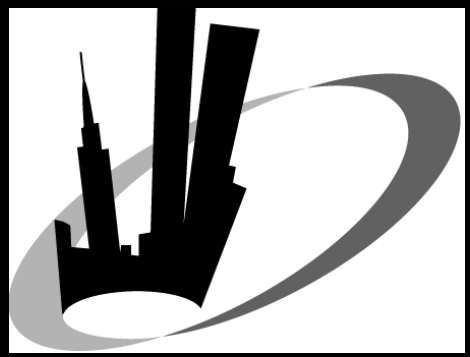
JDeveloper 10*g* and Oracle ADF: More Visual and Flexible Than Ever

Steve Muench
Product Manager, Developer,
Author, Java/XML Evangelist
Oracle Corporation



September 23, 2003
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

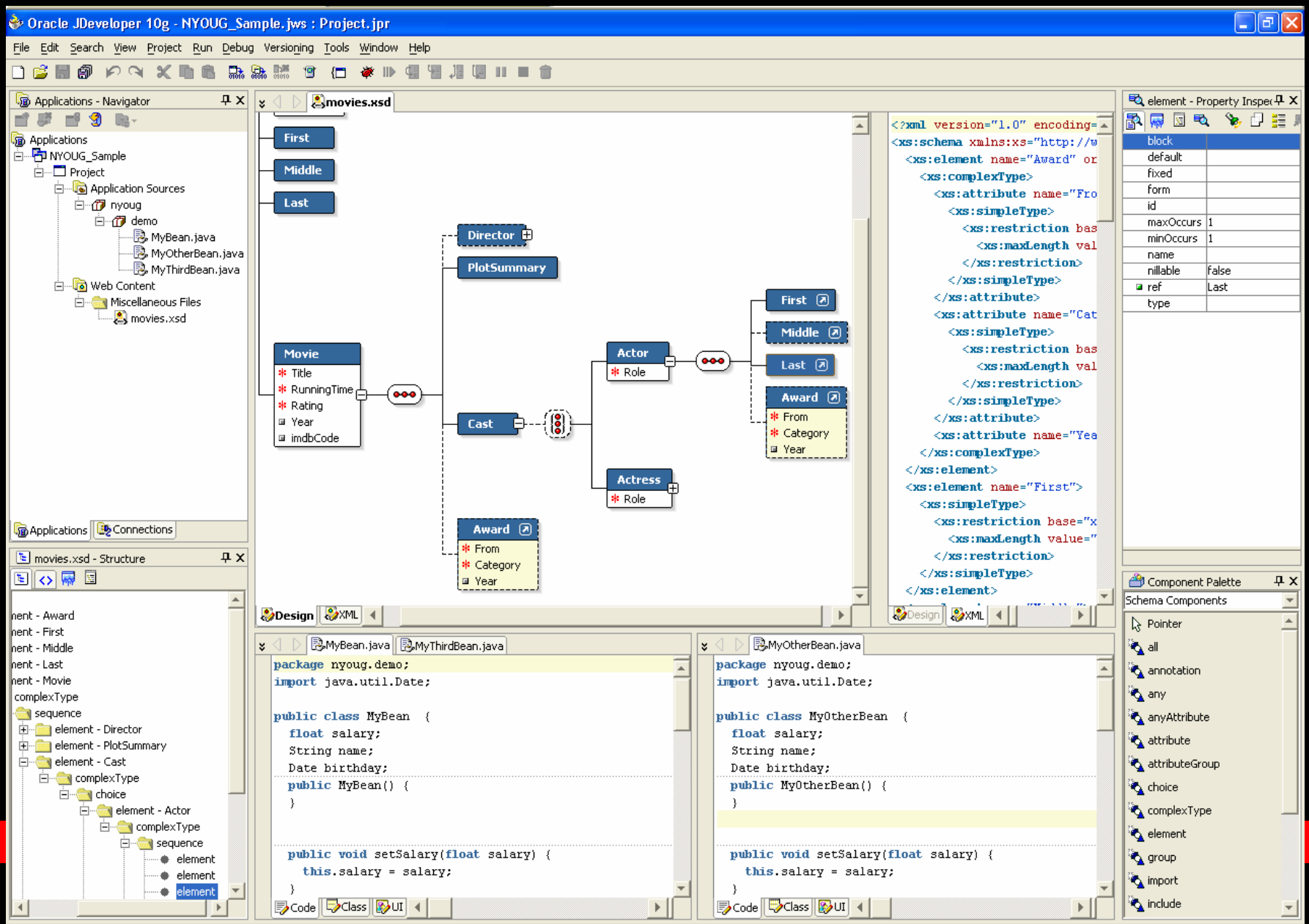
History of the JDeveloper Product

Agenda for Today

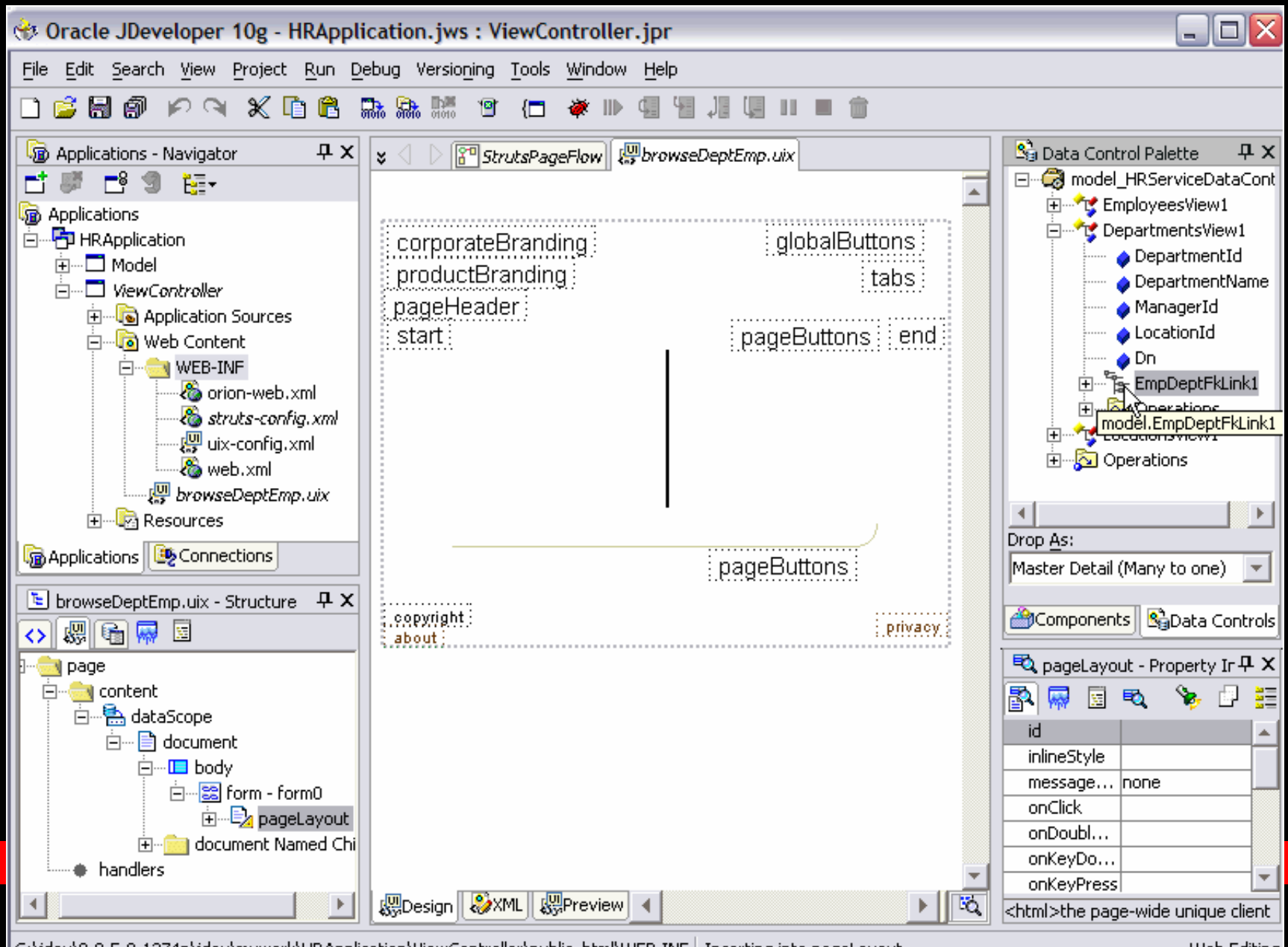
- Overview of New JDeveloper 10g Features
  - For Application Developers
  - For Java Coders
  - For SQL Developers
  - For UML Modeling
- Building Your First J2EE App Step by Step
  - See the Features in Action
- Where is JDev Going in Future Releases?
  - A Few Ideas of What We're Working On Next

