JDeveloper 10g and Oracle ADF: More Visual and Flexible Than Ever

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NYOUG
Unwavering Vision for JDeveloper

- Comprehensive Development Environment
  - Full Lifecycle Under One Roof
  - UML Analysis to Debugging, Profiling, Deployment
- High Developer Productivity
  - J2EE Experts & Business Application Developers
  - Oracle Apps Self-Service Teams ( > 1500 developers )
- Visual, Declarative Option for Everything
  - Supplement Declarative with Code When Needed
  - Support a Full Throttle Code-Based Approach if Desired
- All Languages for Oracle-based App Development
  - Java, PL/SQL, SQL, XML
  - Emerging Support for Scripting Languages Like PHP, Perl
- Great Support for J2EE Standard & Platforms
  - Especially Optimized for Oracle Apps Server and Database
  - Supports Any Standards-Compliant App Server, Database
History of the JDeveloper Product

JDeveloper 1.0  Mar 1998
JDeveloper 1.1  Sep 1998
JDeveloper 2.0  Apr 1999
JDeveloper 3.0  Nov 1999
JDeveloper 3.1  Apr 2000
JDeveloper 3.2.2  Nov 2000
JDeveloper 3.2.3  May 2001
JDeveloper 9.0.2  May 2002
JDeveloper 9.0.3  Oct 2002
JDeveloper 9.0.4  Q4 2002
JDeveloper 10g  September 2003 (Beta)
JDeveloper 10g  Q1 2004

Windows-Only
Each Release
Had Ever-Shrinking
Amount of Borland Code

Any Platform
Total IDE Rewrite
All Oracle Code
Agenda for Today

• Overview of New JDeveloper 10g Features
  – For Application Developers
  – For Java Coders
  – For SQL Developers
  – For UML Modeling

• Building Your First J2EE App Step by Step
  – See the Features in Action

• Where is JDev Going in Future Releases?
  – A Few Ideas of What We're Working On Next
More Visual Development
Improved Window Management
Visual Web Page Development: UIX
Visual Web Page Development: UIX

### Department

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Visual Web Page Development: UIX
Visual Web Page Development: UIX
Visual Web Development: JSP
Running JSP on Embedded OC4J

Microsoft adds Web apps to Java conversion tool
Continuing attempts to lure developers from the rival Java development camp, Microsoft on Tuesday is releasing Version 2.0 of its Java Language Conversion Assistant (JLCA) software to enable migration of Java applications to the Microsoft .Net framework. Key to Version 2.0 is support of migration of Web applications based on JavaServer Pages (JSP) and servlets to C# and ASP.Net.

Wakesoft enables services-oriented architectures
Wakesoft this week released Wakesoft Architecture Platform, Version 4, providing services provisioning for Java-based services-oriented systems. The product actually is a renaming of the company's Wakesoft Architecture Server, which remains as the core of the platform. Wakesoft's system provides for simplified Java development for deployment of application servers, company officials said.

Choose Your J2EE Weapons Wisely
BC4J gets a mention in Jon Udell's story in InfoWorld.com

Sun to Rave about ease of use at JavaOne
The new developer tool, code-named Project Rave, will be demonstrated at Sun's JavaOne Conference in San Francisco next week. It will incorporate the JavaServer Faces Web API as well as a number of Java Web services and database connectivity technologies, all with the aim of making Java development -- and in particular, Java Web services development -- easier to do.

Eclipse 3.0 Draft Plan
Get an early look at what Eclipse 3.0 is planning...

Commentary: Microsoft's Jupiter expedition
Microsoft has announced Jupiter, a forthcoming server software bundle to which developers can write content-rich, process-driven, self-service applications, opening a new front in its war with BEA Systems, IBM and Oracle for developers' attention. With Jupiter, Microsoft will integrate its collection of servers—BizTalk, Content Management and Commerce—into a single application platform running on Windows and developed with Visual Studio.Net. The announcement signals that the software giant has the following goals:

Sun Opens Up Java Process
An efficient mechanism to build on the Java specifications is important to growing the number of developers who work with the Java language, according to analysts. Large companies, including Oracle, BEA Systems and IBM, that sell tools based on Java depend on improvements in the language to compete with Microsoft's line of programming products, including its flagship tool, Visual Studio.Net.

Developing Web Applications with JavaServer Faces
Sun tutorial article on JSP.

