Oracle Developer Day

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Session 2
Oracle Application Development Framework

Speaker
Speaker Title
Agenda

- Development Environment
  - Expectations
  - Challenges
- Oracle ADF Architecture
  - Business Services
  - Model
  - View
  - Controller
- Integrated Tool for the Platform
- JHeadstart

“Upgrade and Integrate”

- Integration
  - What is the best technology to use?
  - What are your expectations?
Forms and Designer Users: What are your Expectations?

- Development Productivity
  - Modeling
  - Visual and declarative development
- Runtime Efficiency
  - Performance and scalability
  - No need to code the “plumbing” infrastructure

Development Challenges Now

- Different architectures
  - J2EE Best Practices
  - Service Oriented Architecture
  - Event-Driven Architecture
- Different technologies
  - WS, BPM, XML, WSDL, Portal, Wireless, etc.
- Different data sources & access
  - Database, Legacy, Packaged Apps, WS, etc.
- Diverse set of developers
  - Different technical skills
  - Different development styles
  - All need to be productive
Next Generation of J2EE Tools

- Reach a Broader Audience
  - Bring the power of J2EE to corporate developers
- Increase Productivity and Ease of Use
  - Visual and declarative development
  - Less coding, more reuse
  - Bridge the usability gap with C/S tools
- Reduce Learning Curve / Staffing Issues
  - Provide abstraction on top of J2EE

Oracle ADF

- Simplifies J2EE Development
  - Visual and declarative set of tools
  - Rapidly becoming as productive as Forms
- Implements Best Practices
  - Standard J2EE best practices
  - Model-View-Controller (MVC) design pattern
Business Services

- Manages Persistence
  - O/R mapping
  - Queries/DML
- Performs Validation
  - Data validation
  - Business logic
- Choices of implementation
  - EJB, ADF Business Components, Toplink, Web Services, Java classes

Business Services
Design Time

- UML Modelers, Wizards, Code Editors
  - ADF Business Components
  - Enterprise JavaBeans
  - TopLink
  - Database Schema
  - Web Services
  - Java Classes
- Integrated J2EE server (OC4J) for accelerating develop-run-debug cycle
ADF Business Components

- Complete business tier development framework
- Implements J2EE design patterns
- Best practice solutions for:
  - Business logic implementation
  - Scalability and performance
  - Optimized database interaction
- Standard deployment options:
  - EJB, web tier, web services

Enterprise JavaBeans (EJB)

- Integrated environment to model, code, test, and debug EJBs
- Productively develop EJBs
  - EJB Module Editor
  - Design patterns support
    - Data Transfer Object
    - Session Façade
  - EJB Verifier
TopLink

- Object-Relational Persistence Architecture
  - Java Classes – “POJO”
  - CMP Entity Beans
- TopLink Mapping Editor
- Mappings verifier
- Unit test mappings

Web Services

- Enterprise-Class J2EE Web Services
  - Asynchronous conversations
  - Interoperability with .NET Web Services
  - Productive development
    - TCP packet monitor
    - PL/SQL Web Service wizard
    - WS-I compliance tester
    - ADF Data Control Binding
ADF Model

- Abstract service implementation from clients
  - EJB, Web Services, Toplink, Java Classes, etc.
  - Service Oriented Interface
- Declarative Data Binding
  - Common binding of data to UI components
  - Uses EL (standard expression language) to reduce learning curve
  - Clean separate of view and model
- Declarative Data Validation
  - Consistent interface for common validation
  - Extendable for complex application validation
- Design Tools
Declarative Data Validation

- Declarative data validation
  - Consistent interface for common validation
  - Extensible for complex application validation
  - Metadata based
- Independent of the implementation
  - EJB
  - Toplink
  - Java Classes
  - ADF BC
Drag-and-Drop Binding

Data Control Palette
- Expose any business service
- Available to any client

UI Development

Rich Clients  Web and Wireless

Controller

Model

Business Services
UI Development

- Visual editors
  - JavaServer Faces
  - JSP and HTML
  - Swing (ADF Swing)
- Component palette
- Common binding
- Property inspector
- Structure window

Design and Code Sync

- Design View or Code View
  - Available for all components
  - Full synchronization with the code
ADF Faces

• Rich set of standard components
  – 100+ components
  – Works with any Faces-compliant IDE
  – Rich browser experience
• Multiple Target Devices
  – Browser – HTML
  – Browser – DHTML/Javascript
  – Mobile/PDA/Telnet
• Interactive UI Components
  – Partial Page Rendering
  – Rich Internet Architecture (RIA)

JSP Visual Design

• Synchronized JSP Visual Design with
  – Code Editor
  – Structure Window
  – Property Inspector
  – Data Control/Component Palette
• Integrated with JSTL/EL & Struts
  – Taglibs exposed on Component Palette
  – Intuitive tag and EL rendering
  – Synchronized with Struts Page Flow
• Universal ADF Databinding
  – Toplink, EJB, BC4J
  – Web Services
  – Drag and drop UI Components
**ADF Swing**

- Rich Client user interface (JFC/Swing)
- Common data binding
  - ADF Business Components
  - TopLink
  - Enterprise Java Beans
  - Webservices
  - Java Beans
- WYSIWYG Editor
- UI Debugging

**ADF Architecture Overview**

- Rich Clients
- Web and Wireless
- Controller
- Model
- Business Services
Controller

- Handles Page Flow
  - Promotes page reuse through abstraction
  - Increase flexibility and manageability
- Place for code execution
  - Programmatic interaction with the Model and Business Service
  - Application support tasks
    - Security
    - Input validation
    - State management

Page Flow

- Visual development with the Page Flow modeler
  - Draw the page flow
  - Synchronized with Faces-config.xml
  - Drilldown to code & pages
- Declarative
  - Structure window
  - Property Inspector
Oracle JDeveloper 10g

- Standards-based IDE
- Integrated Tool for the Platform
- Full Development Life Cycle Support
- Visual and Declarative
- Adapts to Environment
  - Not the other way around
  - Adapt to choices of technologies
  - Adapt to choices of development styles

Common Architecture

```
JDeveloper
  Portal  Integration  Wireless
  ADF
  OC4J
  Metadata Services (MDS)
```

E-Business Suite / Fusion

Enterprise Manager
Integrated Tool for the Platform

- Single stack for all APS development
  - Application Development/SODA
    - J2EE, Web Services, XML
    - Portal, BPEL, Wireless
  - Database
    - Modeling, SQL, PL/SQL
  - Business Intelligence
    - BI Beans, Reports
- Common Tool = More productivity
  - Common Concepts
  - Common Gestures

JHeadstart Application Generator for ADF

- JDeveloper 10g Extension
  - Additional Editors for Defining Application Structure Declaratively
- Generates Web Tier for ADF App Modules with:
  - Quick- and Advanced Search Regions
  - Single- & Multi-row Editing
  - Scrollable Tables with Nested Details
  - Dropdown Lists and Pop-Up LOV's with Validation like Forms
  - Shuttle pickers, Tree controls, Role-based Authorization, and More
- Supports JSP or UIX Generation (JSF in Future)
- Migrate Oracle Designer-Created Forms to ADF
- Available From, Supported By Oracle Consulting
JHeadstart Example: “Minimal” Skin

JHeadstart Example: Oracle Skin
Summary

- JDeveloper offers a true IDE
- Oracle ADF offers choices at each stage of development
  - Model
  - View
  - Controller
- Integrated Tool for the Platform
- JHeadstart