More Visual Development

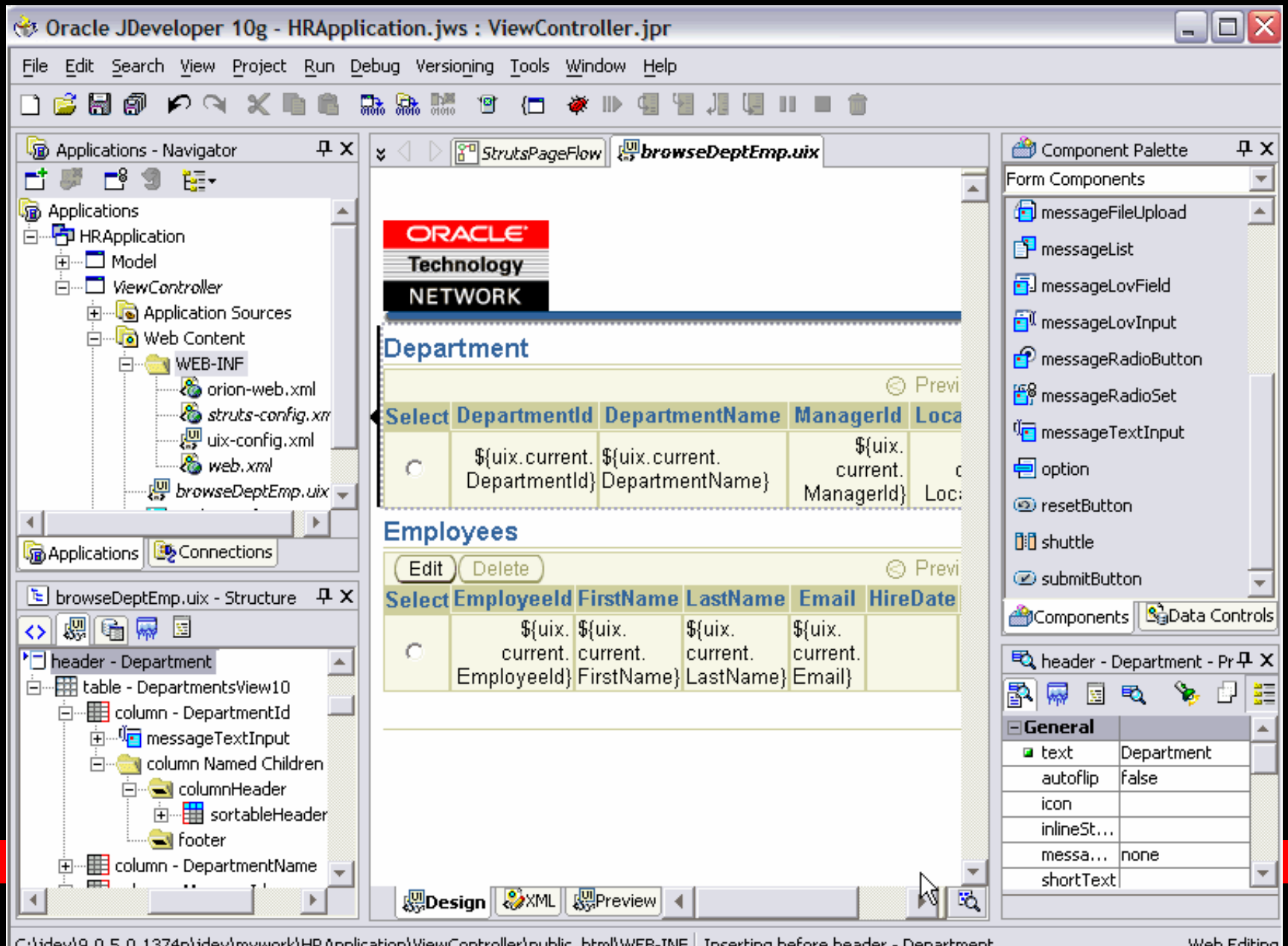
Improved Window Management



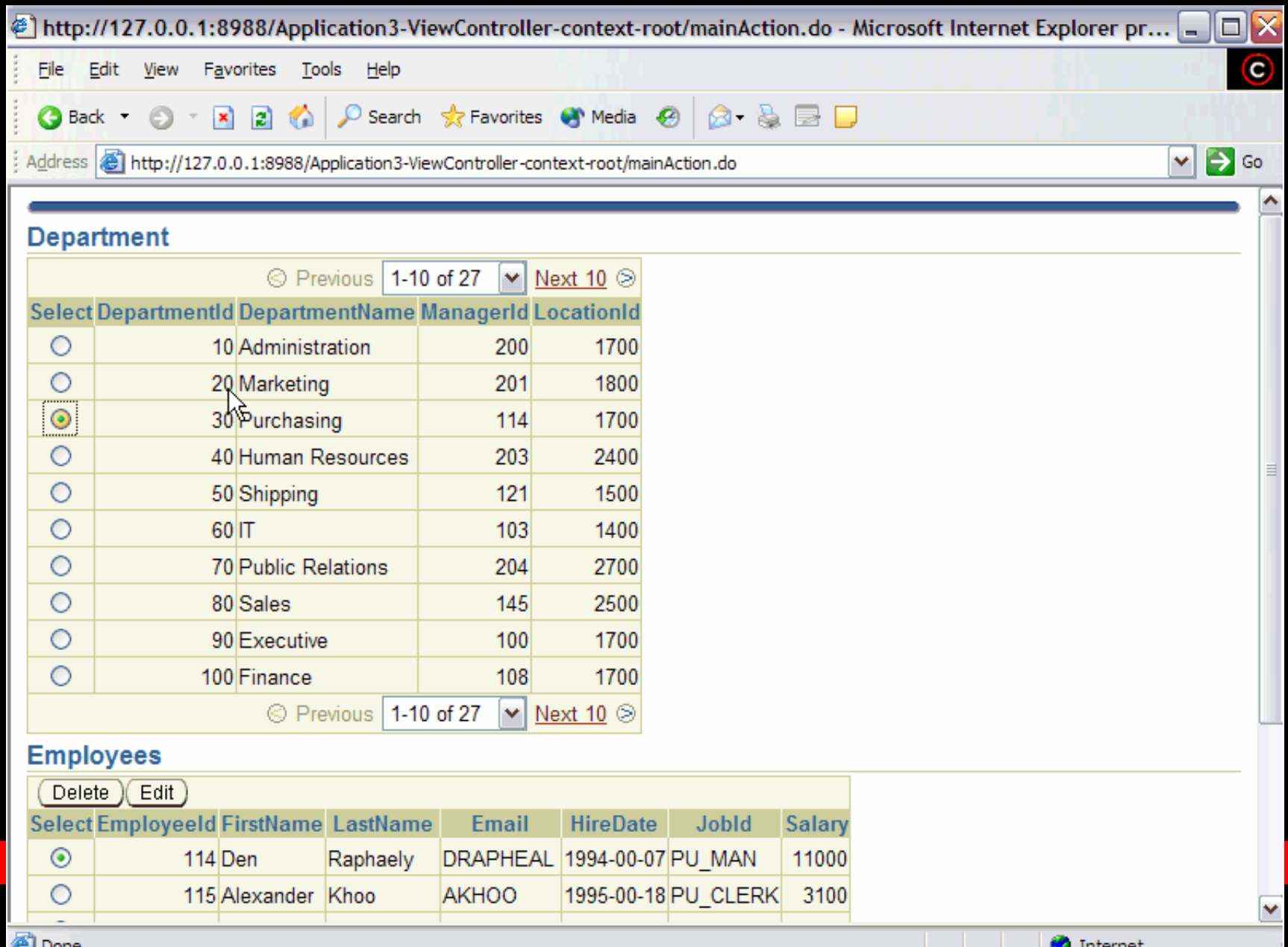
Visual Web Page Development: UIX



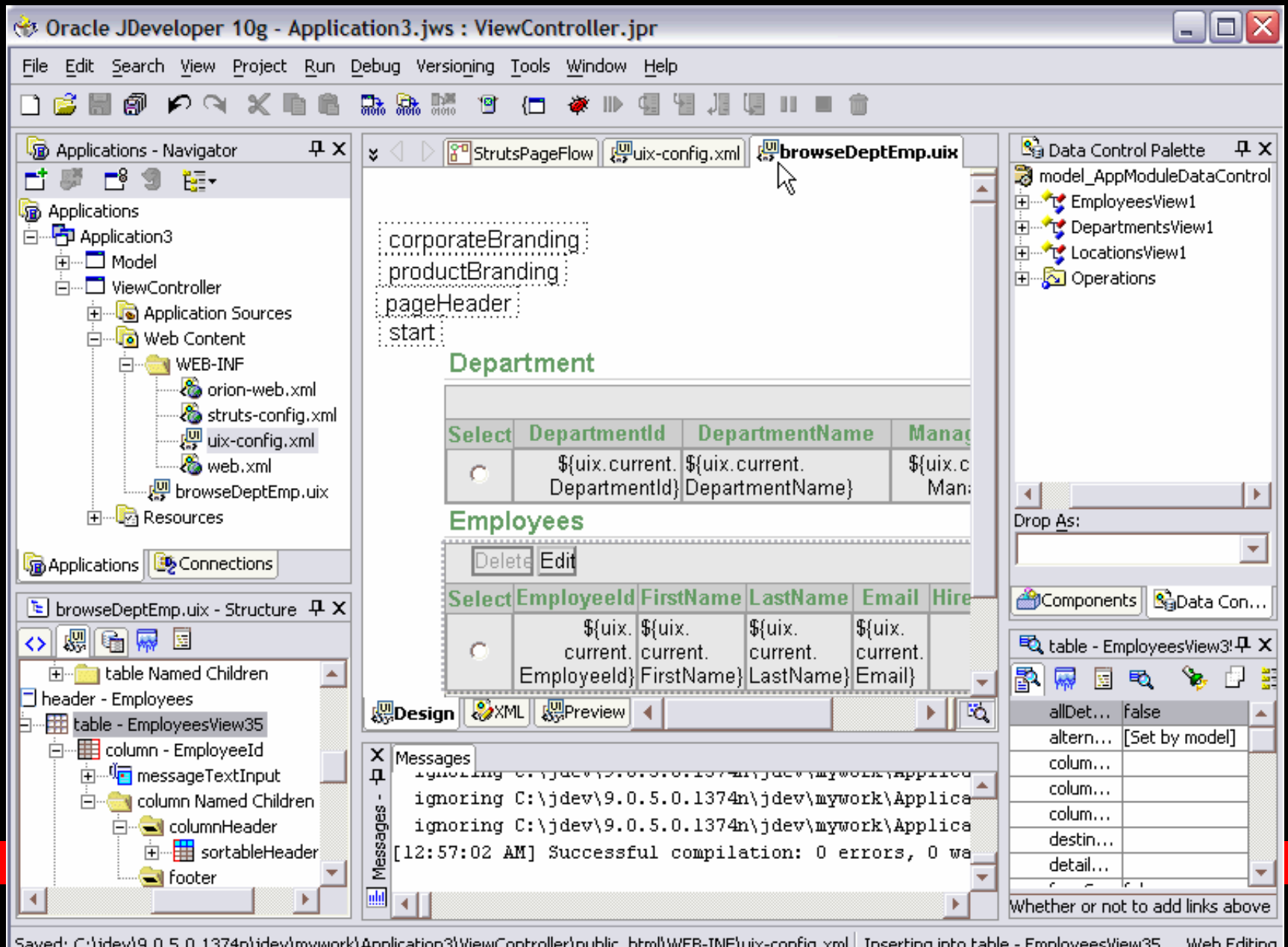
Visual Web Page Development: UIX



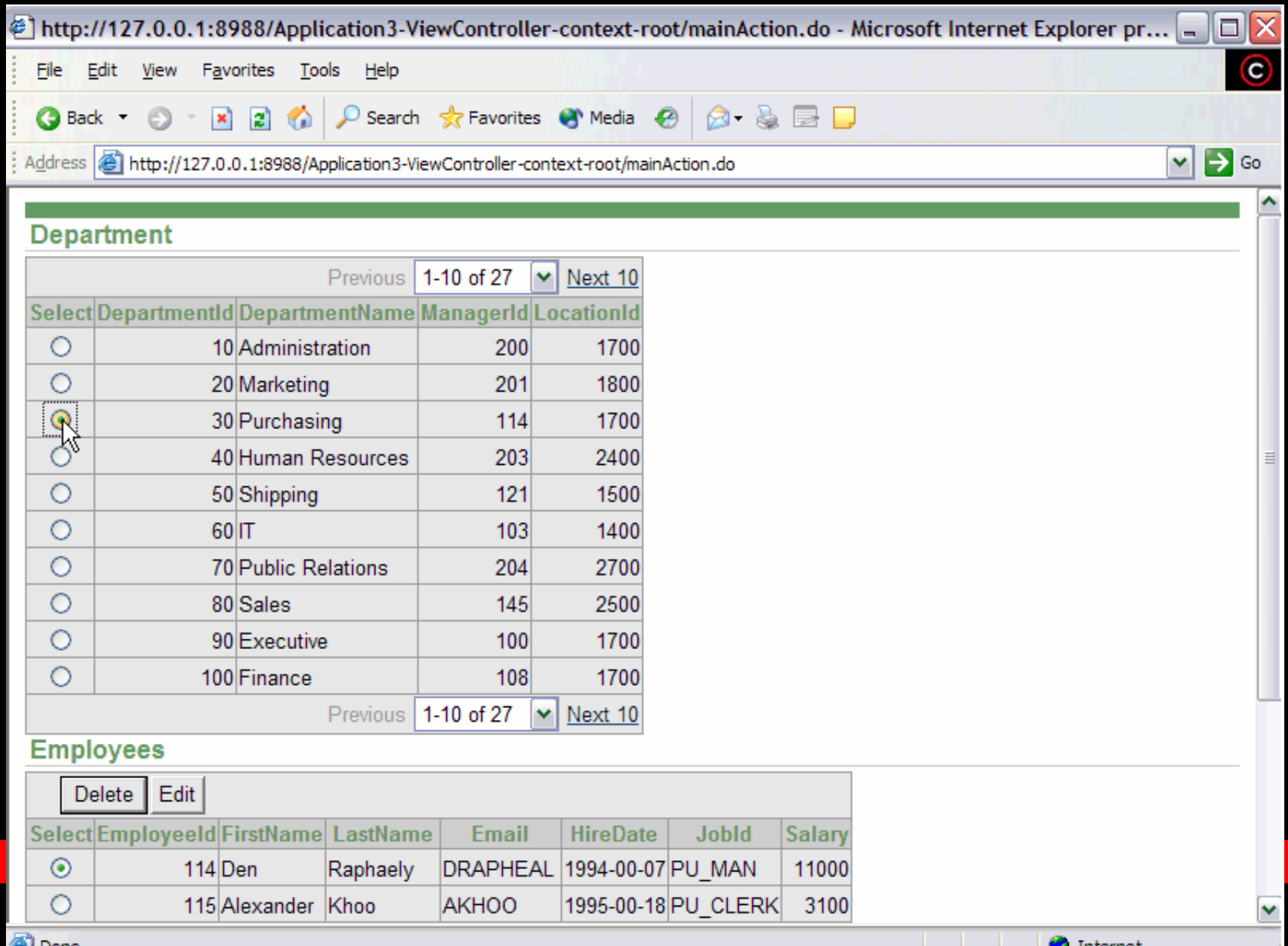
Visual Web Page Development: UIX



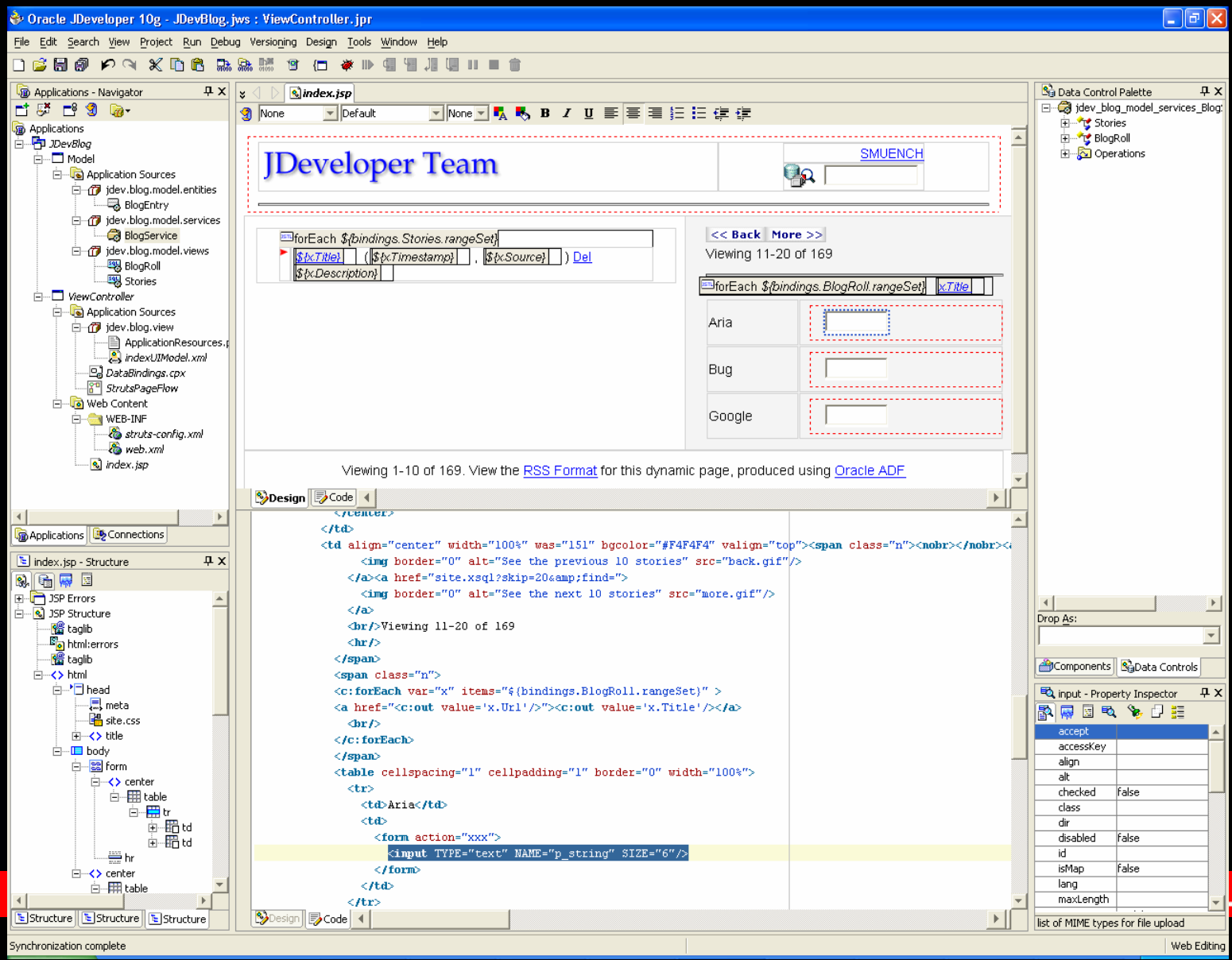
Visual Web Page Development: UIX



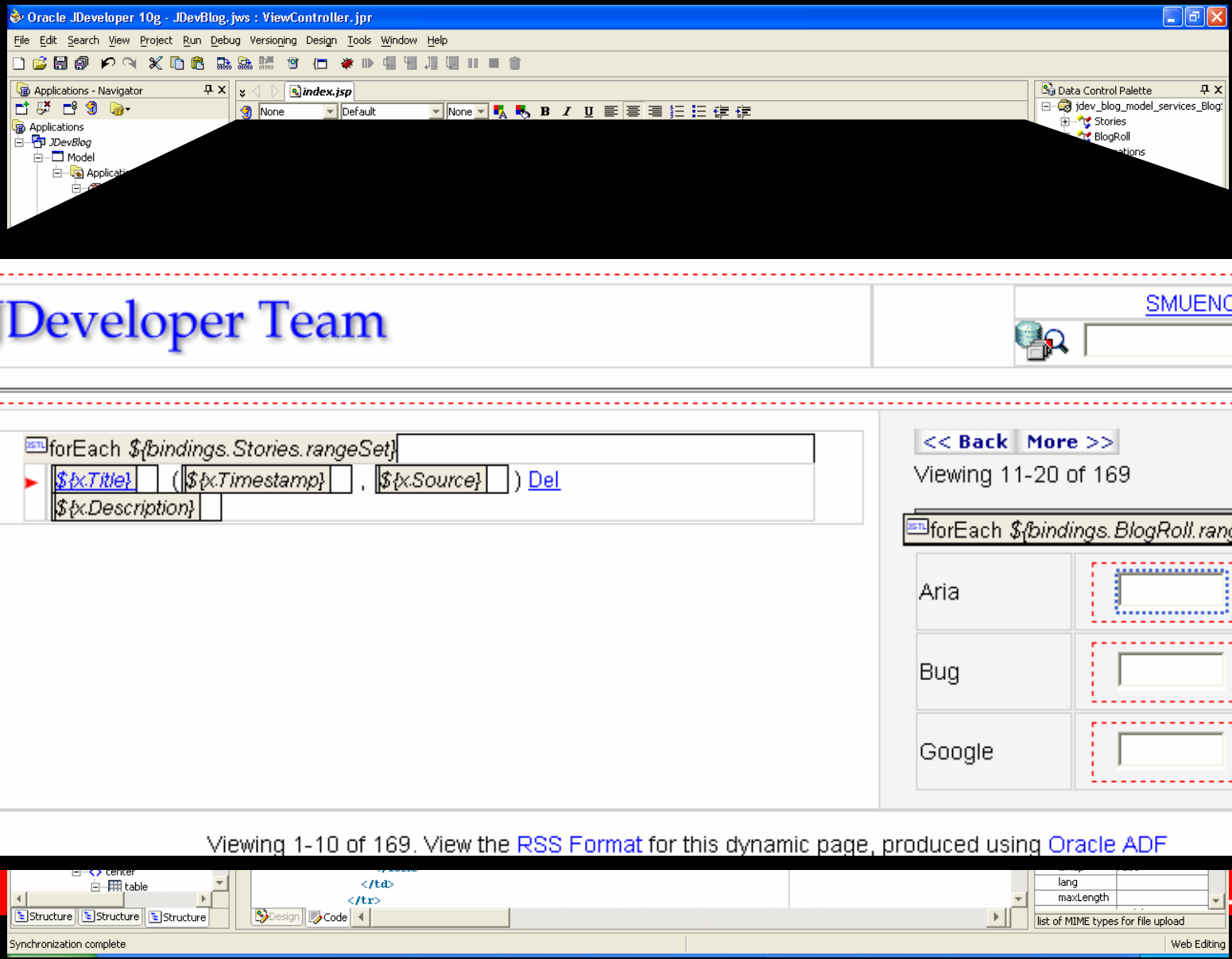
Visual Web Page Development: UIX



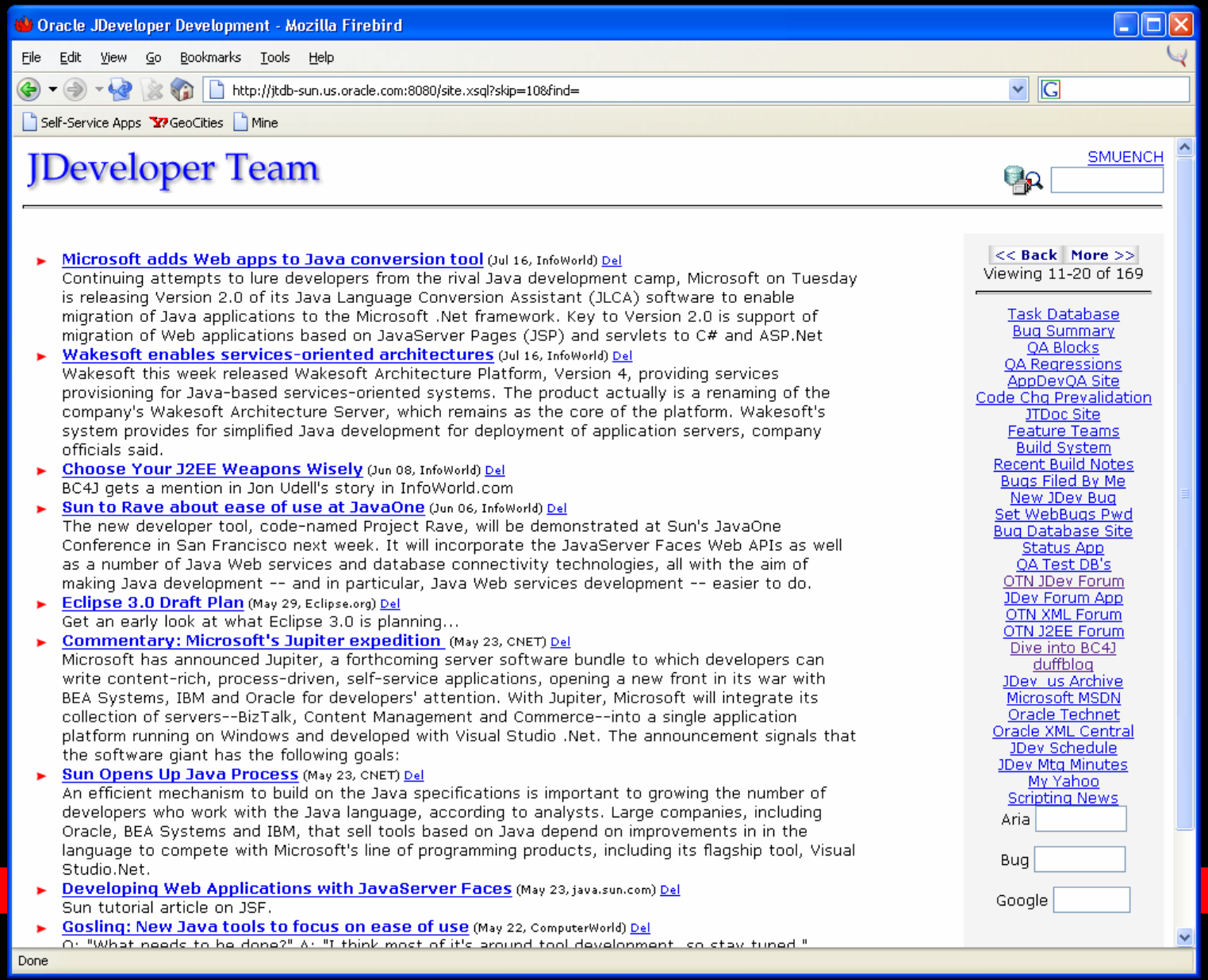
Visual Web Development: JSP



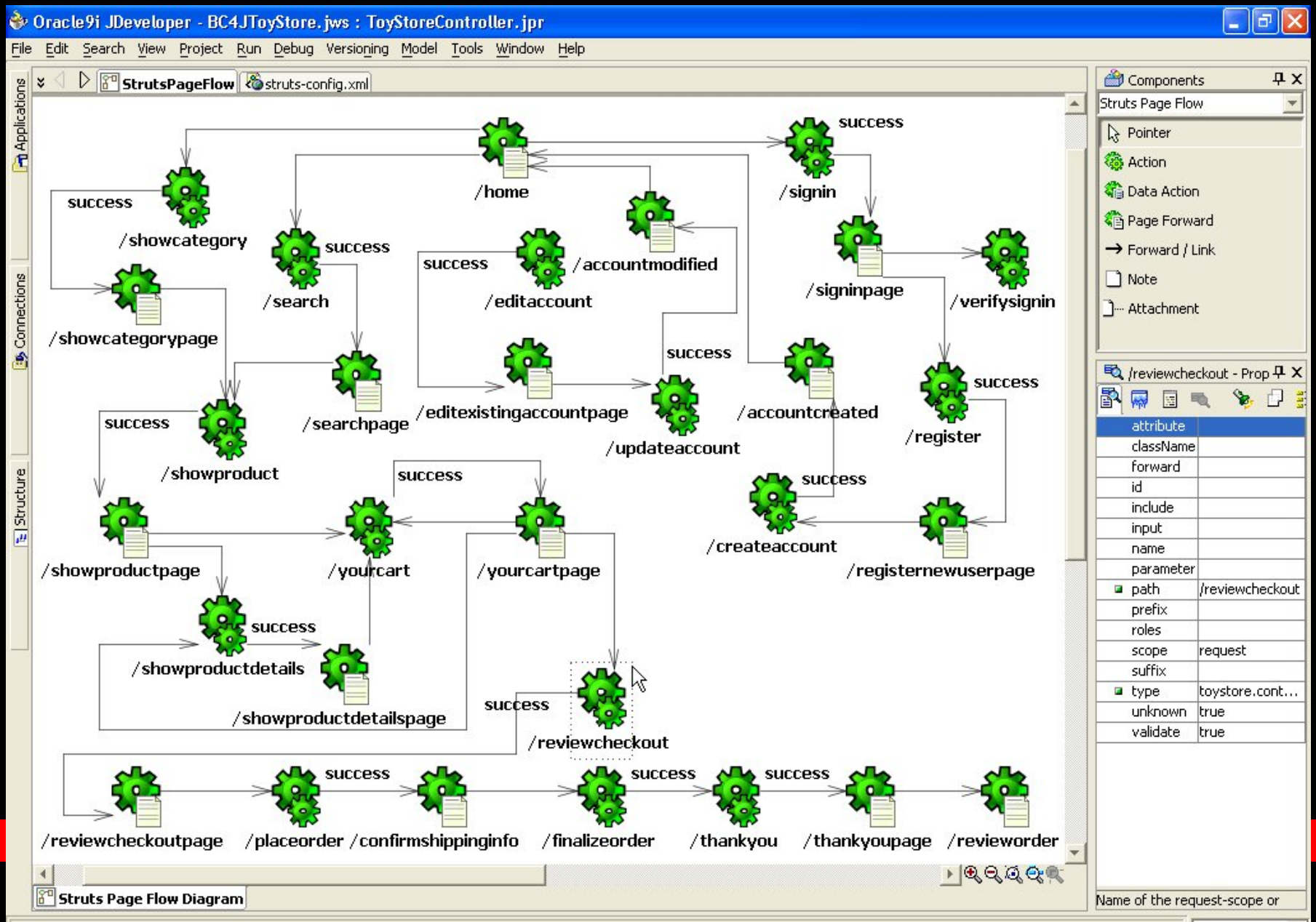
Visual Web Development: JSP



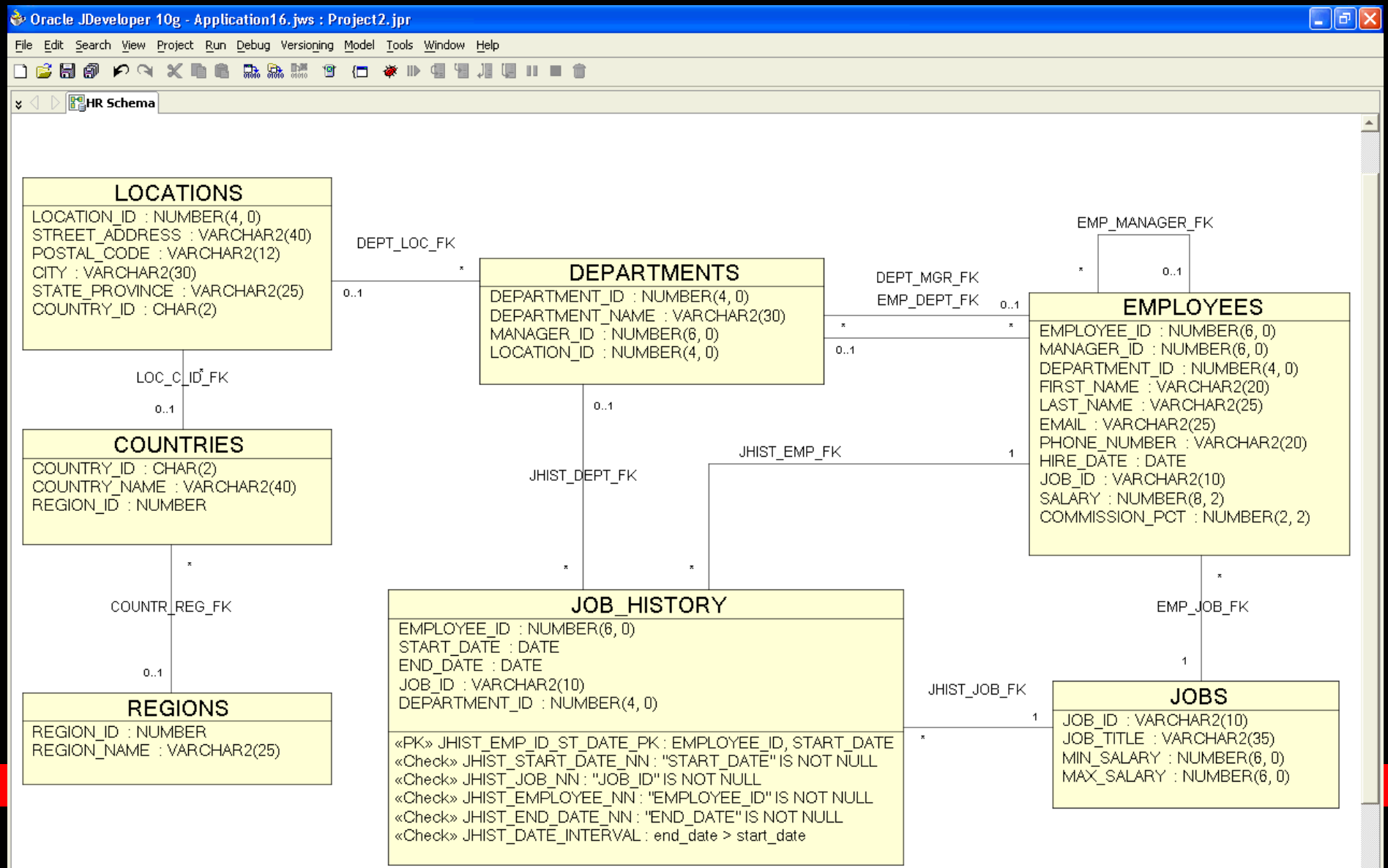
Running JSP on Embedded OC4J



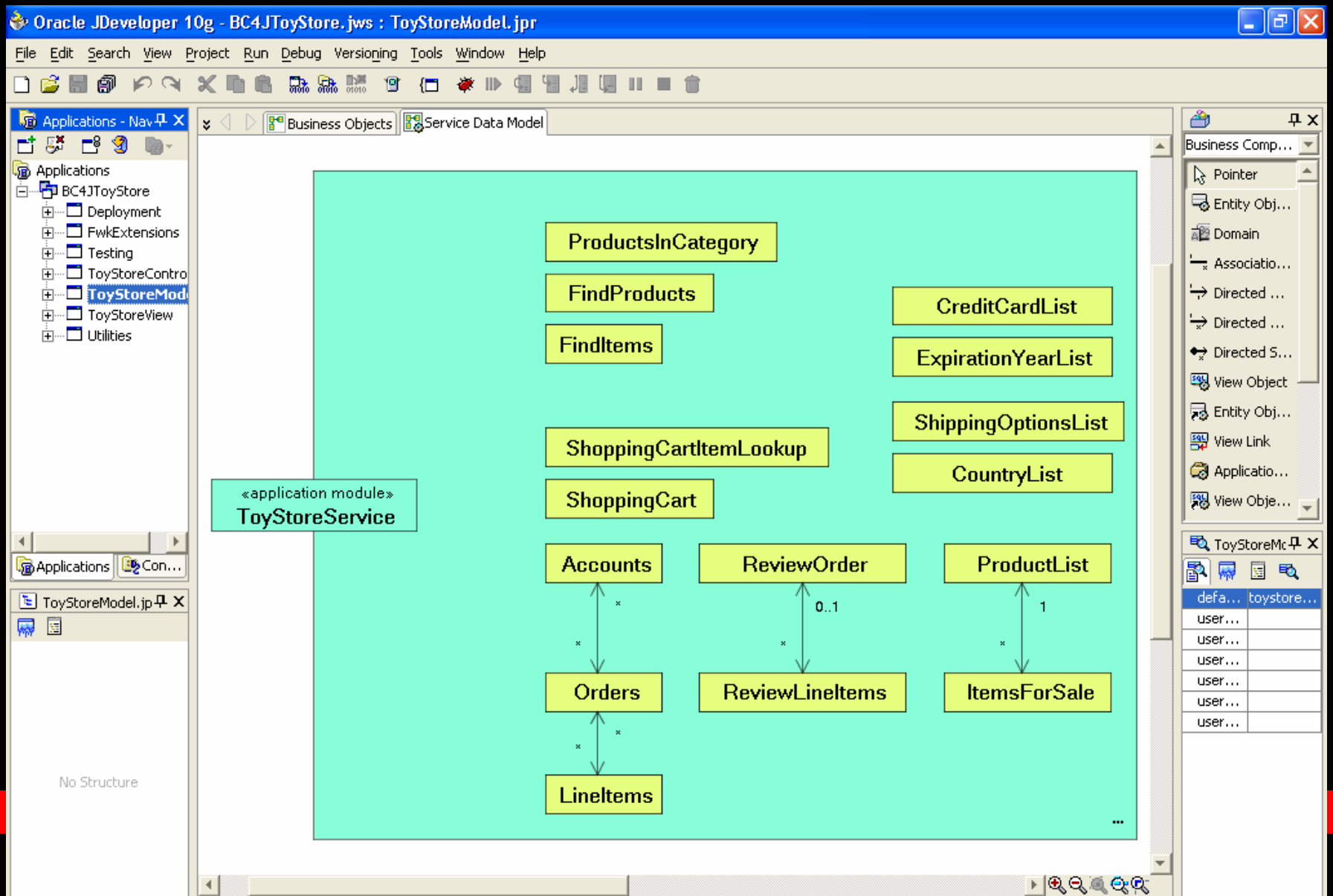
Visual Struts Page Flow Diagram



Database Modeling



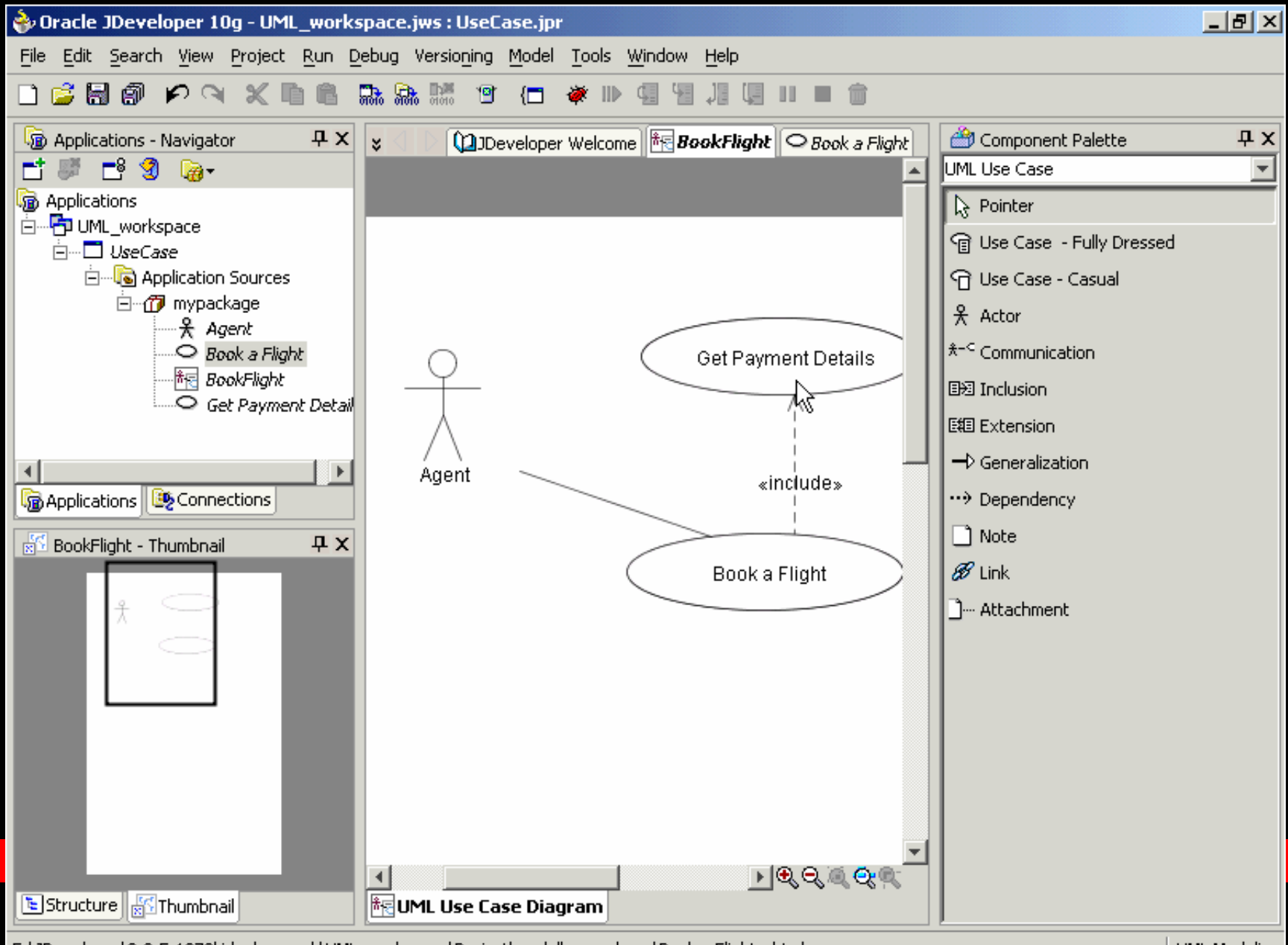
Improved UML Model for ADF Business Components