Gosling: New Java tools to focus on ease of use
"What people need to know" is: "Think most of it's around tool development, so stay tuned."
Improved UML Model for ADF Business Components
UML Diagrammer Enhancements

- Autolayout
- Thumbnail View
- Diagram Now Scrolls While Dragging
- Diagram Links
  - To files, URLs, and other resources
- Tighter Rose and TogetherJ Round-Tripping
Use Case Diagram
Use Case Diagram

Precondition:

Postcondition:

Minimal Guarantee(s):

Success Guarantee(s):

Trigger:

Scenario:

1. The agent specifies the travel itinerary
2. The system searches an appropriate set of flights and presents them to the agent.
3. The agent selects a flight.
4. The system verifies there is space available on the flight and reserves a seat on the flight.
5. Get Payment Details
6. "Insert Next Element Here"
More Flexible Technology Choices and Architecture Than Ever
Existing Oracle Frameworks Consolidated into Enhanced Oracle ADF in Oracle 10g

View
Controller
Model
Business Services
Data Access
Business Objects

ADF Application Module

ADF View Object
ADF Entity Object

ADF Data Control

ADF Bindings

ADF JClient

JSP
Struts

JClient
JUI

Swing
ADF JClient

Swing
ADF UIX

9.0.3
9.0.4
10g

Business Components for Java
In JDev 10g, Oracle ADF Offers Single J2EE App Architecture with New, Flexible Choices

- JavaServer Faces
- Declarative ADF Controller
- Custom Beans
  - TopLink Mapping
  - Custom Mapping
- Enterprise Java Beans
- Web Services
ADF Binding Concepts

ReviewThreads.jsp
- Assign
  - Name:  
  - Team: BC4J
  - <c:forEach>  
  - <c:out>  
  - </c:forEach>

Page2.ui

Panel3.java

Binding Context
- Binding Container
- ReviewThreads
  - Control Action Binding
  - Attr
  - List
  - Control Value Bindings
  - Iterator Bindings
  - Range

DataControl
- LookupCodes

ForumService
- Forum
- Threads

Business Service
- ForumService

ADF Application Module
- BusinessService

LookupCodes
- Web Service
Flexible Data Binding Architecture
Unified Application Navigator

- Objects Organized By Package
- Regardless of Type
- Consistent Structure Pane Use
Application Templates
Application Templates
Technology Scope

- Simplifies the Gallery
- Simplifies Drag and Drop Choices
- Simplifies the Component Palettes
More Day to Day Productivity Than Ever
Semantic Error Highlighting

```java
public class MyBean {
    public MyBean() {
        URL u = new URL("http://otn.oracle.com");
    }
}
```

Unreported exception: java.net.MalformedURLException
Automatic Import Assistance

```
package model;

public class Class1
{
public Class1()
{
import javax.swing.JFrame (Alt+Enter)

    JFrame f = new JFrame();
}
}
```
Improved Code Editor
public boolean doSomethingComplicated( int level, String name, 
    Component component ) throws OutOfCheeseException
{

}
Simplified Help System

Field Summary

<table>
<thead>
<tr>
<th>Static float</th>
<th>BOTTOM_ALIGNMENT</th>
<th>Ease-of-use constant for getAlignmentX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static float</td>
<td>CENTER_ALIGNMENT</td>
<td>Ease-of-use constant for getAlignmentX and getAlignmentY.</td>
</tr>
</tbody>
</table>
java.awt.Component

public Color getBackground()

Gets the background color of this component.

Returns:
Color - this component’s background color; if this component does not have a background color, the background color of its parent is returned

See also:
setBackground
Quick Navigation to Files

Go to Java Class

Enter the class or interface name.

Name: JFrame

Browse...

Go to:

- JFrame (javax.swing)
- JFrame (oracle.jdevimpl.uieditor.proxy)
- JFrameAboutBoxGenerator (oracle.jdeveloper.builder.ui.frame)
- JFrameAttributePanel (oracle.jdeveloper.builder.ui.frame)
- JFrameBeanInfo (oracle.jdevimpl.uieditor.proxy)
- JFrameGenerator (oracle.jdeveloper.builder.ui.frame)
Code Audit and Metrics

- Class1.java: 9 violations
  - The doc comment is missing.
  - The comment description is blank.
  - The @throws Class1$OutOfCheeseException tag is missing.
  - The @param level tag has no description.
  - The @param name tag has no description.
  - The @param component tag has no description.

