Ajax for Everyone – Building better Rich Internet Applications faster with JSF

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Overall Presentation Goal

Identify areas in JavaServer Faces that need to improve for a more productive Ajax development experience and proof that this can be done
Why am I speaking here?

- Outbound and inbound facing product manager for Ajax, ADF Faces, ADF and Oracle JDeveloper
- Representing Oracle tools development organization at Oracle and non-Oracle conferences
- Customer facing!
- More than 10 years experience in tools development
- Born and raised with a desire for productivity, not complexity
RIA Assessment for Developers

- How do you like the interactive web?
- What is your expectation for a productive RIA development environment?
- How productive do you need to be?
- What is the expected lifetime for your applications?
- How do you like low level coding?
- What do you think about learning curves?
I love the interactive web

I want to develop RIA applications as flexible and quickly as possible and "reuse" is my second name

Usually I need to be finished before I start

My applications must be compatible with the future. The expected application lifetime clearly includes a "tomorrow"

I love low level coding, but I hate doing it myself!

I am smart and easily master learning curves. But my bread and butter doesn't come from learning but doing
Benefits of JavaServer Faces

- Simplifies Web Development
- Component based not mark-up
- Automatic event and state handling
- Diverse client base not just HTML
- Designed with tooling in mind
- Applicable to wide spectrum of programmer types
- JEE standard
Trend of JSF Adoption
Ajax Challenges

- Protect developer from having to code too much JavaScript
- Simplify Ajax binding
- Provide declarative development gestures
- Handle browser differences efficiently
- Interoperability of libraries and components
- Security
- Control the browser, not vice versa
Improving JSF for better Ajax

- Templating
- More components
- Ajax
- Simpler component development
- More scopes
- Enhanced Controller Flow
- Bookmarking
- Reusable Flows
DEM0

ADF Templates
## More Components

### Layout
- Decorative Box
- Document
- Inline Frame
- Navigation Pane
- Panel Accordion
- Panel Border Layout
- Panel Box
- Panel Collection
- Panel Form Layout
- Panel Group Layout
- Panel Header
- Panel List
- Panel Splitter
- Panel Stretch Layout
- Panel Tabbed
- Panel Window
- Separator
- Show Detail Header
- Spacer
- Toolbox

### Link
- Media
- Menu
- Menu Item
- Message
- Messages
- Navigation Item
- Output Formatted
- Output Label
- Output Text
- Panel Label and Message
- Panel Menu Bar
- Popup
- Progress Indicator
- Query
- Quick Query
- Reset Button
- Rich Text Editor
- Select One Choice
- Select One Listbox
- Select One Radio
- Select Order Shuttle
- Show Detail
- Show Detail Item
- Status Indicator
- Subform
- Table
- Toolbar
- Toolbar Button
- Train
- Train Button Bar
- Tree
- Tree Table

### Operations
- Attribute Drag Source
- Attribute Drop Target
- Client Attribute
- Client Listener
- Collection Drag Source
- Collection Drop Target
- Component Drag Source
- Convert Color
- Convert Date Time
- Convert Number
- Data Flavor
- Drop Target
- File Download Action Listener
- For Each
- Group
- Iterator
- List
- Reset Action Listener
- Return Action Listener
- Rich Text Editor Insert Behavior
- Server Listener
- Set Action Listener
- Show Popup Behavior

### Other
- Show Printable Page Behavior
- Skip Link Target
- Switcher
- Validate Byte Length
- Validate Date Restriction
- Validate Date Time Range
- Validate Double Range
- Validate Length
- Validate Long Range
- Validate Reg Exp
More Components

- Graph
  - Advanced Graph
  - Area
  - Bar
  - Bar (Dual Y)
  - Bar (Horizontal Stacked)
  - Bar (Horizontal)
  - Bar (Stacked)
  - Bubble
  - Combo
  - Combo (Dual Y)
  - Funnel
- Line
- Line (Dual Y)
- Pareto
- Pie
- Radar
- Scatter
- Stock