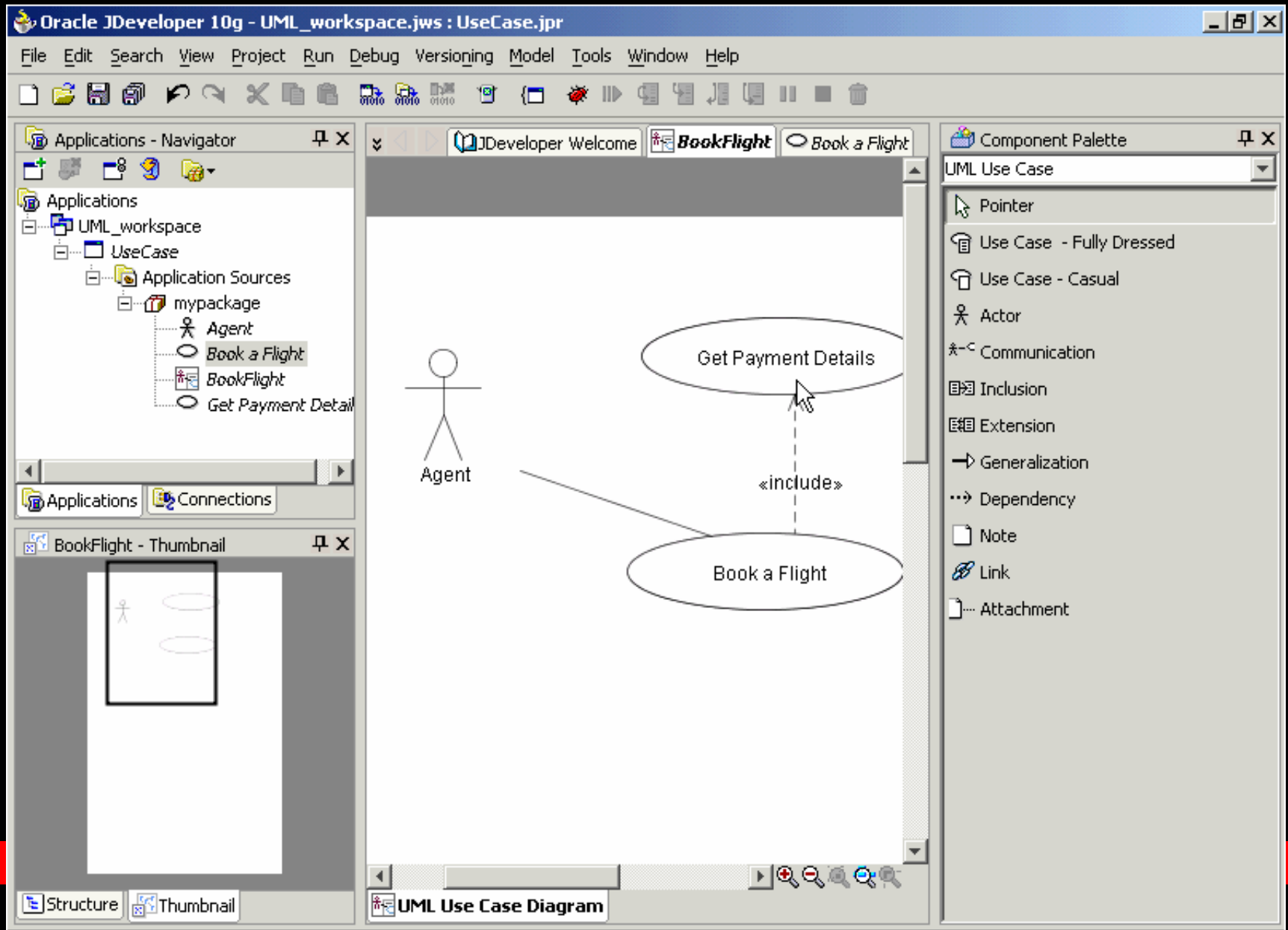
UML Diagrammer Enhancements

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

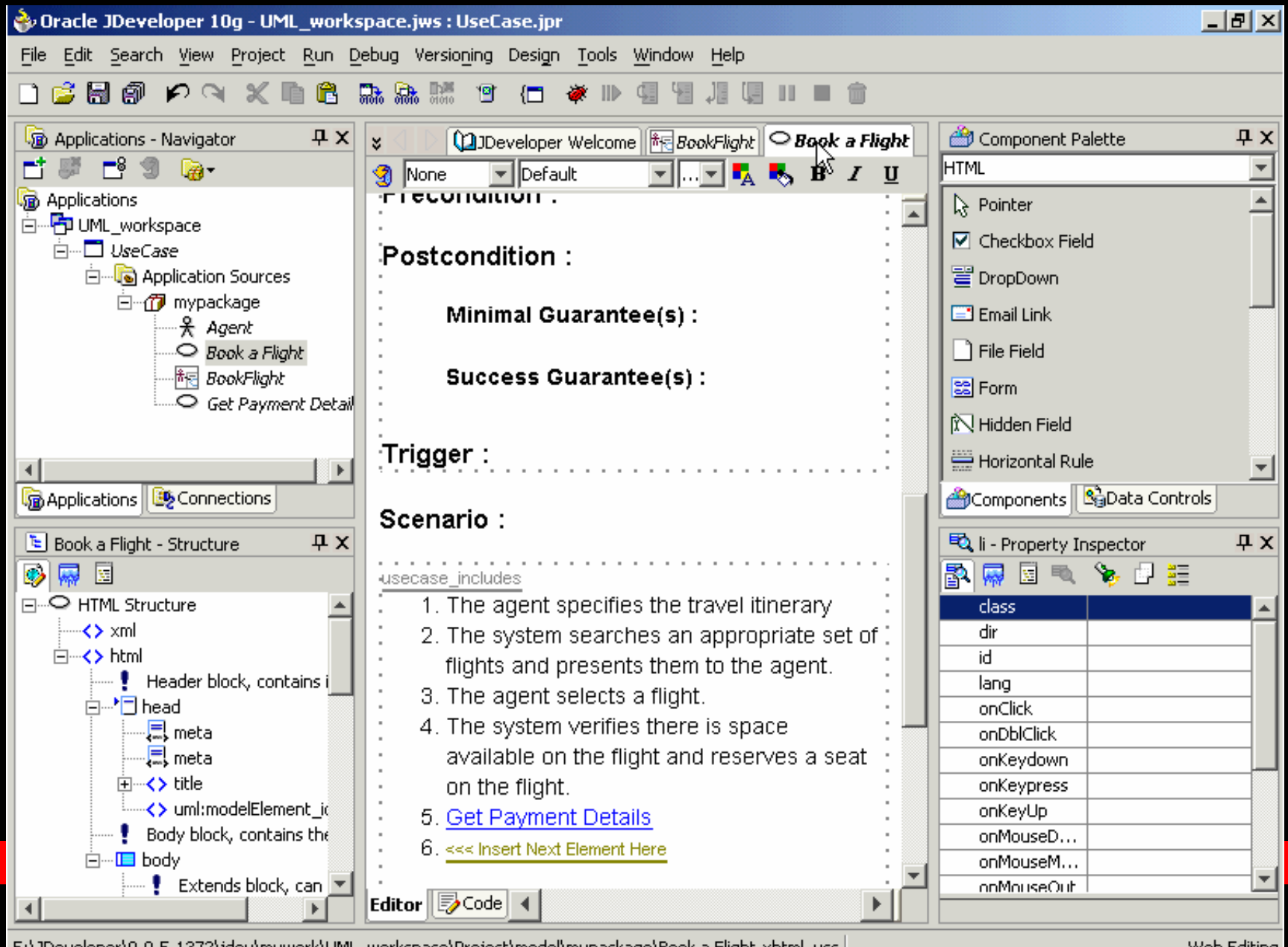
Use Case Diagram



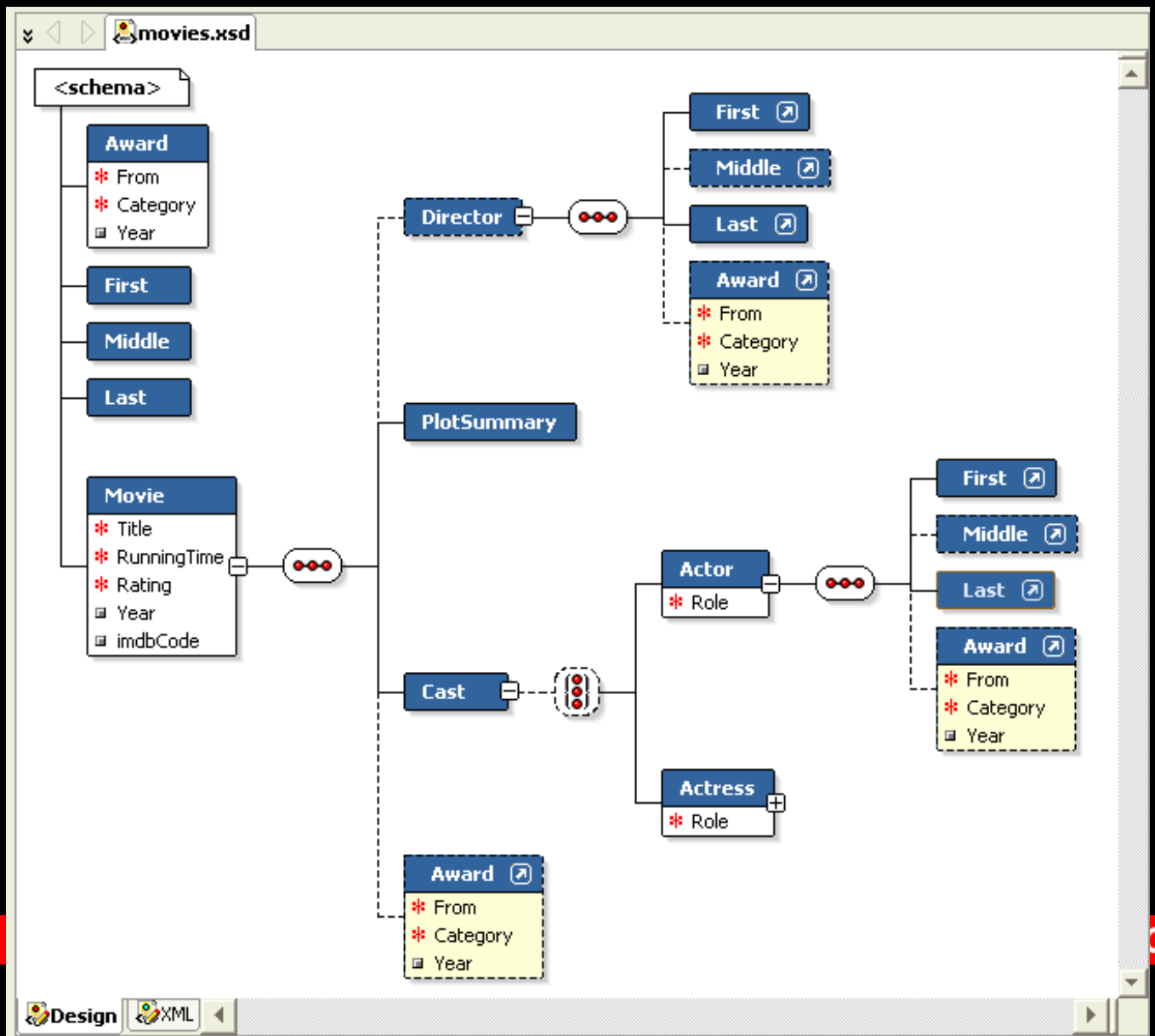
Use Case Diagram



Use Case Diagram

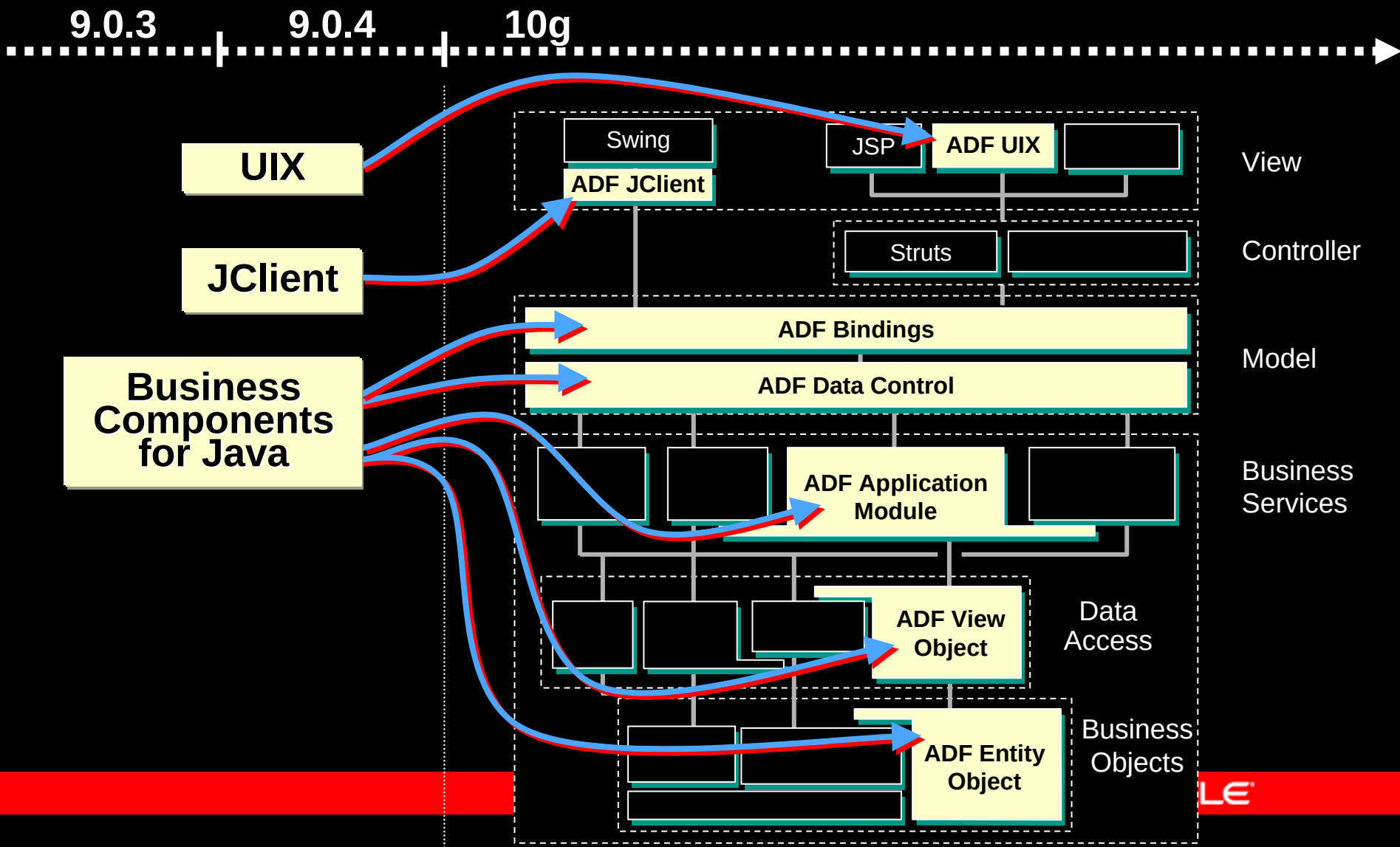


Visual XML Schema Editor



More Flexible Technology Choices and Architecture Than Ever

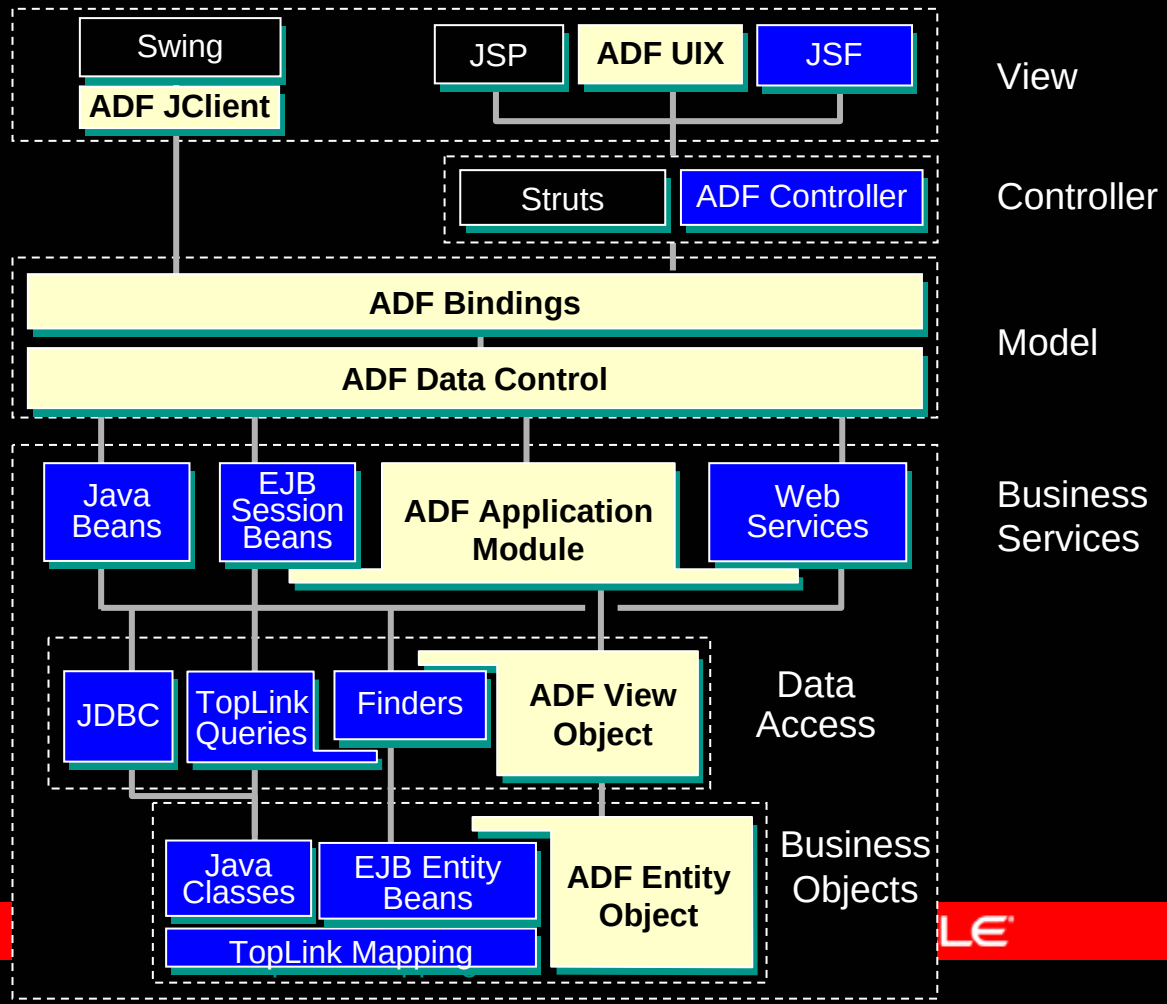
Existing Oracle Frameworks Consolidated into Enhanced Oracle ADF in Oracle 10*g*



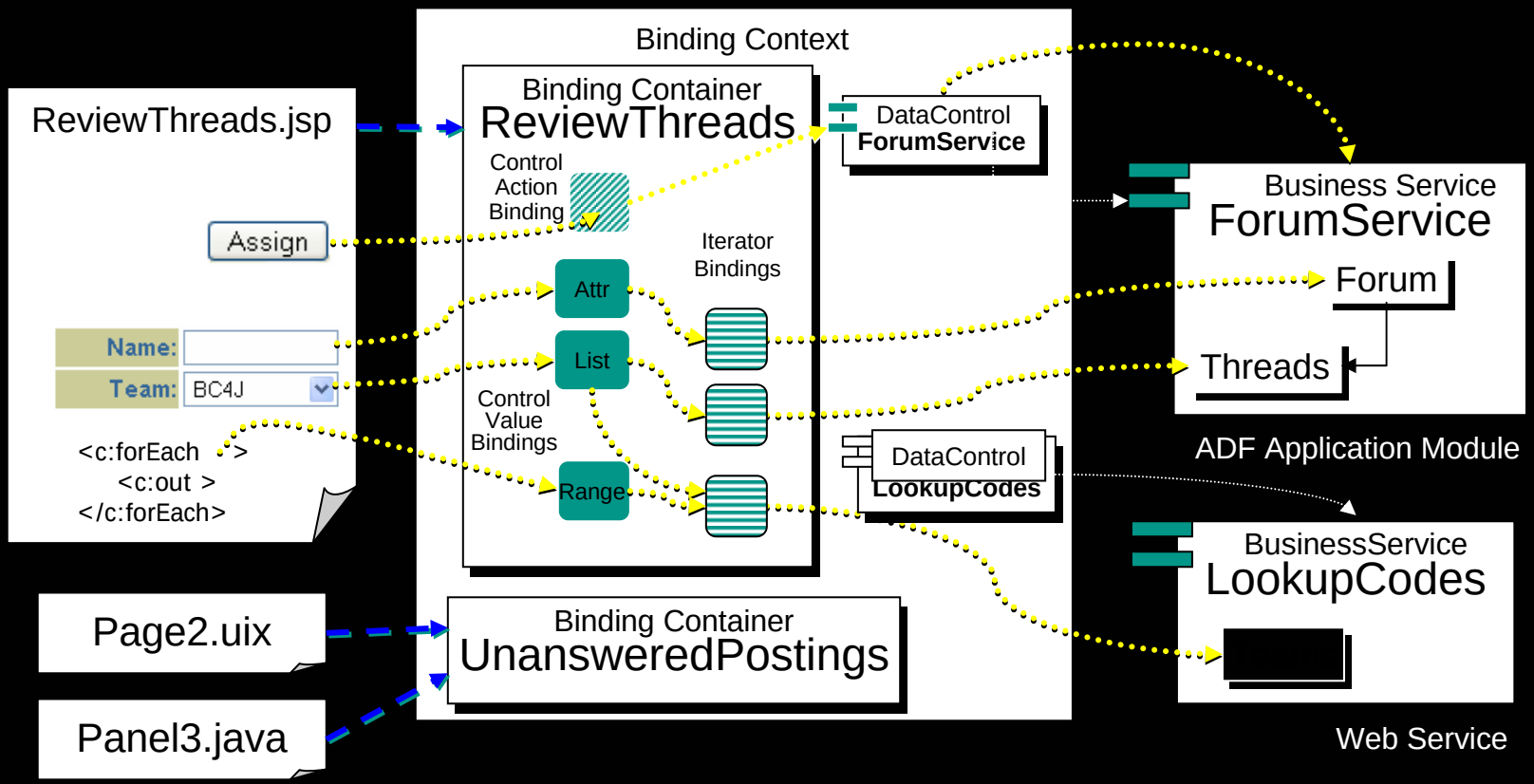
In JDev 10g, Oracle ADF Offers Single J2EE App Architecture with New, Flexible Choices