Audit completed
Surround With

```java
public boolean doSomethingComplicated()
    Component component) throws OutOfCheeseException
    {
        URL u = new URL("blah");
    }

class OutOfCheeseException extends
```
public boolean doSomethingComplicated(int level, String name, Component component) throws OutOfCheeseException
{
    try
    {
        URL u = new URL("blah");
    }
    catch (MalformedURLException e)
    {
        // handle exception
    }
}
Exception in thread main
java.lang.NullPointerException: Ahah. This method is bad.
    at oracle.ide.scm.MyBean.callBadMethod(MyBean.java:34)
    at oracle.ide.scm.MyBean.doThing(MyBean.java:29)
    at oracle.ide.scm.MyBean.blah(MyBean.java:24)
    at oracle.ide.scm.MyBean.main(MyBean.java:19)

Process exited with exit code 1.
package oracle.ide.scm;

public class MyBean
{
    private int type;
    private String name;
    private boolean alive;

    public MyBean()
    {
    }
}
Visual Differencing

// Panel binding definition used by design time
private J_PanelBinding panelBinding = new J_PanelBinding("C1");
private J_TextField expoField = new J_TextField();
private J_TextField enameField = new J_TextField();
private J_TextField salField = new J_TextField();
private J_TextField hiredateField = new J_TextField();
private J_NavigationBar JNavigationBar1 = new J_NavigationBar();

/**
 * The default constructor for panel
 */
public TestPanel()
{
}

/**
 * Constructor that takes a shared panel binding
 */
public TestPanel(J_PanelBinding binding)
{
    setPanelBinding(binding);
}

/**
 * the J_Init method
 */
public void J_Init()
{
    this.setLayout(null);
    expoField.setDocument(J_TextFieldBinding, createAttributeSet()
        enameField.setDocument(J_TextFieldBinding, createAttributeSet()
        salField.setDocument(J_TextFieldBinding, createAttributeSet()
        hiredateField.setDocument(J_TextFieldBinding, createAttributeSet());
    }
Hot Swap Debugging

```
public float getSalary() {
    return salary;
}

public void setName(String name) {
    this.name = name;
}

public String getName() {
    return name;
}

public void setBirthday(Date birthday) {
    this.birthday = birthday;
}

public Date getBirthday() {
    // return the current date
    return birthday;
}
```
Hot Swap Debugging

```java
public float getSalary() {  
    return salary;
}

public void setName(String name) {  
    this.name = name;
}

public String getName() {  
    return name;
}

public void setBirthday(Date birthday) {  
    this.birthday = birthday;
}

public Date getBirthday() {  
    birthday = new Date(); // oops!
    return birthday;
}
```
Hot Swap Debugging

```
public float getSalary() { 
    return salary;
}

public void setName(String name) { 
    this.name = name;
}

public String getName() { 
    return name;
}

public void setBirthday(Date birthday) { 
    this.birthday = birthday;
}

public Date getBirthday() { 
    birthday = new Date();
    return birthday;
}
```
Debugging PL/SQL (Oracle8i, 9i)
Execution Profiler

### Call Sample Table: Profiling: Run TTYCaffe.java

<table>
<thead>
<tr>
<th>Called from</th>
<th>Class</th>
<th>Method</th>
<th>Hit%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BenchmarkUnit</td>
<td>testScore</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Global stats, in method:** 0.04%  **On stack:** 25.29%

**Method:** BenchmarkUnit.loopsPerSecond

**Signature:**

**Called from code:** 0.17%

### Calls Table

<table>
<thead>
<tr>
<th>Class</th>
<th>Method</th>
<th>Hit%</th>
</tr>
</thead>
<tbody>
<tr>
<td>FloatAtom</td>
<td>execute</td>
<td>16.78%</td>
</tr>
<tr>
<td>LogicAtom</td>
<td>execute</td>
<td>16.78%</td>
</tr>
<tr>
<td>LoopAtom</td>
<td>execute</td>
<td>16.78%</td>
</tr>
<tr>
<td>MethodAtom</td>
<td>execute</td>
<td>16.61%</td>
</tr>
<tr>
<td>SieveAtom</td>
<td>execute</td>
<td>16.44%</td>
</tr>
<tr>
<td>StringAtom</td>
<td>execute</td>
<td>15.41%</td>
</tr>
<tr>
<td>StopWatch</td>
<td>Milliseconds</td>
<td>1.03%</td>
</tr>
</tbody>
</table>