- Geographic Map
  - Map
    - Map Themes
    - Bar Graph Theme
    - Color Theme
    - Pie Graph Theme
    - Point Theme
    - Predefined Theme
    - Theme Tags
    - Bar Series Item
    - Bar Series Set
    - Legend
    - Overview
    - Pie Slice Item
    - Pie Slice Set
    - Point Style Item
    - Toolbar

- Gauge
  - Gauge Tags
    - Background
    - Bottom Label
    - Font
    - Frame
    - Indicator
    - Indicator Bar
    - Indicator Base
    - Legend Area
    - Legend Text
    - Legend Title
    - Lower Label Frame
    - Metric Label
    - Plot Area
    - Set Background
    - Threshold
    - Threshold Set
    - Tick Label
    - Tick Mark
    - Top Label
    - Upper Label Frame
DEMO

Component Demo
Ajax needs more than Components

- Evaluate solutions beyond their UI capabilities
- Example: ADF Faces RC also offers
  - Drag-and-drop framework
  - Dialog and popup framework
  - Navigation menu framework
  - Partial page rendering
  - Active Data Services (ADS)
  - JavaScript API
DEMO

Ajax development with ADF
Faces RC components
Simplified Component Development

- JSF enables developers to build their own custom components that easily plug into the JSF framework.
- In many cases developers don't seek for a new complex component but one that consists of existing components.
- The JSF specification does not yet provide a mechanism to declaratively build reusable components from existing components.
Declarative Component Development
More Scopes

- JSF uses memory scope objects to maintain state
- Available scopes are
  - None, Request, Session, Application
- Additional scopes needed
  - Task (Process) scope, View scope
- Example: Shale, SEAM, Trinidad and ADF Faces
Control Flow - Is this clear enough?
Or is this better?
Additional Navigation Components

Method Call
- Invokes application logic within application control flows

Router
- Evaluates an EL and returns an outcome

Task Flow Call
- Calls a bounded task flow from a particular point in an application

Task Flow Return
- Identifies when a bounded task flow completes and sends control flow back to the caller

URL View
- Redirects to any URL addressable resource
Reactive Flows

While you can use several jsf-config files in a single application, breaking-down your application into smaller flows, it is still way too hard to create.

The notion of reusable flows is missing and needs to be added for increased productivity, standardization and reuse.

Flows should be invoked by passing input parameters and receiving an output.

Reusable flows should be decoupled from the application code.
Reuse Flows in other Flows
Reuse Flows in other Flows
Reuse inside a page
ADF Task Flows Features

- Trains: a progression of related pages
- Save for later—resume incomplete transactions
- Declarative bookmarking
- Declarative transaction management
- Declarative support for browser back button navigation
- Declarative support for exception handlers
- Declarative security based on JAAS
Reusable Flows
Simpler Value Binding

- Connecting UI components to data components
  - Should be done in a declarative way
  - Should provide a consistent API across business services

- JSR 227 (ADF Binding)
  - Meta data driven, POJO, EJB, WebService, BPEL, ADF BC

- JSR 299 (Web Beans based on SEAM)
  - Annotations, EJB 3.0, Web Services
ADF Faces Rich Client

- 150+ AJAX enabled JavaServer Faces components
- Dialog and popup framework
- Drag-and-drop framework
- Navigation menu framework
- Partial page rendering
- Active data framework
- Advanced data streaming
- Complete JavaScript API
- Templating
- Skinning
Summary

- Rich Internet Applications (RIA) is the current and the future

- The Java and Java EE developer landscape changes with more business developers coming on board. The future is declarative

- JavaServer Faces is a standard development framework that simplifies web development

- JavaServer Faces can be improved to better support Ajax, making it a perfect match

- ADF Faces RC is a proof point that Ajax enabled JSF is Ajax for everyone
Q&A
Thanks for your attention!

- JDeveloper Home Page
- otn.oracle.com/products/jdev
- Frank Nimphius "Blogbuster"
- http://thepeninsulasedge.com/frank_nimphius
- ADF Code Corner