9.0.3 | 9.0.4 | 10g

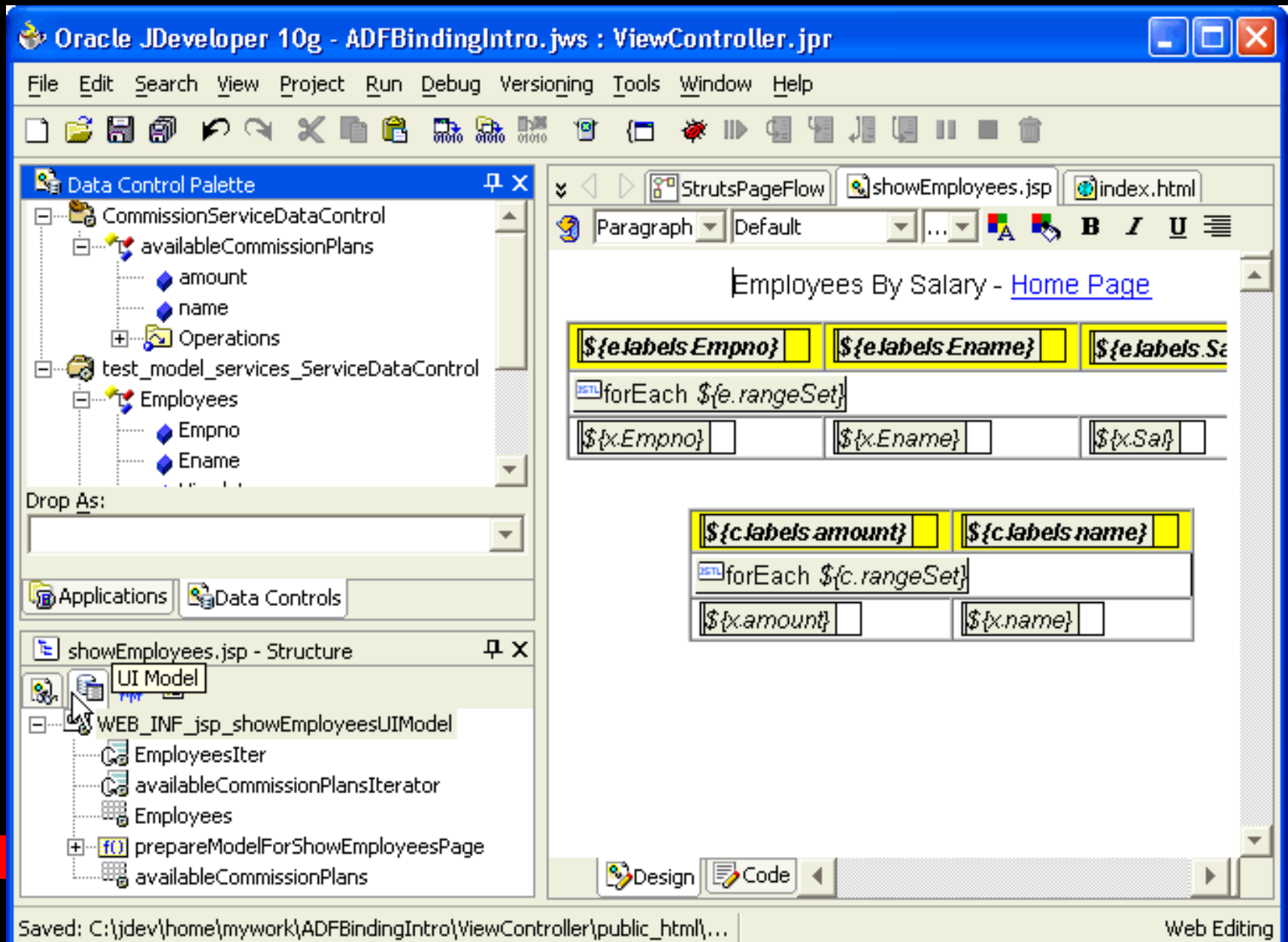
- JavaServer Faces
- Declarative ADF Controller
- Custom Beans
  - TopLink Mapping
  - Custom Mapping
- Enterprise Java Beans
- Web Services

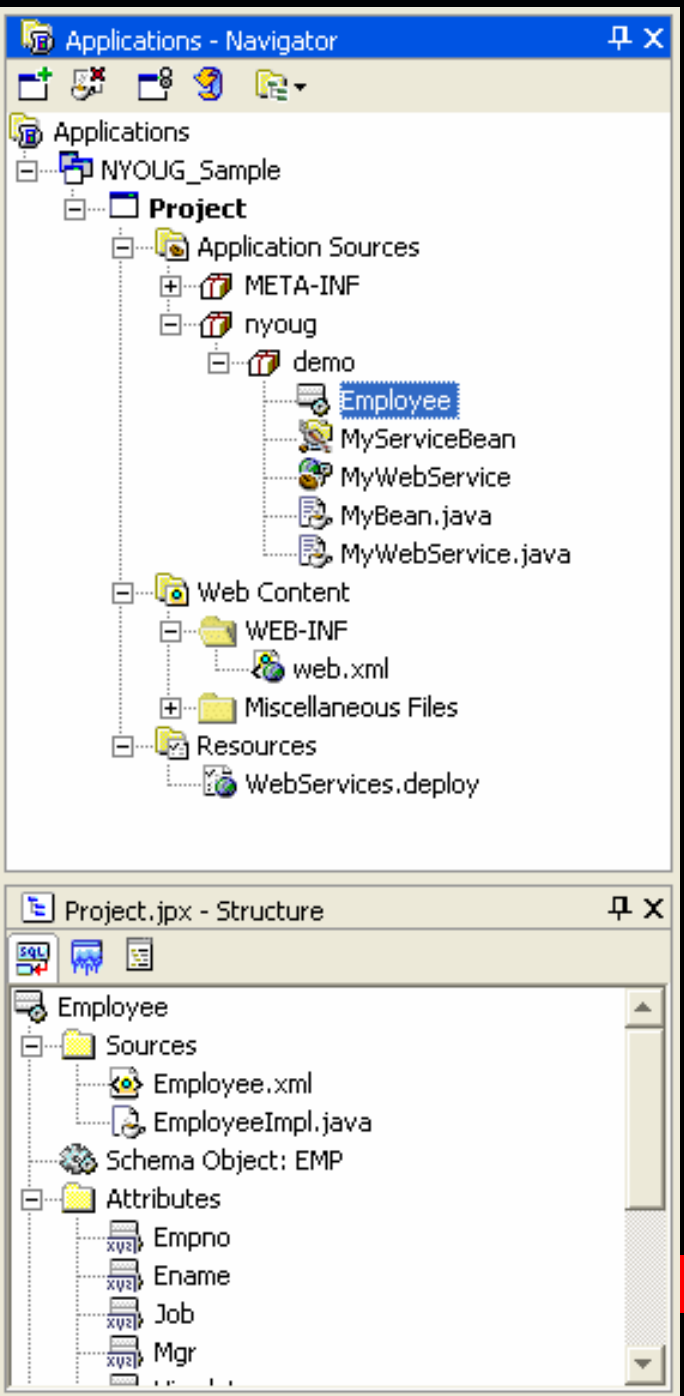


ADF Binding Concepts



Flexible Data Binding Architecture



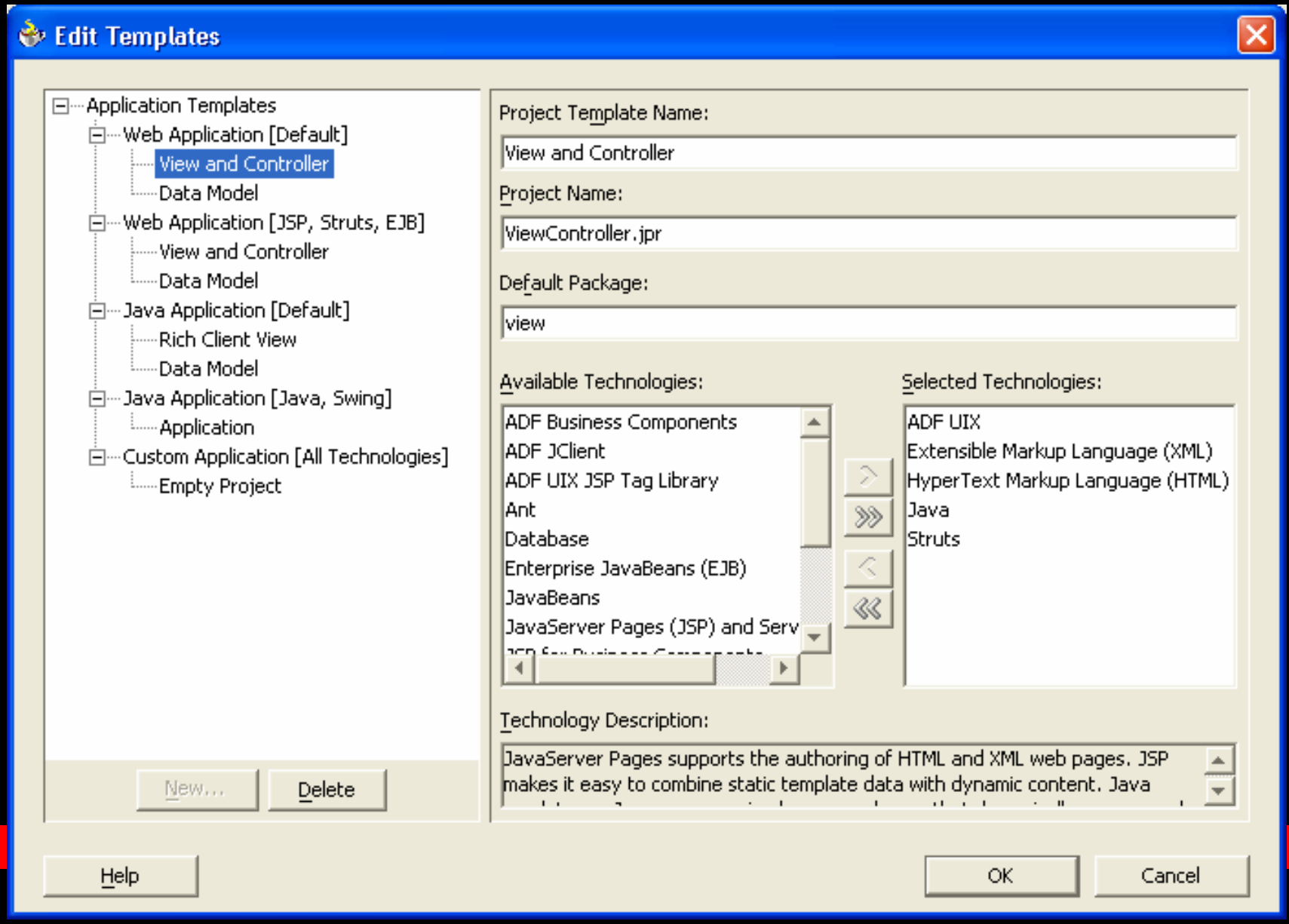


Unified Application Navigator

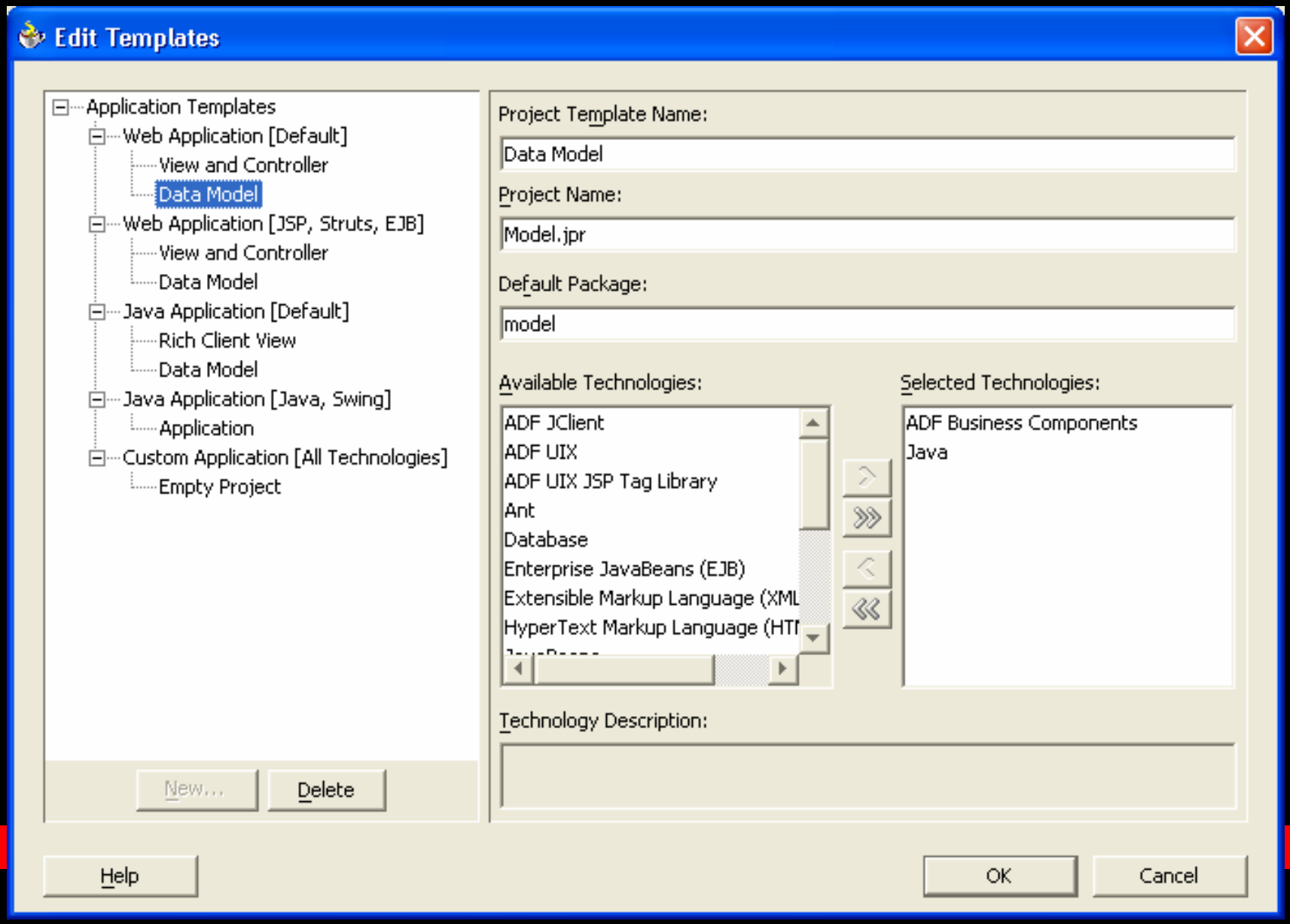
- Objects Organized By Package
- Regardless of Type
- Consistent Structure Pane Use

ORACLE

Application Templates



Application Templates



Technology Scope

- Simplifies the Gallery
- Simplifies Drag and Drop Choices
- Simplifies the Component Palettes

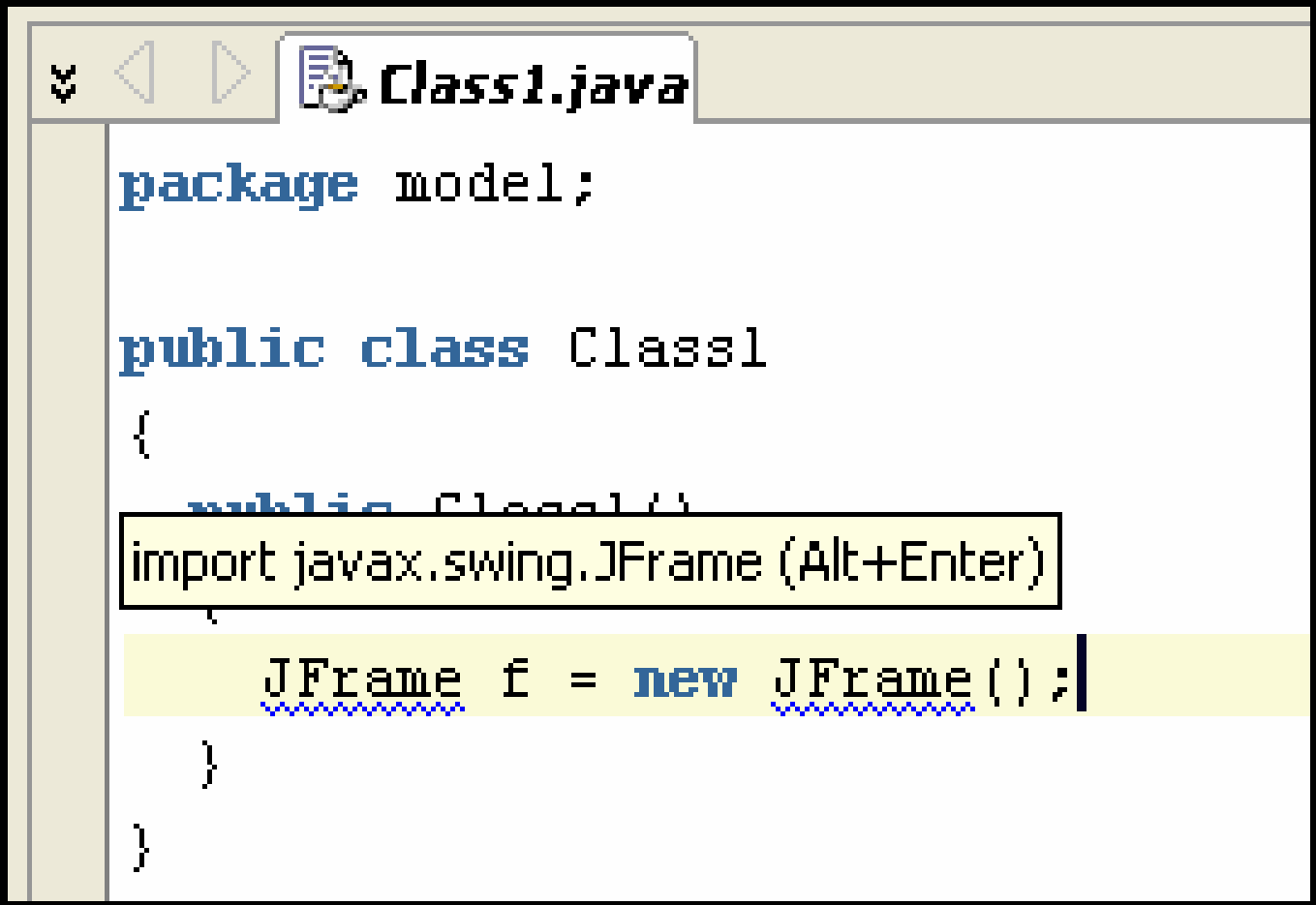
More Day to Day Productivity Than Ever

Semantic Error Highlighting

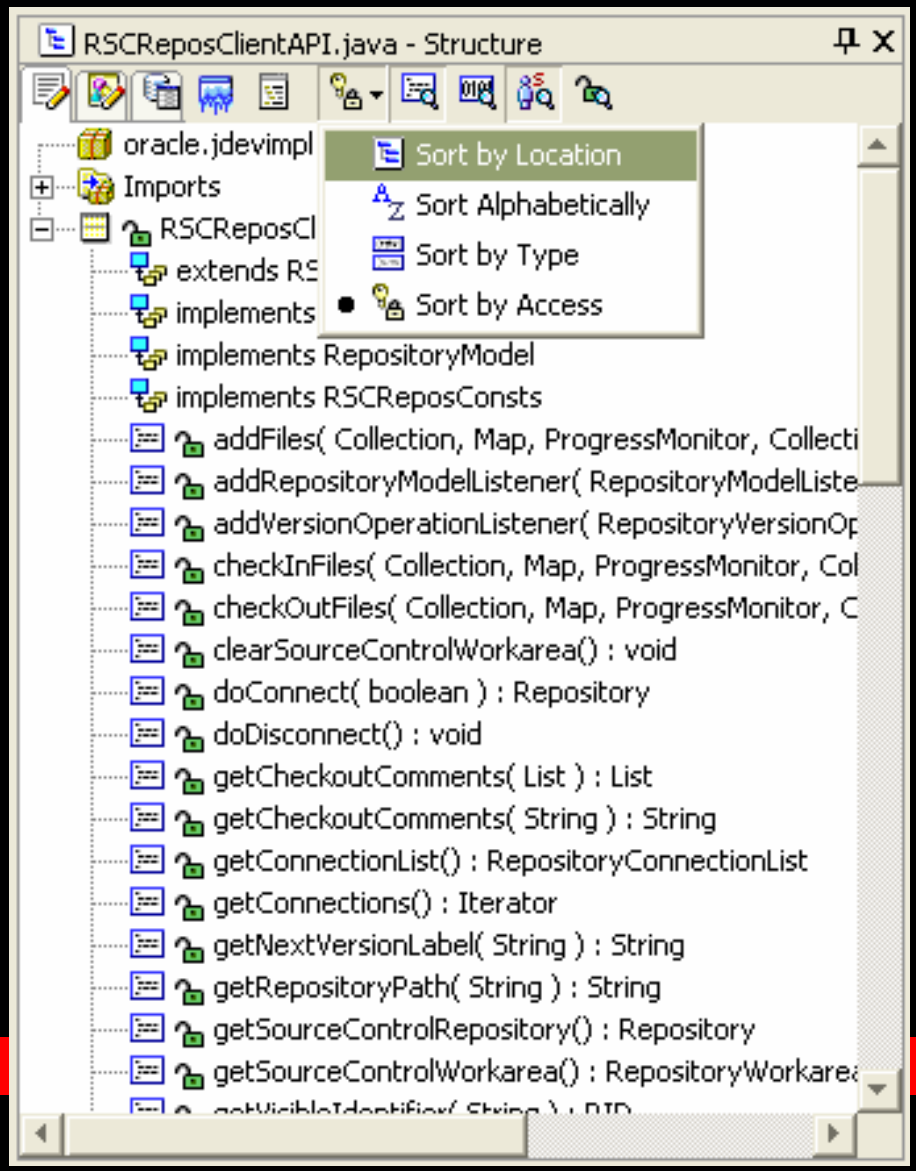
```
public class MyBean   {
  public MyBean(){
     URL u =   new URL("http://otn.oracle.com");
  }
}
```