---

**Class** | **Method**       | **Hit%** | **On Stack%**
--- | ---------------- | --------- | ------------------
[Root]    | [Root]           | 0.00%    | 100.00%           
TTYCaffe  | main             | 0.00%    | 99.61%            
BenchmarkUnit | testScore       | 0.00%    | 99.48%            
BenchmarkUnit | testMilliseconds | 0.04%    | 74.19%            
BenchmarkUnit | loopsPerSecond   | 0.04%    | 25.29%            
[Thread]  | Finalizer        | 0.04%    | 0.00%             
TTYCaffe  | addTest          | 0.13%    | 0.13%             
StopWatch | Milliseconds     | 0.26%    | 0.26%             
[Thread]  | main             | 0.35%    | 99.61%            
MethodAtom| execute          | 0.69%    | 16.67%            
MethodAtom| arithmeticSeries | 5.89%    | 5.89%             
MethodAtom| notInlineableSeries | 10.09% | 10.09%        
SieveAtom | execute          | 15.55%   | 15.55%            
StringAtom| execute          | 15.81%   | 15.81%            
LoopAtom  | execute          | 16.89%   | 16.89%            
FloatAtom | execute          | 17.11%   | 17.11%            
LogicAtom | execute          | 17.11%   | 17.11%            

**2309 Samples**
### Memory Profiler

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<th>No. Freed</th>
<th>Sz Freed</th>
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<th>Diff Sz</th>
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<td>0.00515</td>
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<td></td>
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<td>50.95724</td>
<td>0.03885</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>EXECUTE_QUERY</td>
<td>Unknown</td>
<td>50.97603</td>
<td>50.98080</td>
<td>0.00477</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Code Position:** Unknown

**Comment:**

EXECUTE_QUERY - ViewObject executeQueryForCollection DeptView
TCP Packet Monitor

- Analyze and Debug Web Service Traffic
- Edit/Resend Packets
Standard WS-I Log File, Formatting
WS-I Profile Conformance Report

WS-I Basic Profile Conformance Draft Report. This is a prerelease version and no statement can be made from this report on WS-I conformance.

Timestamp: 2003-09-04T17:56:22.912Z

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More Widely Used Than Ever
Now Over 1500 Oracle Apps Developers are Using Oracle ADF

- Complex, Scalable J2EE Business Applications
- Self-Service Web, Batch, and Web Services Interfaces
- Handful of Teams Using Swing Clients as Well  
  - JClient/Swing Use Much Higher Externally  
  - Some External Customers Have Implemented Entire ERP Systems
- Targeting Intranet and Internet Deployment on J2EE
- To Implement Design Patterns and Save on Testing
- 8 Midtier Boxes (Mix of Linux and Solaris)
- One Big Database on Big Sun box
- 100,000 student sessions per day
- All BC4J based
Building Your First J2EE App With JDev 10g
First Things First: Need to Understand...

- Model, View, Controller Architecture
- J2EE Design Patterns
- What Role a Framework Can Play
- How Forms Concepts Map to Oracle ADF
Model / View / Controller Architecture

Controller Layer
- User Input / Page Flow
- Handling Logic

Business Services Layer
- Business Service Interface
- Code
- Query Results
- Business Objects
- Business Data

Model Layer
- Collections of Value Objects

View Layer
- Business Service Interface
- Business Data
- Business Objects

Example Diagram:
- BC4J Toy Store Demo
- You Have the Following Items in Your Cart:

<table>
<thead>
<tr>
<th>Item ID</th>
<th>Product Name</th>
<th>Availability</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>BST7-19</td>
<td>Statue V Rock</td>
<td>In Stock</td>
<td>$15.99</td>
<td>2</td>
<td>$31.98</td>
</tr>
<tr>
<td>BST7-22</td>
<td>Girl's Skirt</td>
<td>Out of Stock</td>
<td>$8.99</td>
<td>2</td>
<td>$17.98</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$49.96</td>
</tr>
</tbody>
</table>
J2EE Design Patterns

- Required for All Real World Applications
- Implementing Them Is:
  - Time Consuming
  - Error Prone
  - Tedious
  - More to Test, Debug, and Maintain
- Don't You Have An Application to Finish?
J2EE Design Patterns Books

