config.xml
**JSF and JDeveloper 10.1.3**

- **JSF Page Flow**
  - Visually design Faces navigation model

- **Declarative data binding – JSR 227**
  - Drag and drop data binding support
ADF Faces - Consistent Programming Model

Oracle ADF Faces

- A set of standard JSF 1.1 components
- Runs on any compliant implementation of JSF
- Over 100 types of components
- PPR, scrollable and sortable table etc…
- Rich feature set for customizing applications
- ADF model support out-of-the-box
- Look and Feel Customization
ADF Faces Components

- Accessibility and internationalization support across the board
- Framework features e.g. Dialog framework and support for processes
- Released early and often – every 4-5 weeks – on OTN

ADF Faces RIA

- RIA – Rich Internet Application
- A Rich Client combining:
  - Deployment benefits of a Thin Client application
  - Rich interaction of a desktop application
ADF Faces RIA

- Rich Internet JSF components
- Leveraging “Ajax” technologies
- JSF components with live updates in the Browser
- Popup menus, Trees, Splitters etc…

Multi-client development
DEMONSTRATION

Multi-client JSF Application

JSF Web Resources

- JSF Reference Implementation
  - http://java.sun.com/j2ee/javaserverfaces/

- JSF Central – Most Popular Online JSF Community
  - http://jsfcentral.com

- Oracle Technology Network JSF Resources
  - http://otn.oracle.com/jsf
Summary

- Think components, not markup
- Not just for HTML
- Framework for both Corporate Developers and Component Developers
- Built in event and state management
- Component sets can be provided by any vendor
- Closer to Swing or ASP.Net development
- Choice of UI technology
QUESTIONS & ANSWERS