Unreported exception: java.net.MalformedURLException

Automatic Import Assistance



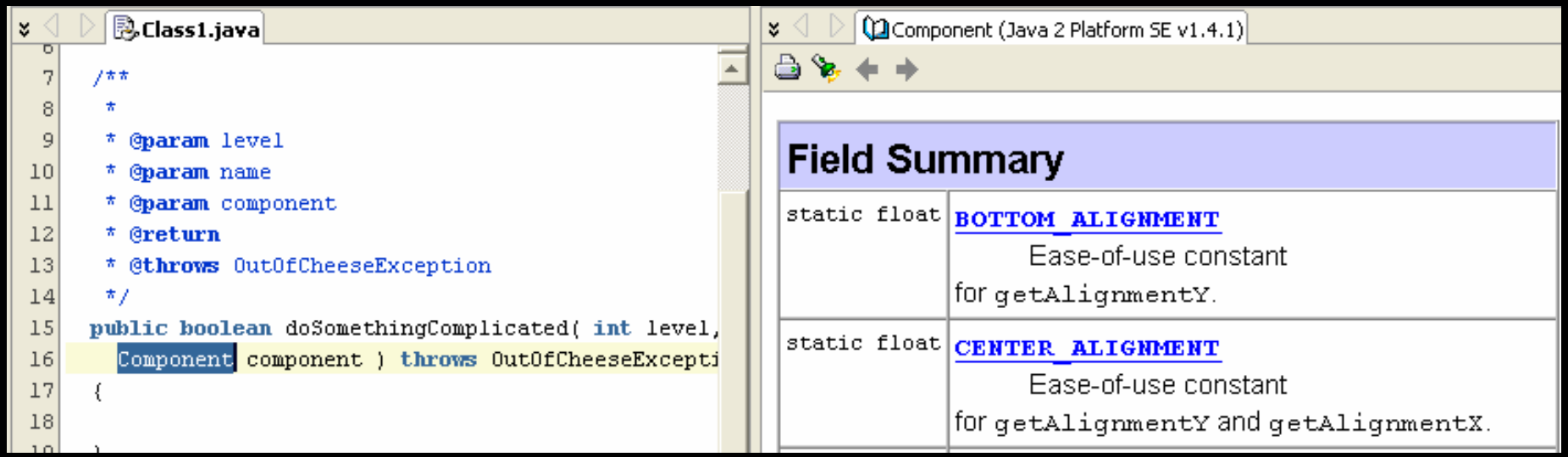
Improved Code Editor



Automatic JavaDoc Comments

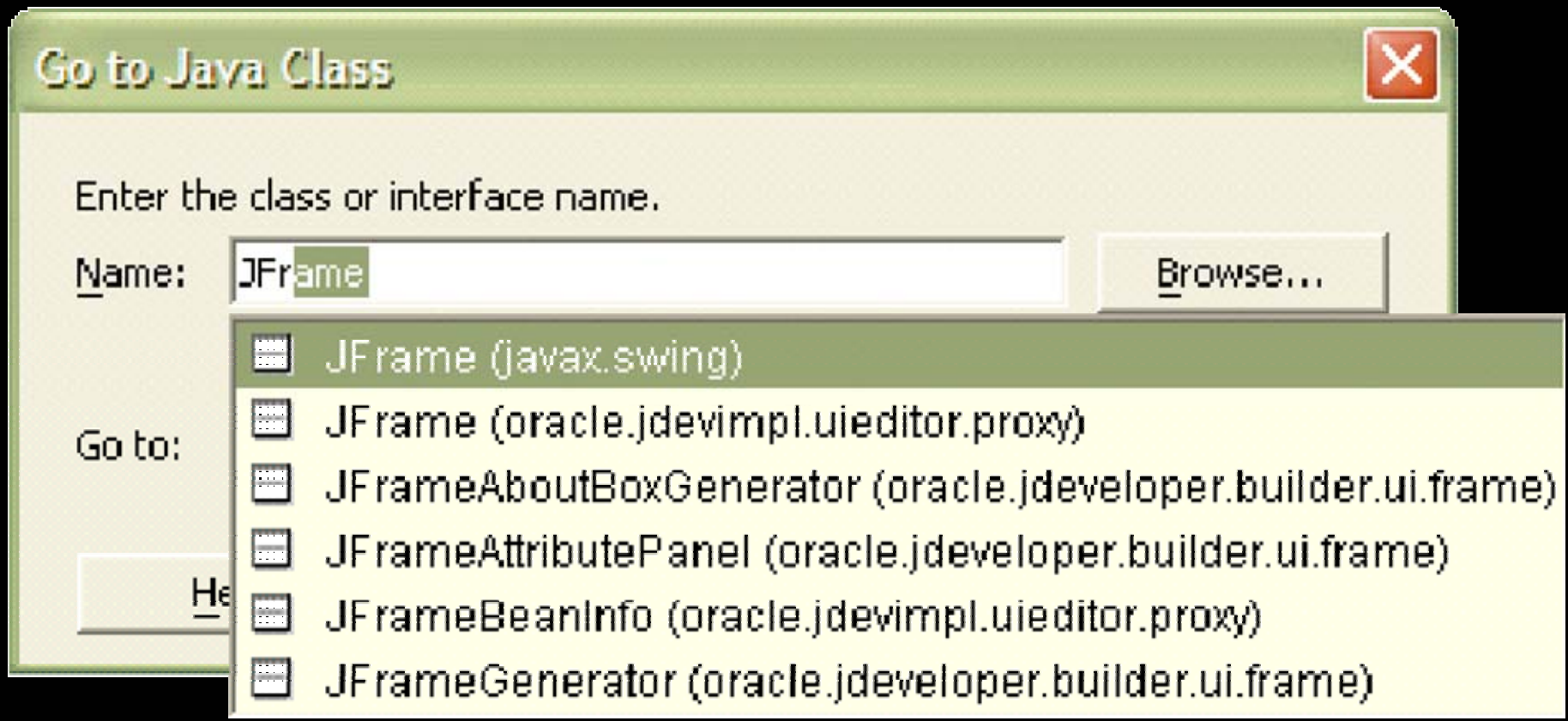
```
 7   /**
 8    *
 9    * @param level
10    * @param name
11    * @param component
12    * @return
13    * @throws OutOfCheeseException
14    */
15  public boolean doSomethingComplicated( int level, String name,
16      Component component ) throws OutOfCheeseException
17  {
```

Simplified Help System

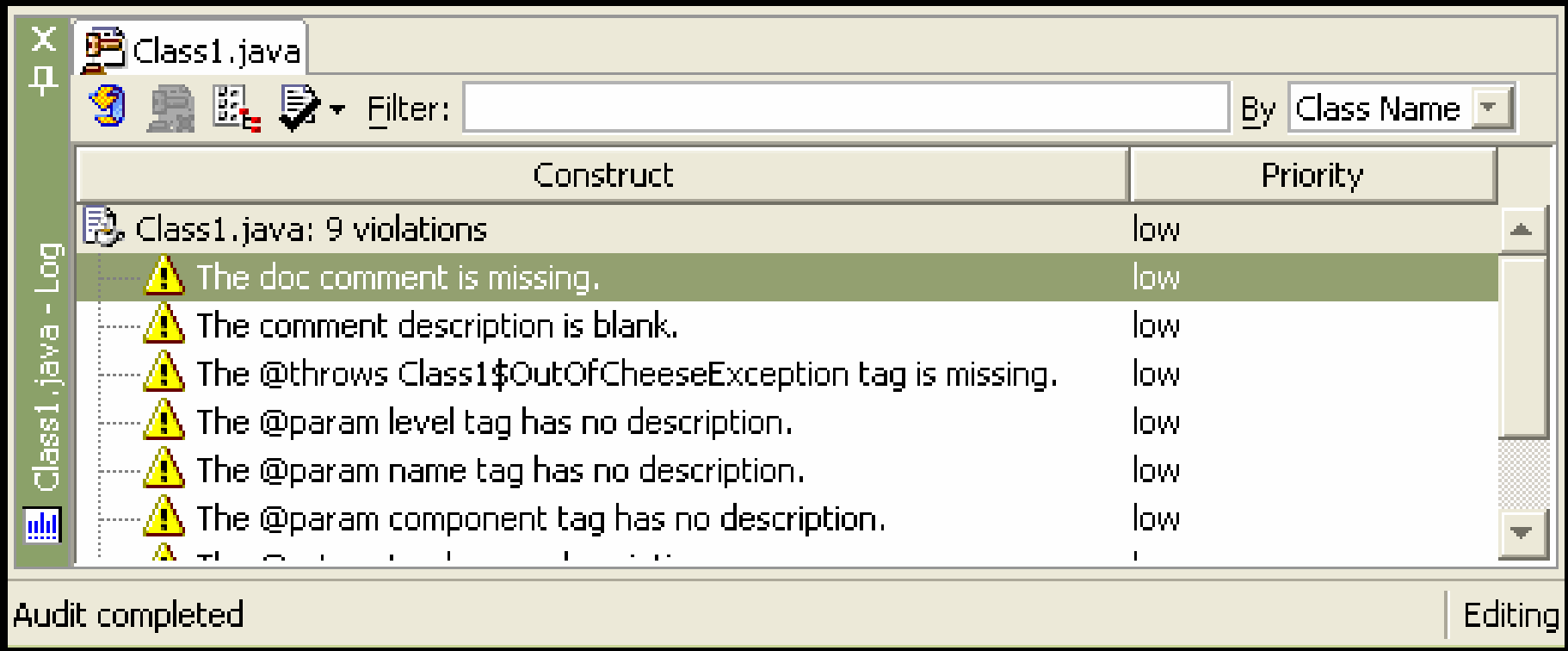


Quick JavaDoc

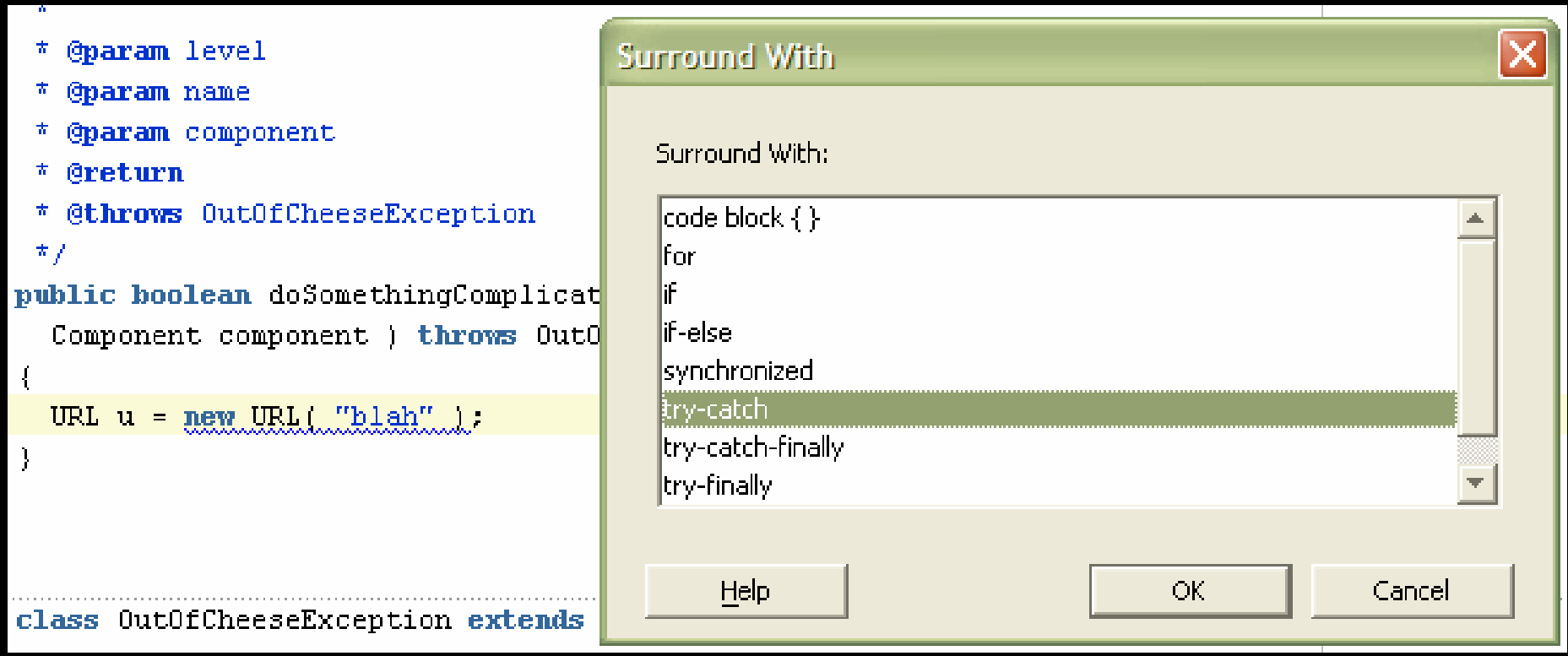
Quick Navigation to Files



Code Audit and Metrics



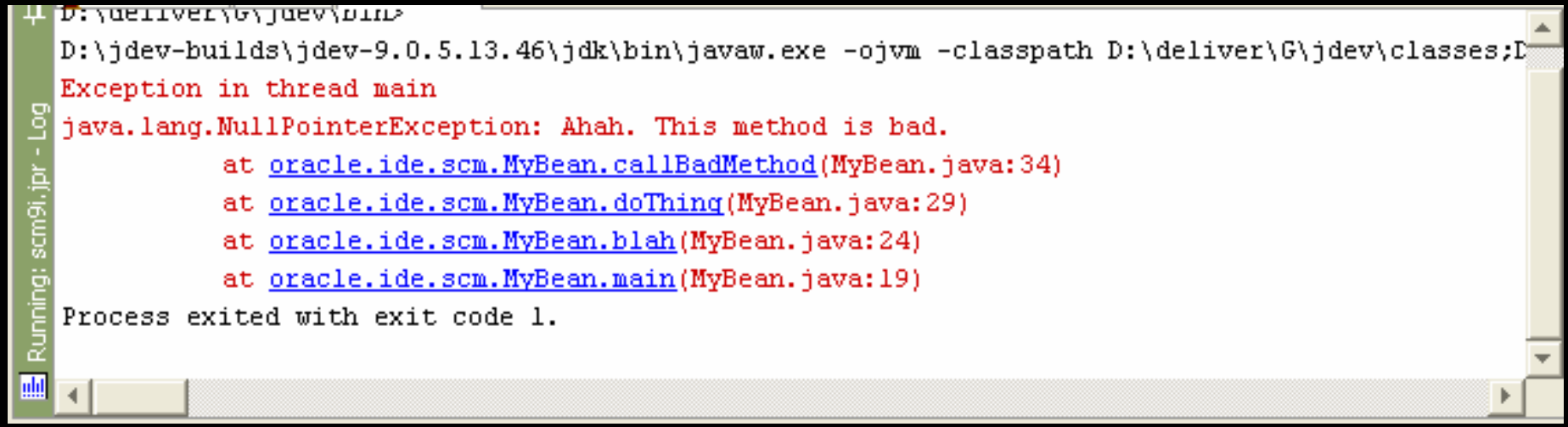
Surround With



Surround With

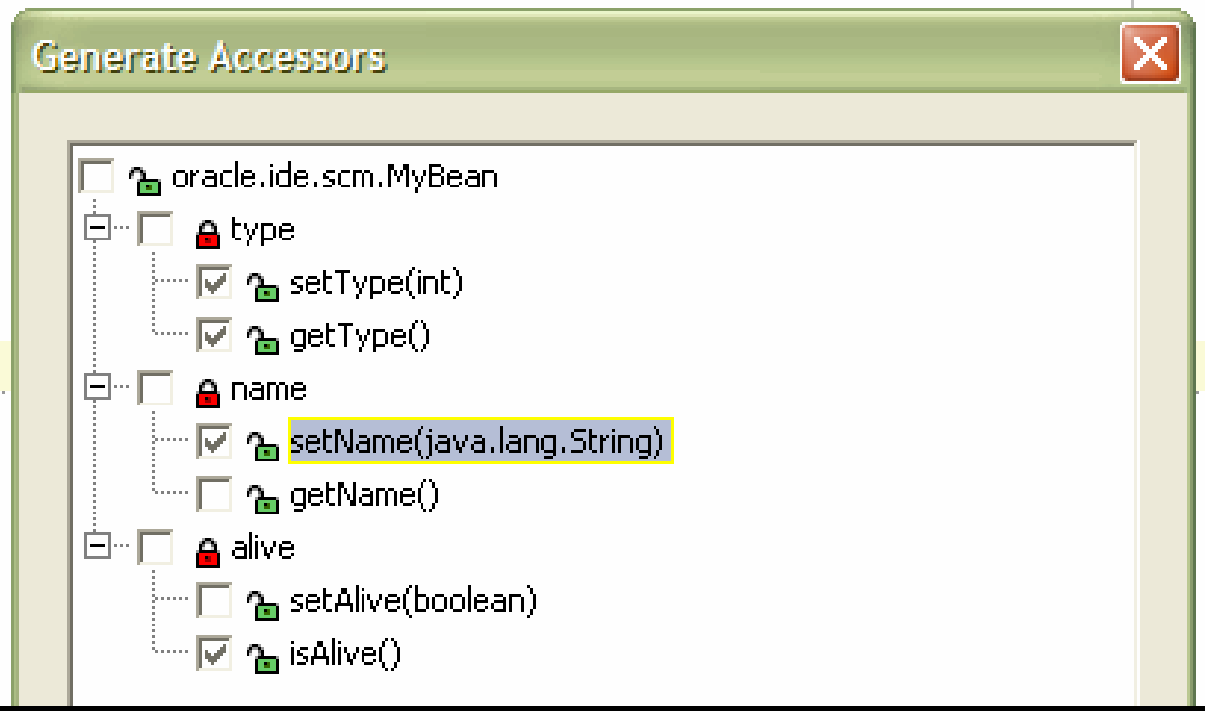
```
  *
  * @param level
  * @param name
  * @param component
  * @return
  * @throws OutOfCheeseException
  */
public boolean doSomethingComplicated( int level, String name,
    Component component ) throws OutOfCheeseException
{
    try
    {
        URL u = new URL( "blah" );
    }
    catch (MalformedURLException e)
    {

    }
}
```

Log Window

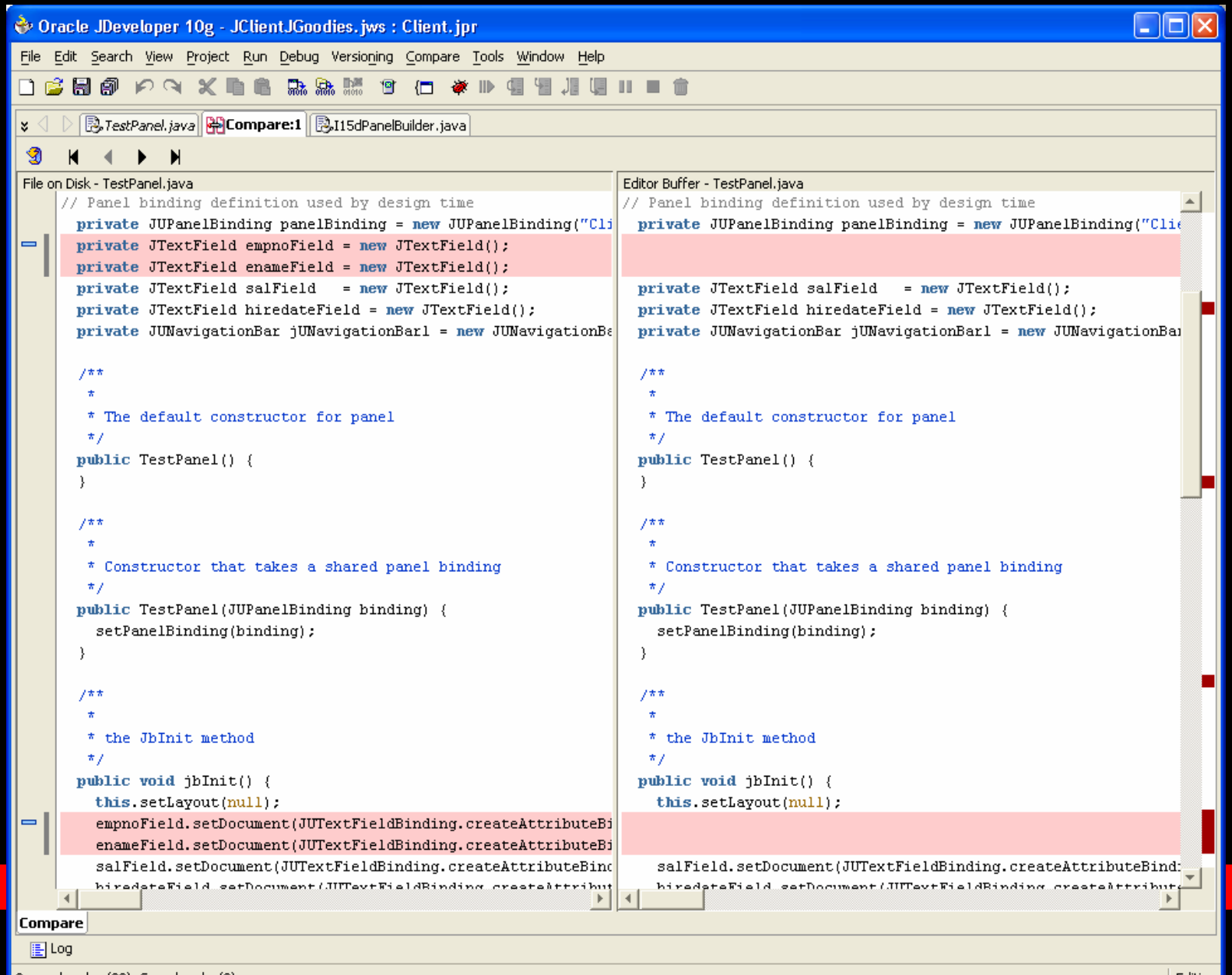

Running: scm9i.jpr - Log
D:\deliver\G\jdev\bin>
D:\jdev-builds\jdev-9.0.5.13.46\jdk\bin\javaw.exe -ojvm -classpath D:\deliver\G\jdev\classes;D
Exception in thread main
java.lang.NullPointerException: Ahah. This method is bad.
at oracle.ide.scm.MyBean.callBadMethod(MyBean.java:34)
at oracle.ide.scm.MyBean.doThing(MyBean.java:29)
at oracle.ide.scm.MyBean.blah(MyBean.java:24)
at oracle.ide.scm.MyBean.main(MyBean.java:19)
Process exited with exit code 1.

Generate Accessors

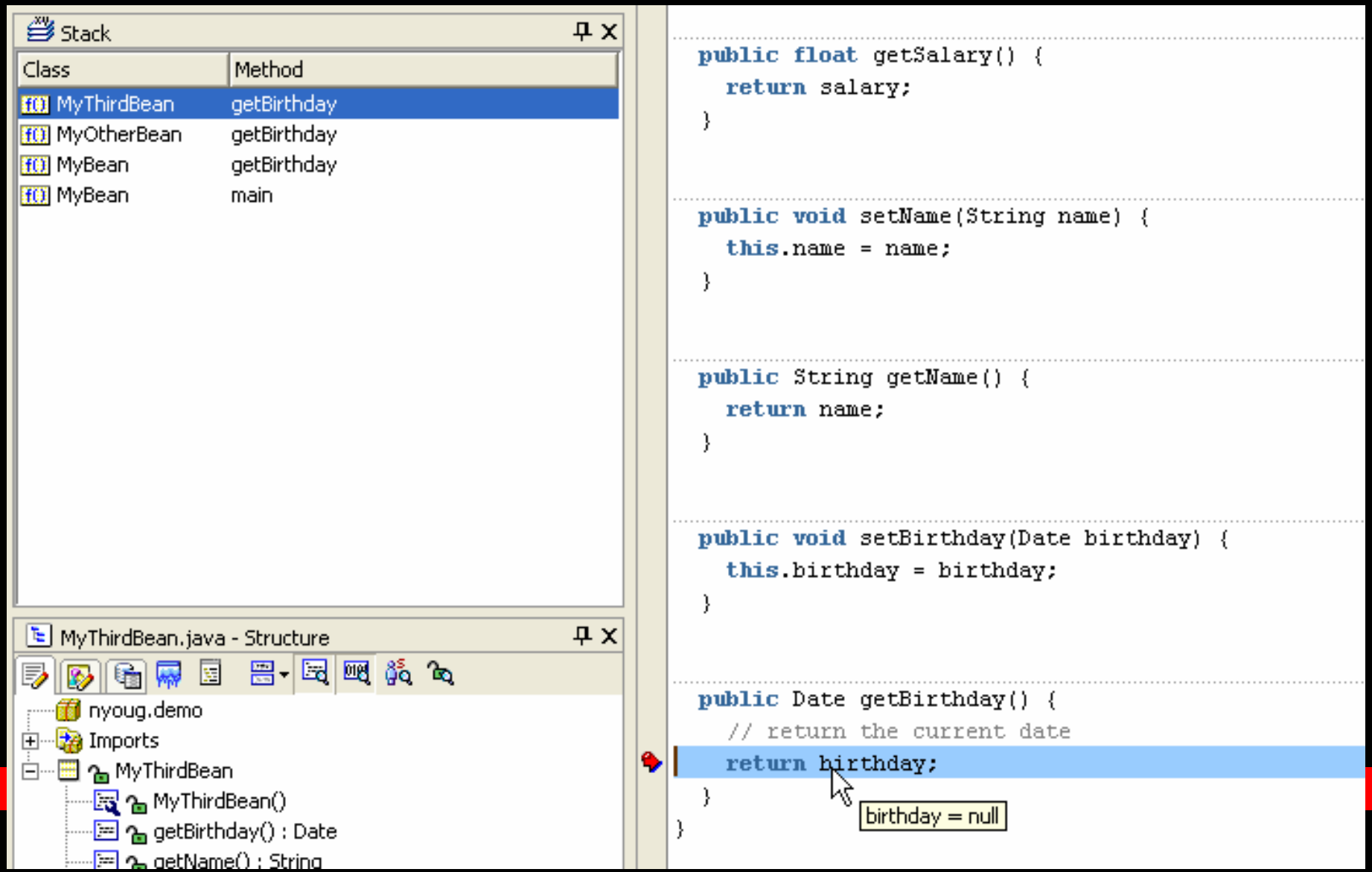
```
package oracle.ide.scm;

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

  public MyBean()
  {
  }
}
```