- Best Practice Techniques
  - Improve Performance
  - Increase Maintainability
  - Avoid Typical Problems
- Application Architecture Ideas
  - What To Do In Which Tier
  - Which J2EE Technology When?
- Paragraphs of Text/Diagrams
  - Not Ready-to-use Code
"Many common problems (beyond those addressed by J2EE application servers) have been solved well by open source or commercial packages and frameworks. In such cases, designing and implementing a proprietary solution may be wasted effort. By adopting an existing solution, we are free to devote all our effort to meeting business requirements."
Popular Framework-Based Techniques

- **Struts**
  - Controller Layer
    - User Input / Page Flow Handling Logic
  - Controller Layer
    - Model Layer
      - Collections of Value Objects
  - View Layer
    - Business Data
      - Business Objects
        - Business Service
          - Code
            - Query Results
              - Business Services Layer
                - Business Objects
        - JSP + Taglibs
Model, Services, Data Access, Business Objects Often Hand-Coded

Struts

Controller Layer

User Input / Page Flow Handling Logic

View Layer

JSP + Taglibs

Business Services Layer

Business Service

Code

Query Results

Collections of Value Objects

Business Data

Model Layer

Struts

Controller Layer

User Input / Page Flow Handling Logic

View Layer

JSP + Taglibs

Business Services Layer

Business Service

Code

Query Results

Collections of Value Objects

Business Data

Model Layer

Struts

Controller Layer

User Input / Page Flow Handling Logic

View Layer

JSP + Taglibs

Business Services Layer

Business Service

Code

Query Results

Collections of Value Objects

Business Data

Model Layer

Struts

Controller Layer

User Input / Page Flow Handling Logic

View Layer

JSP + Taglibs

Business Services Layer

Business Service

Code

Query Results

Collections of Value Objects

Business Data

Model Layer

Struts

Controller Layer

User Input / Page Flow Handling Logic

View Layer

JSP + Taglibs

Business Services Layer

Business Service

Code

Query Results

Collections of Value Objects

Business Data

Model Layer
Framework Can Complement Struts or Swing to Help Build Business Services and Model

- Simplify Implementing Business Services
- Simplify Managing Persistent Business Objects
- Simplify Enforcing Reusable Business Rules
- Simplify Writing Data Access Objects
- Simplify Coordinating DAO's with BO's
- Simplify Handling and Presenting Errors
- Simplify Internationalization
Oracle ADF Framework

ADF Model

Business Services Layer

Business Service

Code

Query Results

Business Objects

Model Layer

Collections of Value Objects

ADF Business Components
Step by Step Guide

- Organize the Projects in Your Workspace
  - Separate the Model Project
  - Often Convenient to Keep View/Controller Together

- Use Java Packages to Organize Components
  - `model.business`
  - `model.queries`
  - `model.services`

- Create or Reverse-Engineer Entity Objects
  - To Encapsulate Validation & Persistence Details
Step by Step Guide

- Setup Any Known Validation Rules
  - Required, Updateability, Validation, Etc.
  - Declarative Rules
  - Method-based Rules
- Setup Database Sequence-Valued Primary Keys
- Setup UI Control Hints
  - Labels
Step by Step Guide

- Think About a Given End-User Use Case
  - For Example, Browse and Edit Employees
  - Identifies Which Business Objects Are Involved
  - Could Use the New Use Case Diagrammer
- Start By Creating Some Skeleton Pages
  - Helps Think About What Data You Will Need
- Default View Objects for Involved Entities
  - Or Reuse Existing View Objects if They Exist
- Create Application Module to Support Use Case
  - This is the Business Service That Manages Data
Step by Step Guide

• Both Wizards and UML Modelers Available
  – Can Help Get and Communicate the Big Picture
  – Onscreen Editing, Too
• Customize the Queries to Join/Project Data
  – Only Query the Data You Need
  – Query All the Data You Can in One Query
• Test the Application Module
  – Don't Need a UI to Test the Business Service
• Use Data Control Palette to Drop Initial UI
  – Table for the Browse Form, Input Form for the Edit
• Use Visual Editor to Tailor the UI
  – For example, Change a Text Field to a Pop List
Step by Step Guide

• Link the Pages Together
  – Select Row Link
  – `setCurrentRowWithKey()` Method
  – Link back to the browse page

• Run or Debug the Application
  – Runs on the Embedded Container
Business Service Components
Browse Page with Page Flow
Edit Page with Page Flow
Struts / BC4J Toy Store Demo

http://otn.oracle.com/samples/prod/jdev/bc4jtoystore
Framework-Based Development Examples