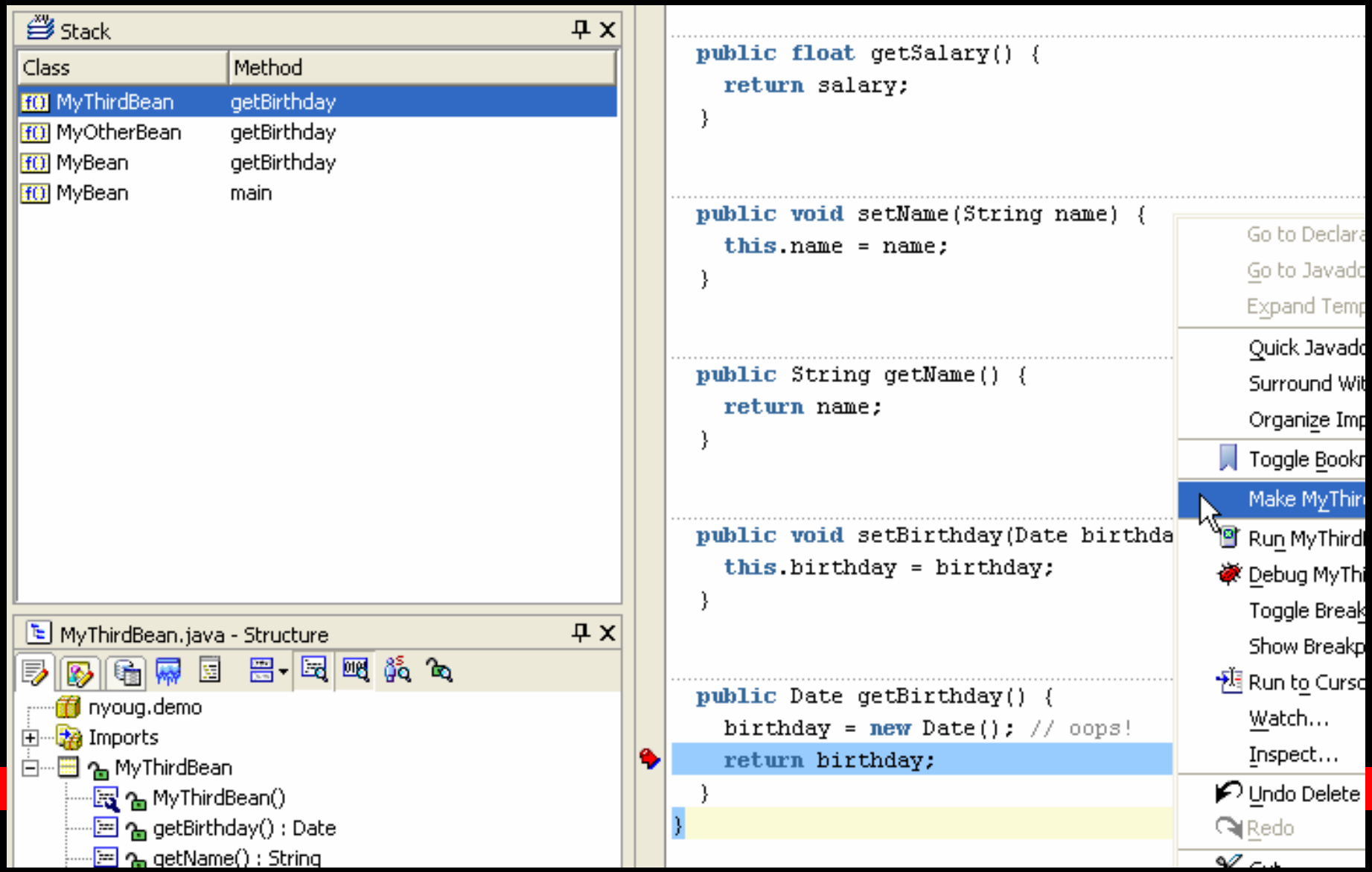
Visual Differencing



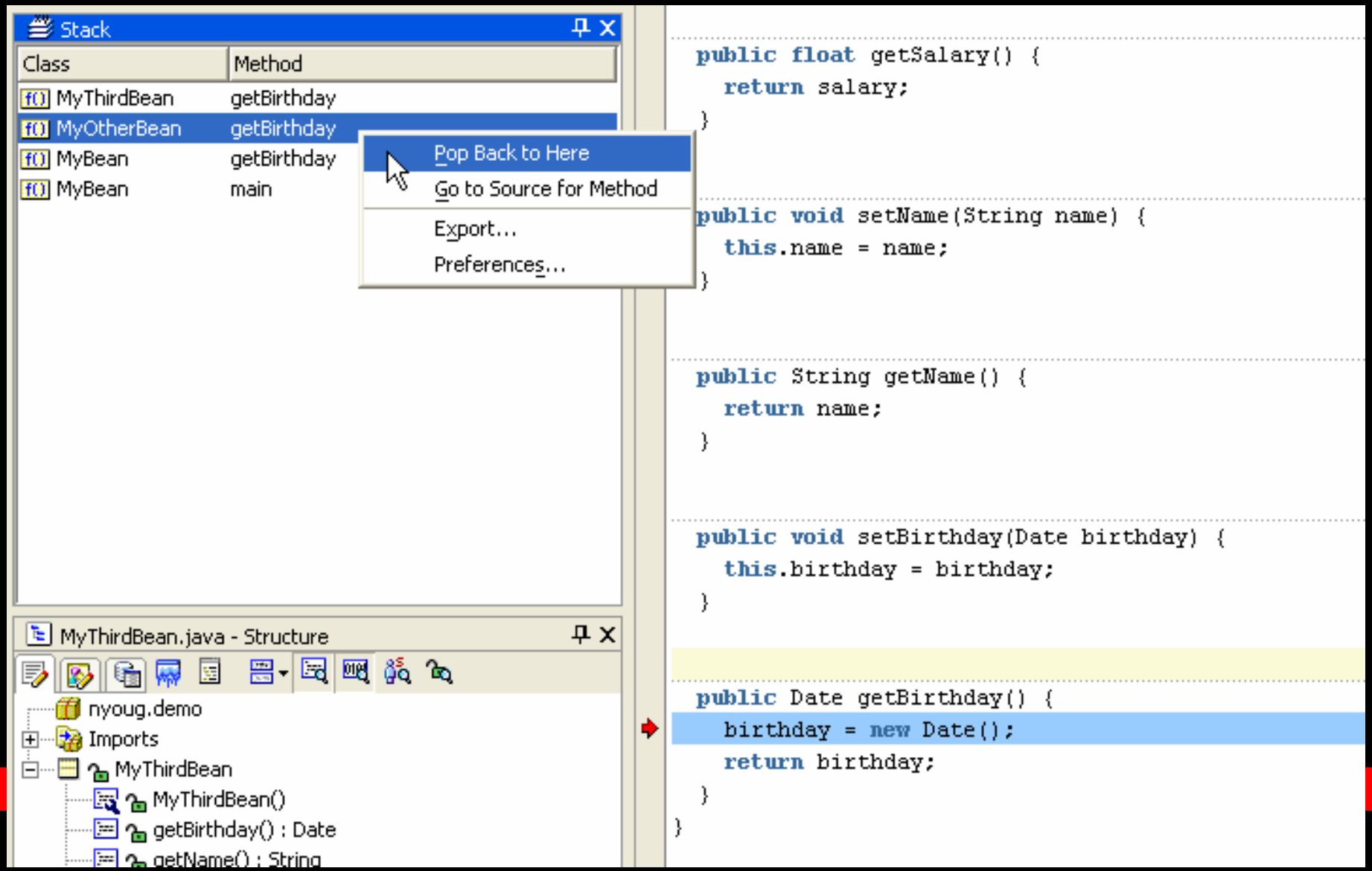
Hot Swap Debugging



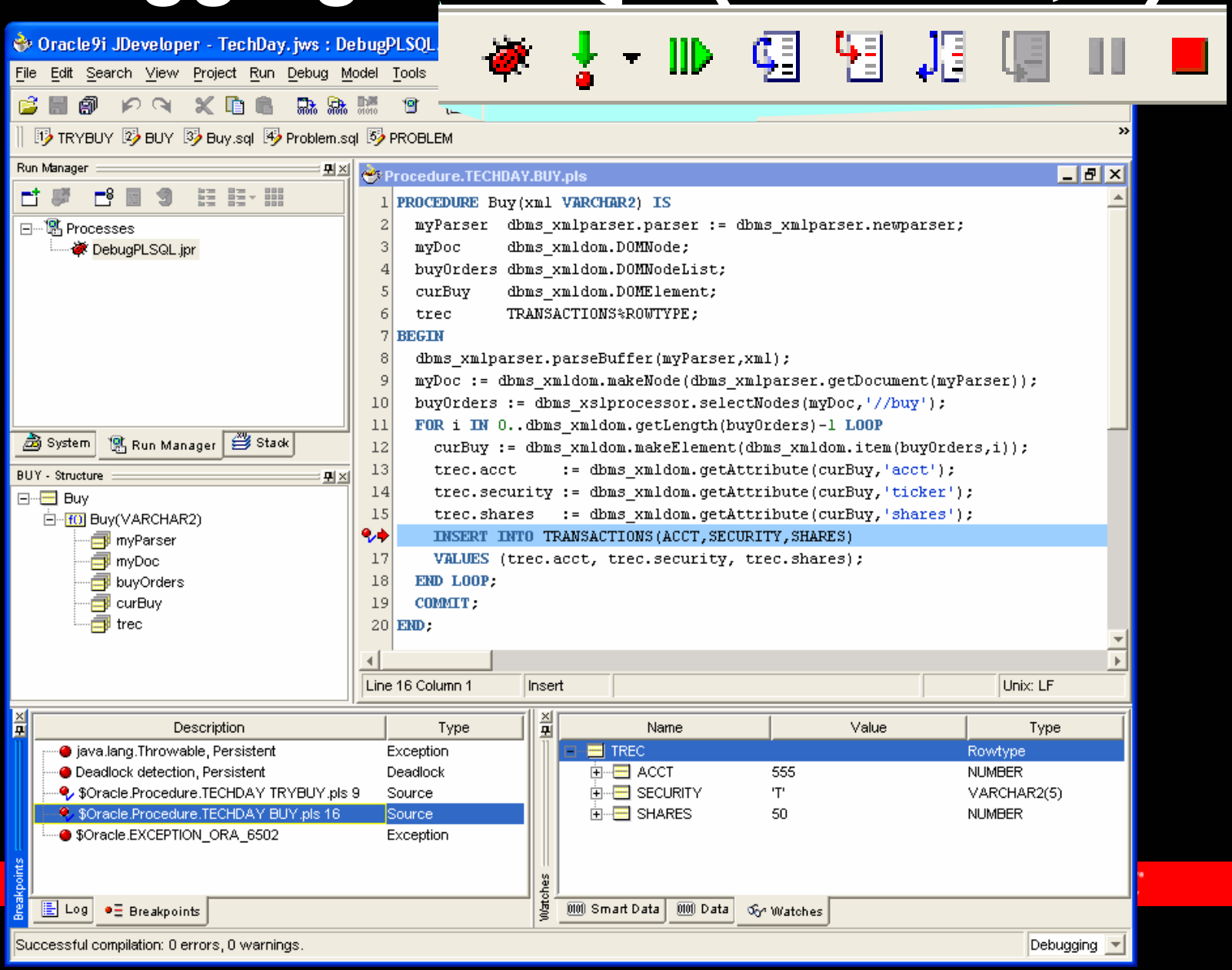
Hot Swap Debugging



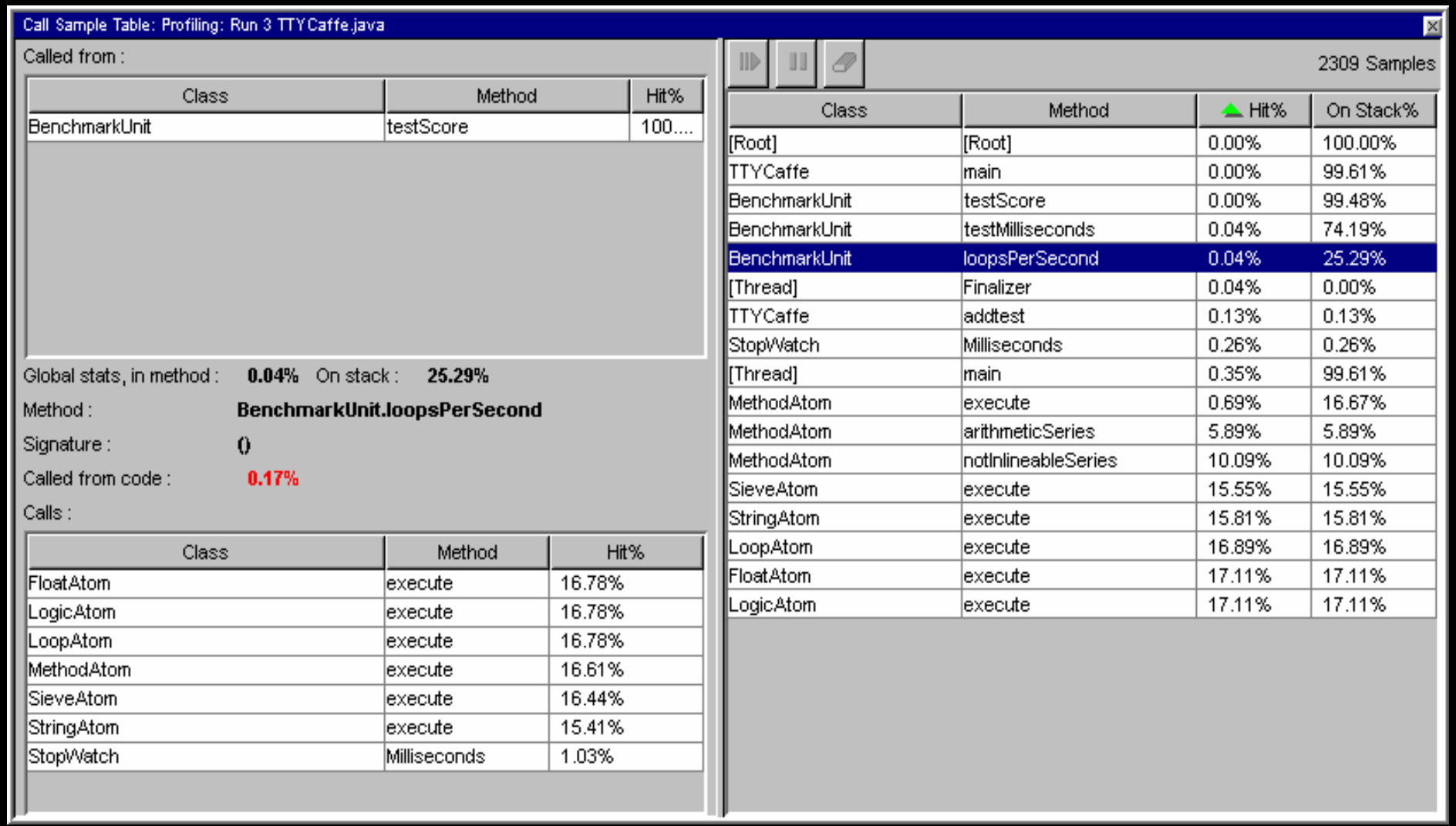
Hot Swap Debugging



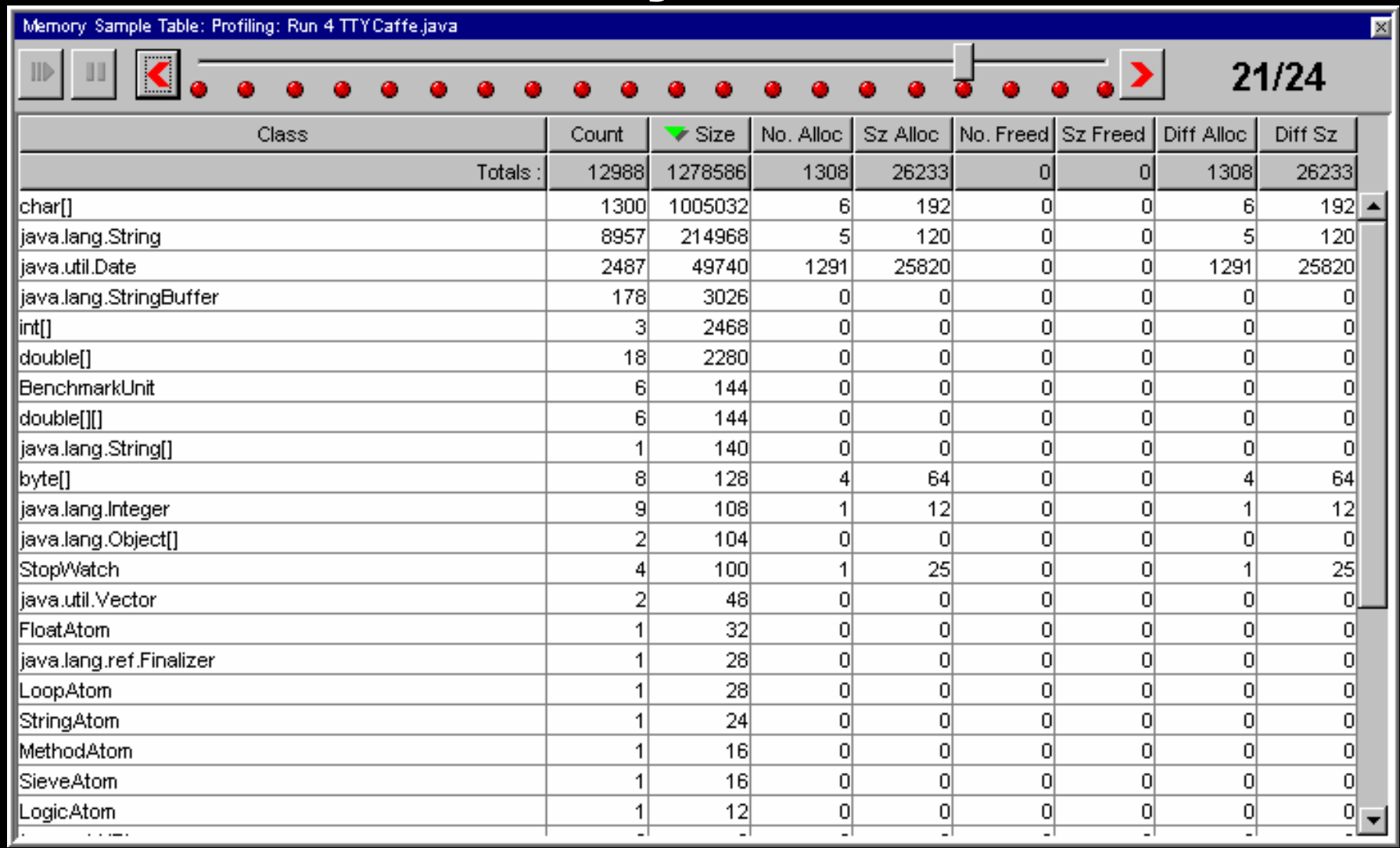
Debugging PL/SQL (Oracle8*i*,9*i*)



Execution Profiler



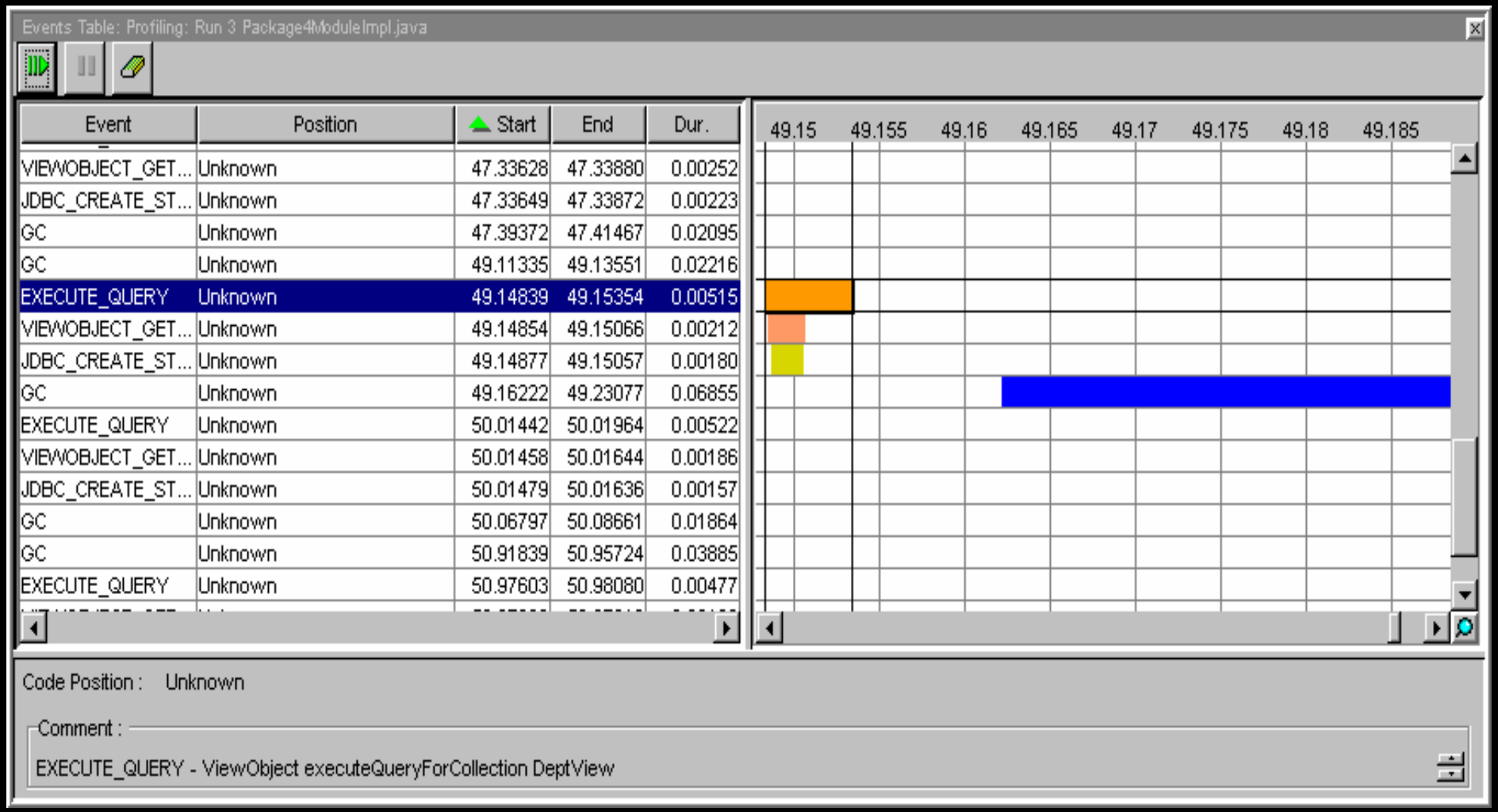
Memory Profiler

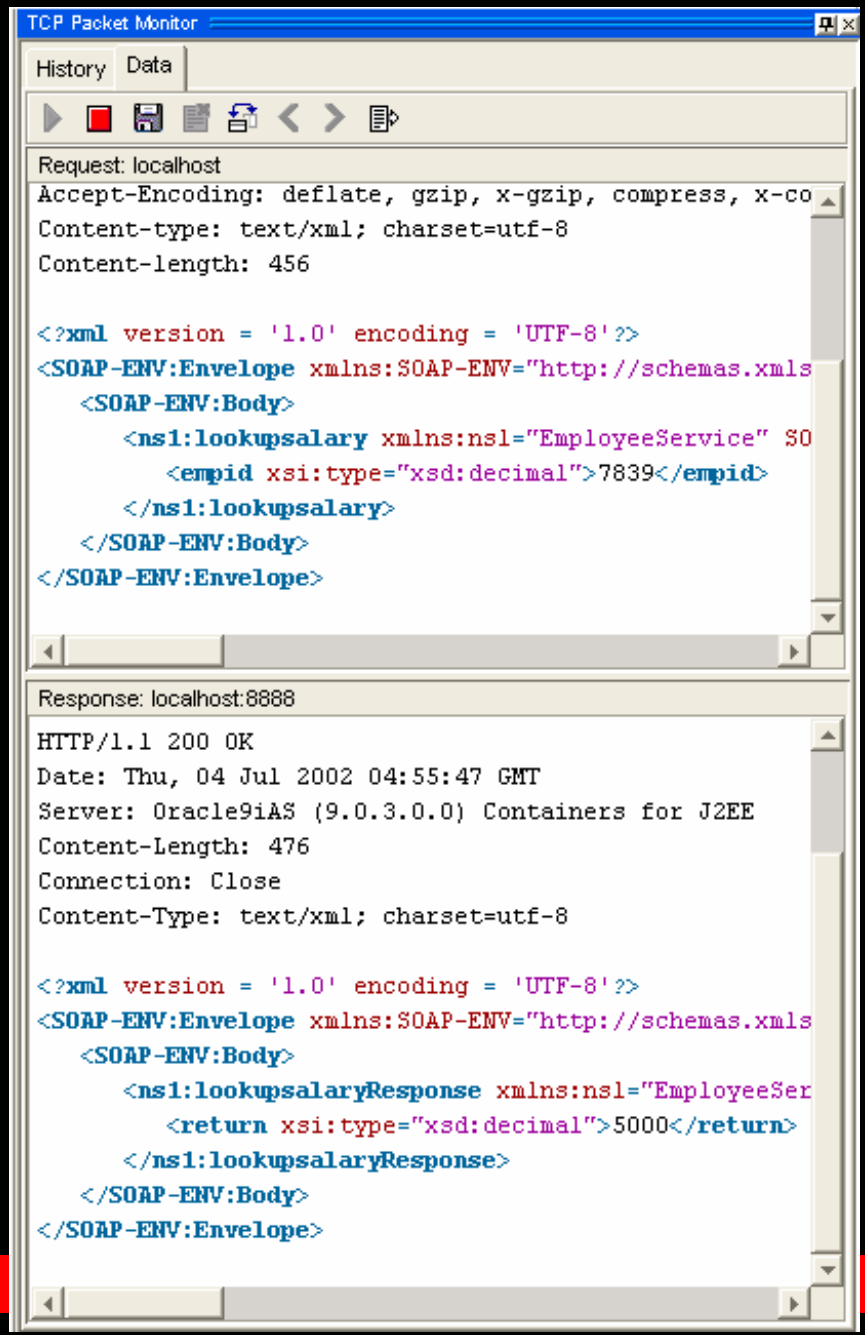


Class	Count	Size	No. Alloc	Sz Alloc	No. Freed	Sz Freed	Diff Alloc	Diff Sz
Totals :	12988	1278586	1308	26233	0	0	1308	26233
char[]	1300	1005032	6	192	0	0	6	192
java.lang.String	8957	214968	5	120	0	0	5	120
java.util.Date	2487	49740	1291	25820	0	0	1291	25820
java.lang.StringBuffer	178	3026	0	0	0	0	0	0
int[]	3	2468	0	0	0	0	0	0
double[]	18	2280	0	0	0	0	0	0
BenchmarkUnit	6	144	0	0	0	0	0	0
double[][]	6	144	0	0	0	0	0	0
java.lang.String[]	1	140	0	0	0	0	0	0
byte[]	8	128	4	64	0	0	4	64
java.lang.Integer	9	108	1	12	0	0	1	12
java.lang.Object[]	2	104	0	0	0	0	0	0
StopWatch	4	100	1	25	0	0	1	25
java.util.Vector	2	48	0	0	0	0	0	0
FloatAtom	1	32	0	0	0	0	0	0
java.lang.ref.Finalizer	1	28	0	0	0	0	0	0
LoopAtom	1	28	0	0	0	0	0	0
StringAtom	1	24	0	0	0	0	0	0
MethodAtom	1	16	0	0	0	0	0	0
SieveAtom	1	16	0	0	0	0	0	0
LogicAtom	1	12	0	0	0	0	0	0

ORACLE

Event Profiler

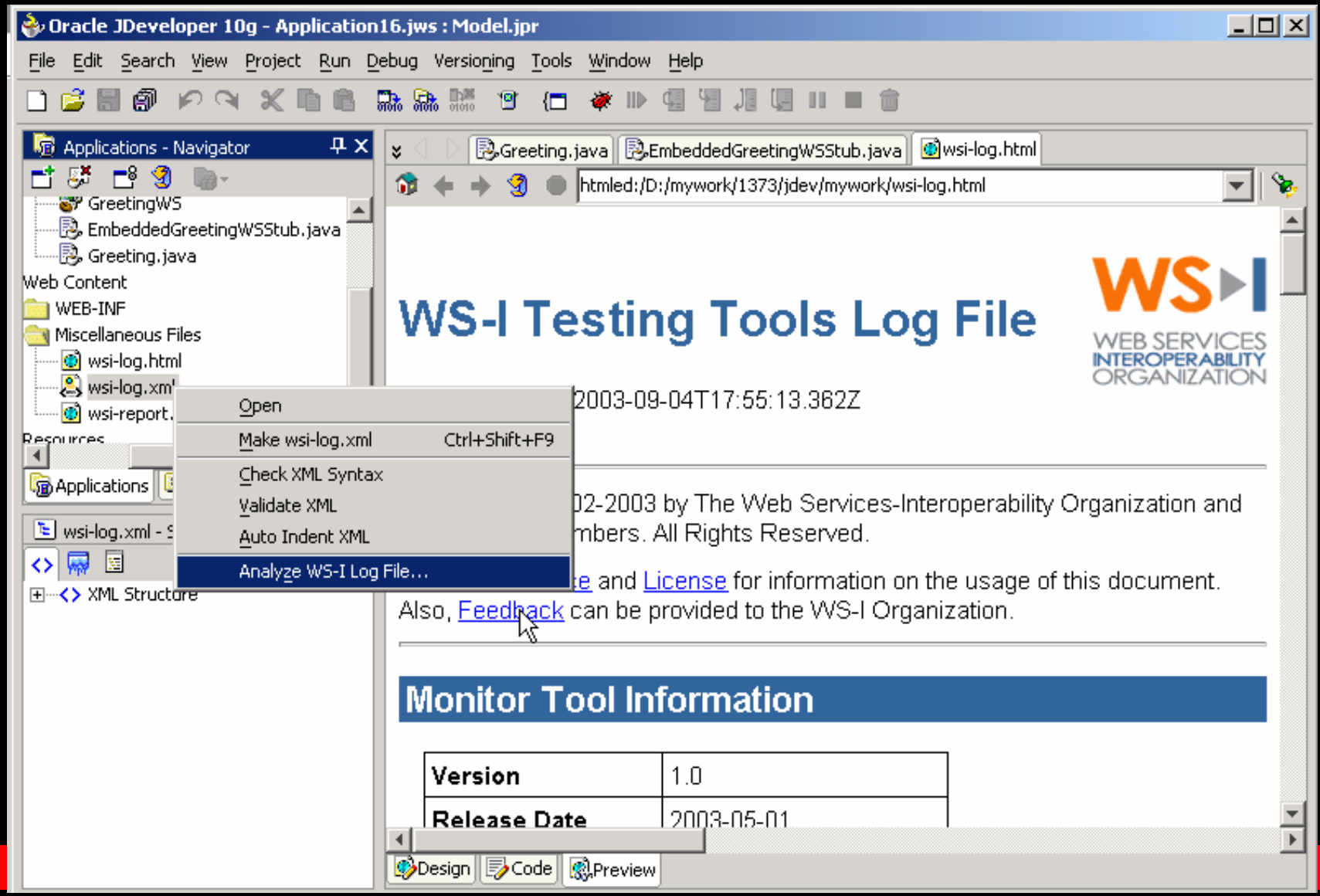




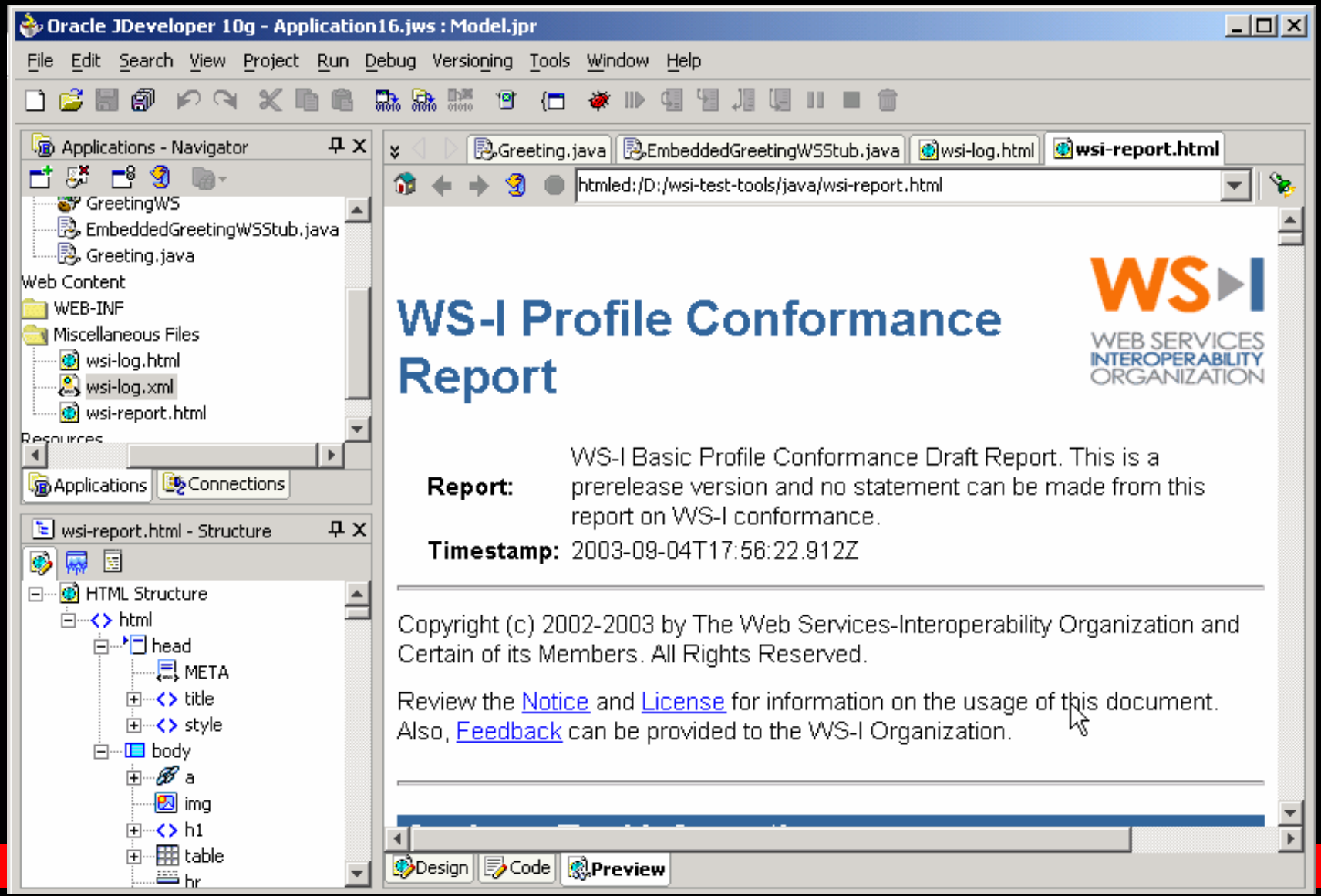
TCP Packet Monitor

- Analyze and Debug Web Service Traffic
- Edit/Resend Packets

Standard WS-I Log File, Formatting



WS-I Profile Conformance

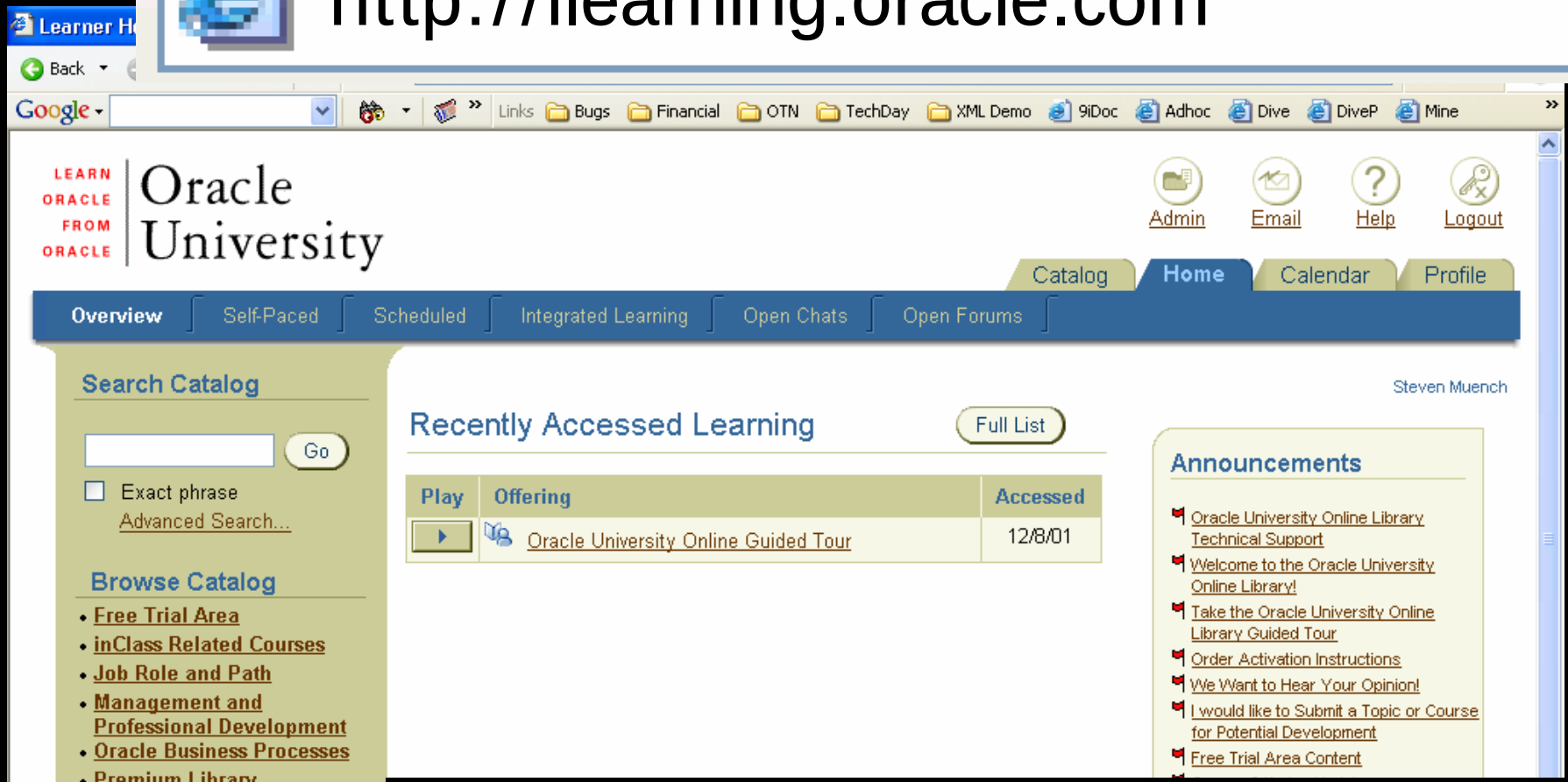


More Widely Used Than Ever

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

http://ilearning.oracle.com



- 8 Midtier Boxes (Mix of Linux and Solaris)
- One Big Database on Big Sun box
- 100,000 student sessions per day
- All BC4J based

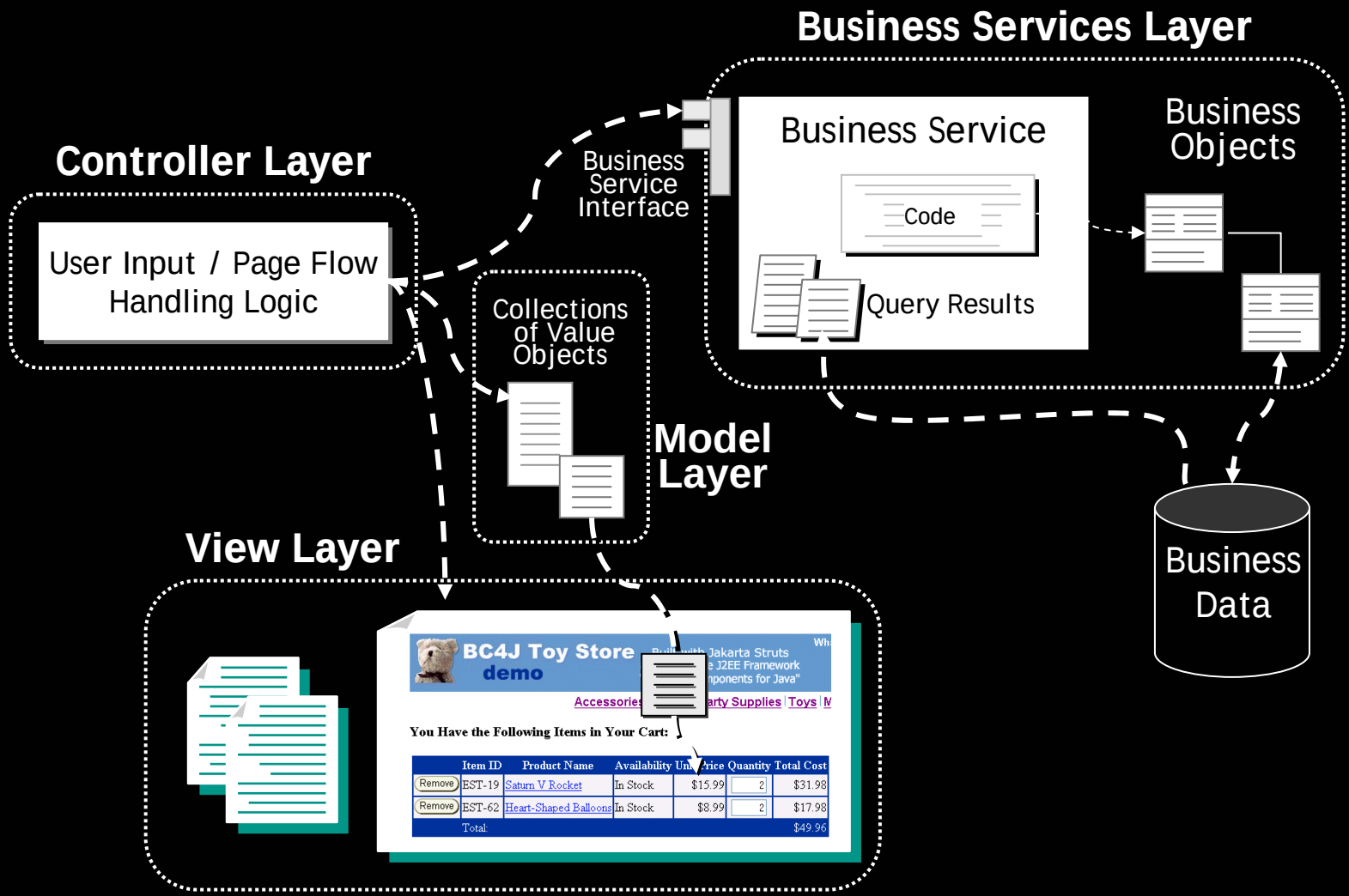
Building Your First J2EE App With JDev 10g

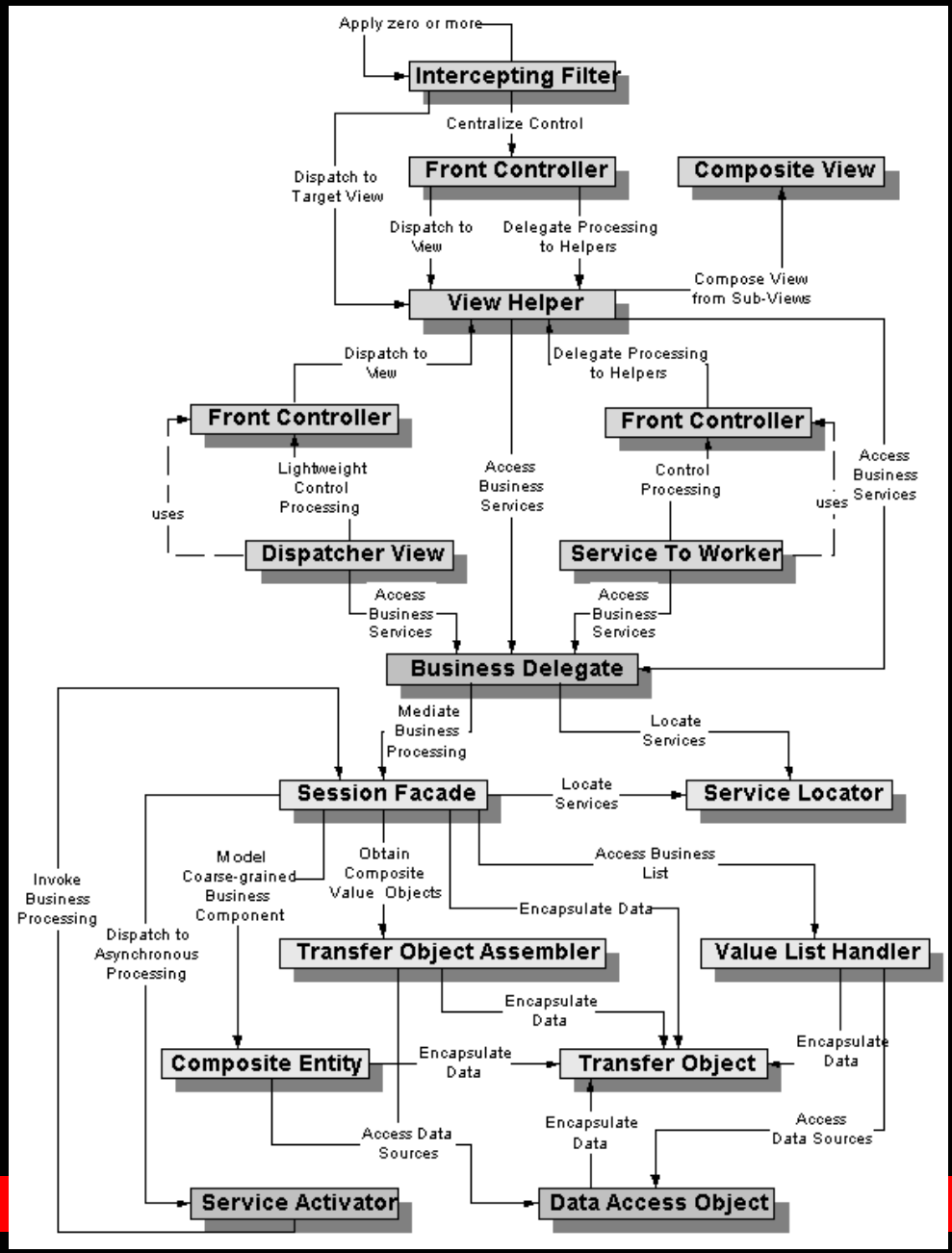
ORACLE

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





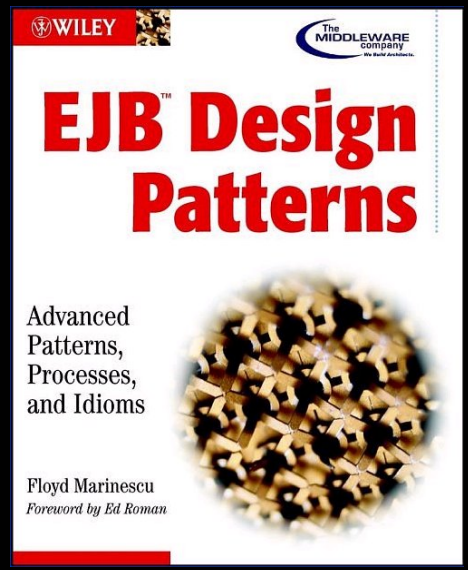
J2EE Design Patterns

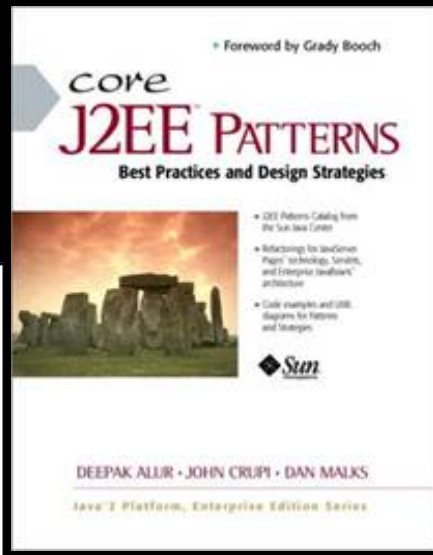
- Required for All Real World Applications
- Implementing Them Is:
  - Time Consuming
  - Error Prone
  - Tedious
  - More to Test, Debug, and Maintain
- Don't You Have An *Application* to Finish?