<<Application Module>>
toystore::model::services
ToyStoreService

<<Application Module>>
toystore::model::services
ToyStoreService

<<View Object>>
toystore::model::dataaccess
ProductsInCategory

<<View Object>>
toystore::model::dataaccess
ProductsInCategory

<<Entity Object>>
toystore::model::businessobjects
Account

<<Entity Object>>
toystore::model::businessobjects
Account

oracle::jbo::server
ApplicationModuleImpl

oracle::jbo::server
ViewObjectImpl

oracle::jbo::server
EntityObjectImpl

oracle::jbo::server
Row

<<Value Object>>
toystore::model::dataaccess::common
ShoppingCartRow

Controller Layer

org::apache::struts::action
ActionForm

<<Struts Form Bean>>
toystore::controller::strutsformbeans
LoginForm

<<Struts Action>>
toystore::controller::strutsactions
PlaceOrderAction

Regression Test Suite

junit.framework
TestCase

<<JUnit Test Case>>
toystore::test::unitests
CreateAnOrderTest

Model Layer

<<Struts Form Bean>>
toystore::model::businessobjects
Account

<<Entity Object>>
toystore::model::businessobjects
Account

<<View Object>>
toystore::model::dataaccess
ProductsInCategory

<<View Object>>
toystore::model::dataaccess
ProductsInCategory

<<Application Module>>
toystore::model::services
ToyStoreService

<<Application Module>>
toystore::model::services
ToyStoreService

<<Struts Action>>
toystore::controller::strutsformbeans
LoginForm

<<Struts Form Bean>>
toystore::controller::strutsformbeans
LoginForm

<<JUnit Test Case>>
toystore::test::unitests
CreateAnOrderTest

<<JUnit Test Case>>
toystore::test::unitests
CreateAnOrderTest
Our Job is Never Done

• Rich-Client GUI Development
  – Still Requires More Swing Expertise Than It Should
  – Layout Managers Add Power, but Complexity
• Visual, Declarative Development
  – For 10g, We Have Achieved it For UIX Pages
  – For Future Releases, We Want it For Swing, too
    • For 10g, We've Made Binding Declarative
• Successful JClient Users Using UI Frameworks
  – Some Built In-House
  – Some Built Using OpenSource Like JGoodies
Visual UI Form and Panel Editing
Example of Custom Framework

- Hundreds of UI Screens to Build
- Many Developers Working On System
- Team UI Standards to Enforce
- Instead of Designing Each Screen By Hand…
- Build a Custom Framework!

```xml
<panel datamodel="TestProject.HRModule" xmlns="urn:jolient-smartpanel">
  <table border-style="" cellpadding="2" cellspacing="0" viewobject="AllEmployees">
    <tr>
      <th><label attr="Empno"/></th>
      <td><display attr="Empno" size="5"/></td>
      <th><label attr="Ename"/></th>
      <td><display attr="Ename"/></td>
    </tr>
    <tr>
      <th><label attr="Hiredate"/></th>
      <td><display attr="Hiredate" align="right"/></td>
      <th><label attr="WorksInDeptno"/></th>
      <td>
        <poplist attr="WorksInDeptno"
          list-viewobject="Departments" list-target-attr="WorksInDeptno"
          list-value-attr="Deptno" list-display-attr="Ename"/>
      </td>
    </tr>
    <tr>
      <th><label attr="Sal"/></th>
    </tr>
  </table>
</panel>
```

`it.azienda.util.SmartPanel`
JGoodies Framework

http://forms.dev.java.net
Monday, September 08, 2003

ADF Data Binding Primer Article

This article I've been working on for the last few weeks (in between helping find last minute show-stopper problems to get JDeveloper 10g Preview out the door) explains the basics of the new Oracle Application Development Framework's Data Binding layer.

It gives an overview of the ADF's runtime and design time data binding facilities and puts the concepts into practice with a simple sample application. It's a special OracleWorld draft that will be eventually uploaded to OTN once I get back to the office.

I'm posting this from a T-Mobile wireless hotspot in the Starbucks on the corner of O'Farrell and Cyril Magnin Place in San Francisco, near the Moscone Center where OracleWorld is happening this week.

Enjoy.

And OTN Said, "Let there be 10g". And there was.

The downloadable bits are now in place and available on OTN for JDeveloper 10g.

Visit the Product Tour and Download page, and don't forget to checkout the demos and tutorials available. They will help you get the smoothest start with this new major release.

Once you download and startup the tool, pick Help | Release Notes from the main menu to read over any