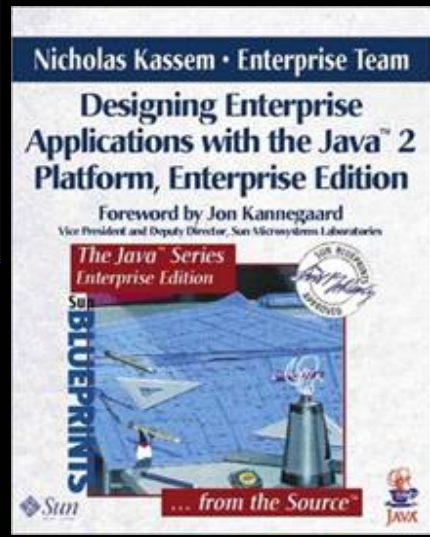
ORACLE

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

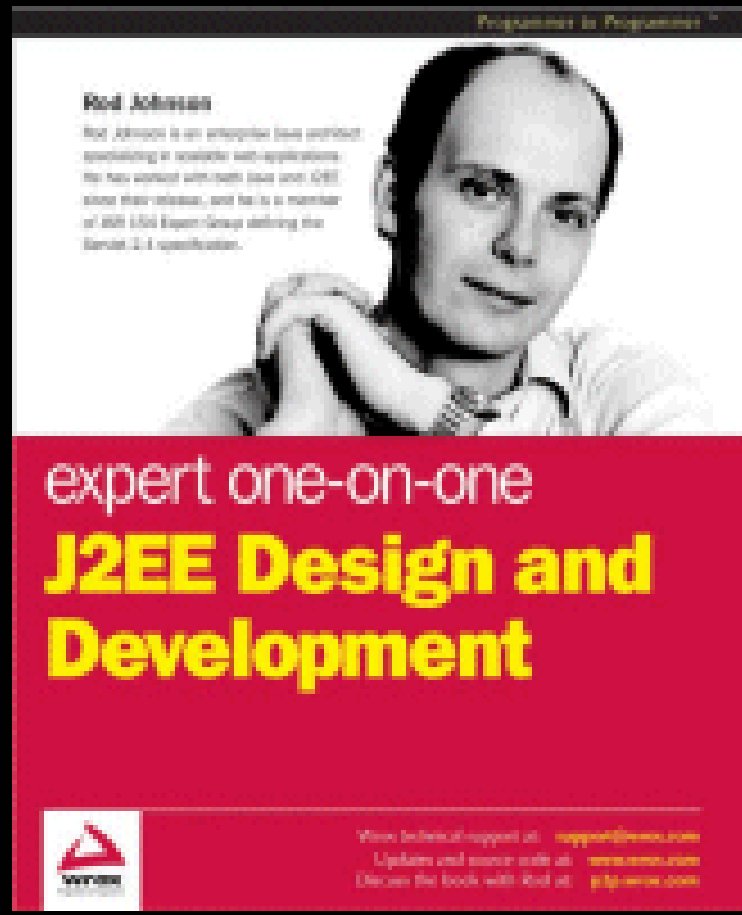






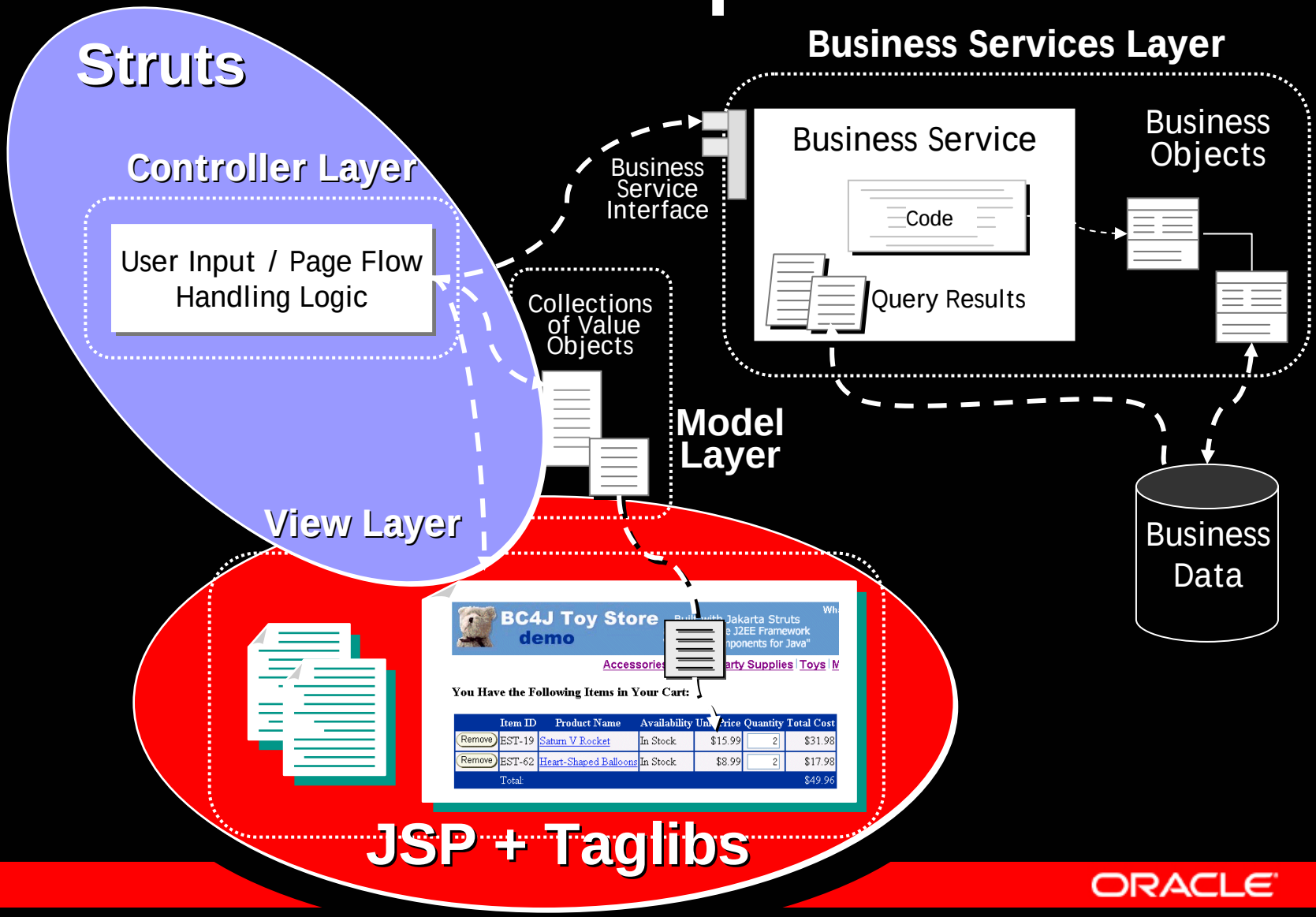
J2EE Expert's Advice

"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. "

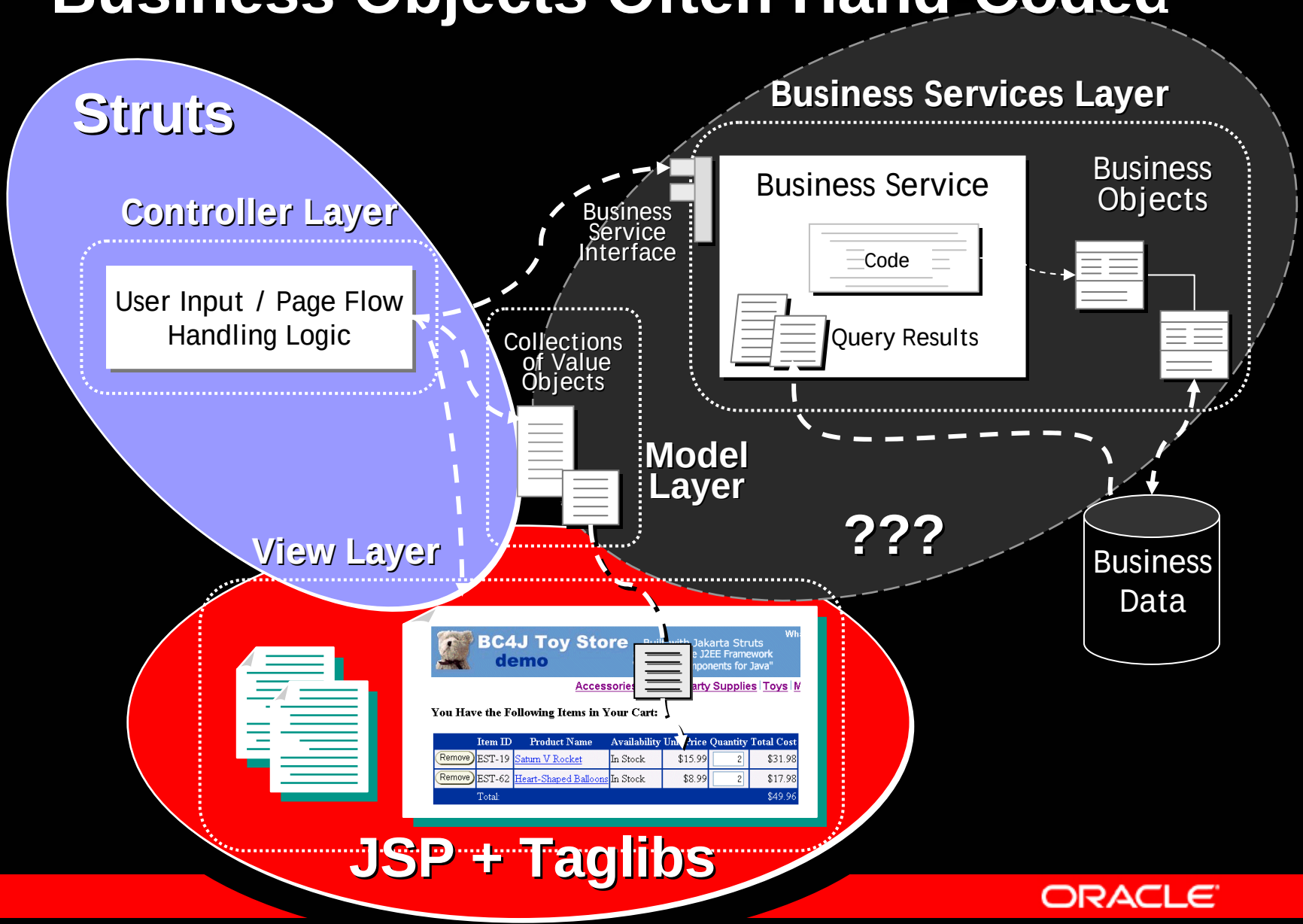


Page 166

Popular Framework-Based Techniques



Model, Services, Data Access, Business Objects Often Hand-Coded

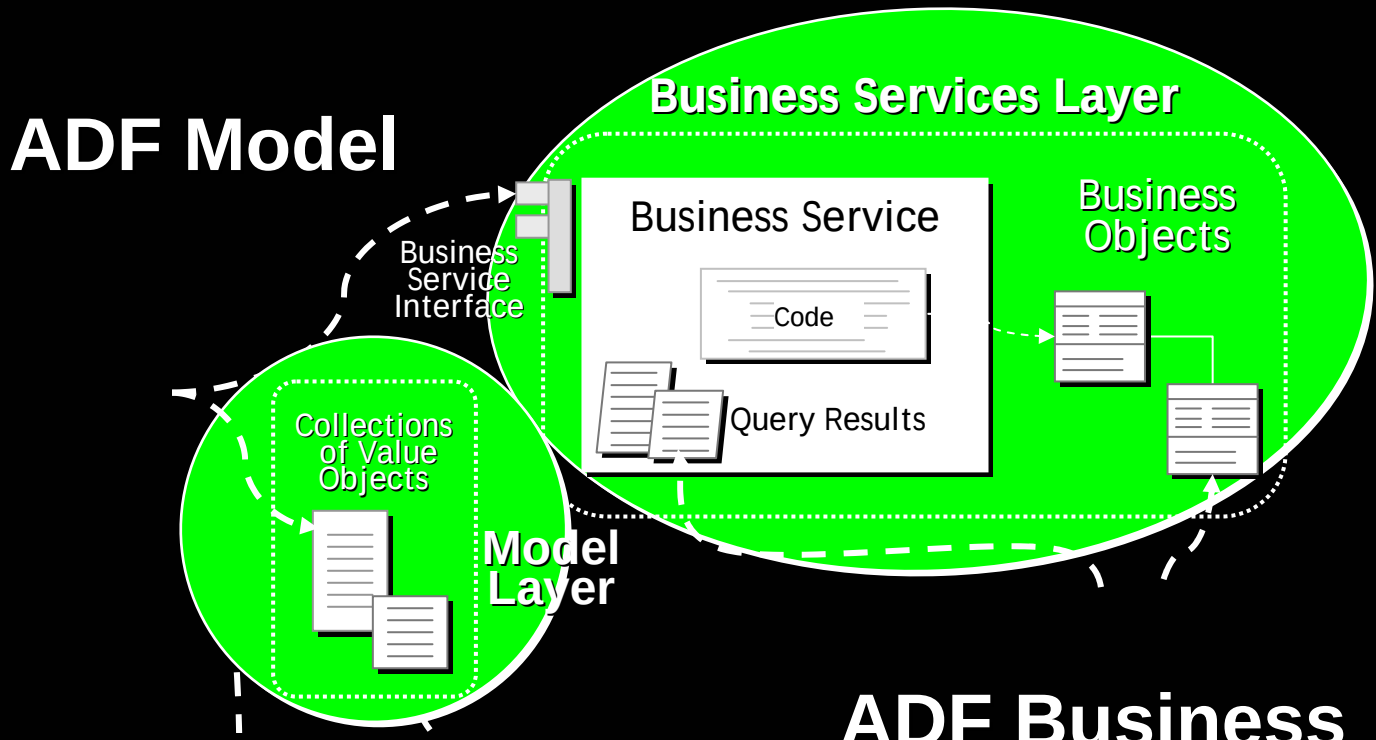


ORACLE

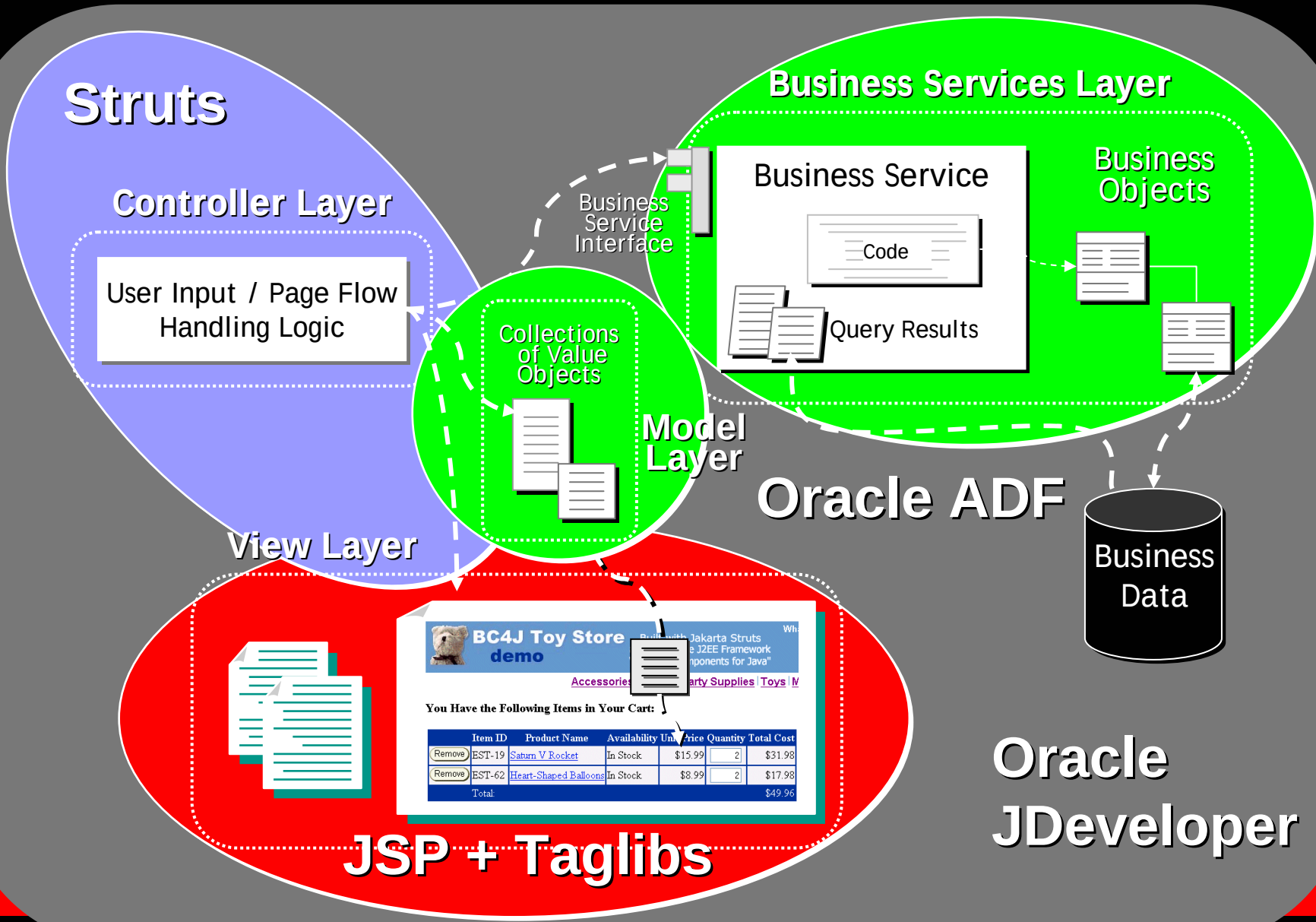
Framework Can Complement Struts or Swing to Help Build Business Services and Model

- 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

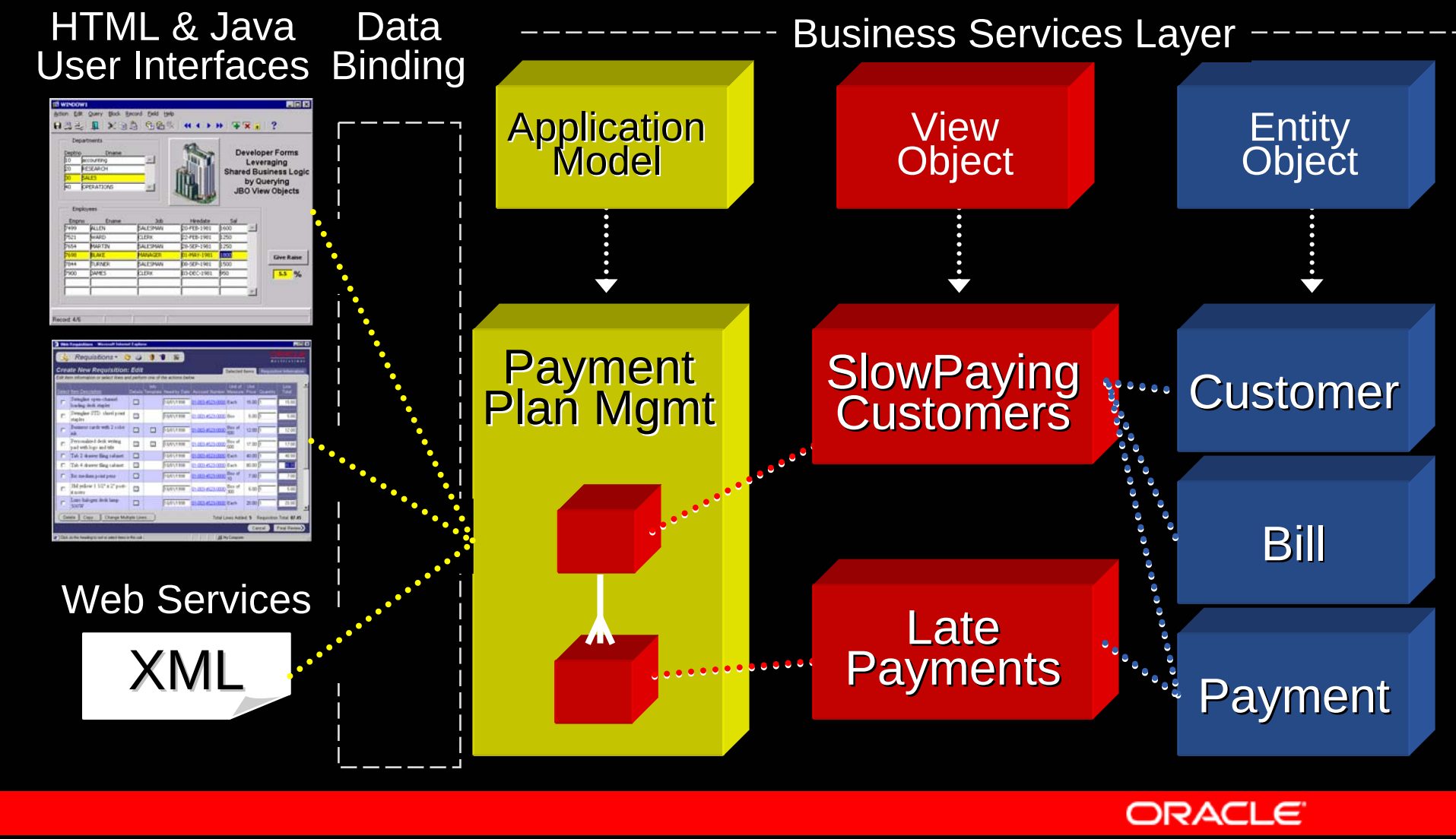
Oracle ADF Framework



Oracle JDeveloper IDE



Oracle ADF Business Components Building Blocks



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

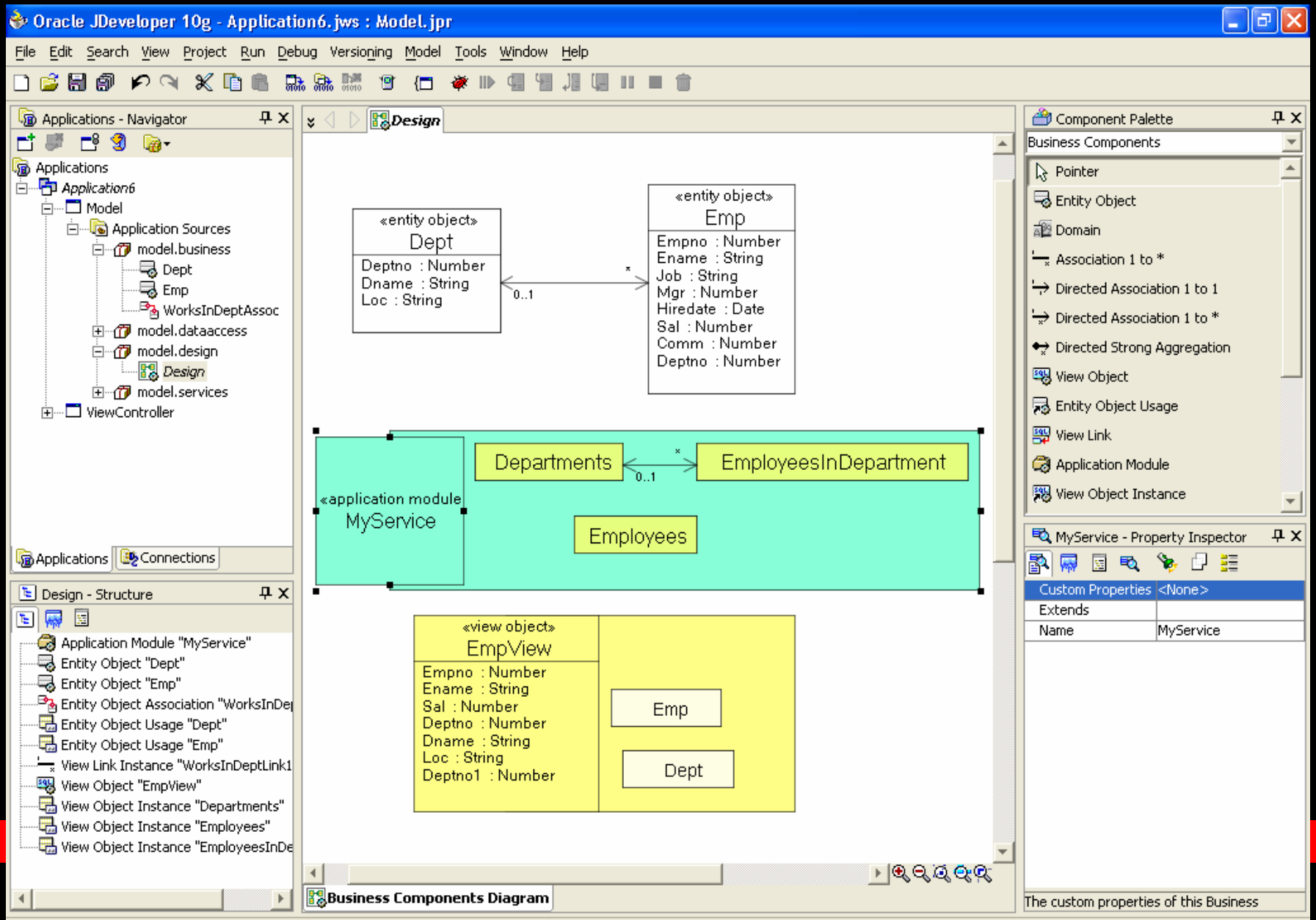
Step by Step Guide

- 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

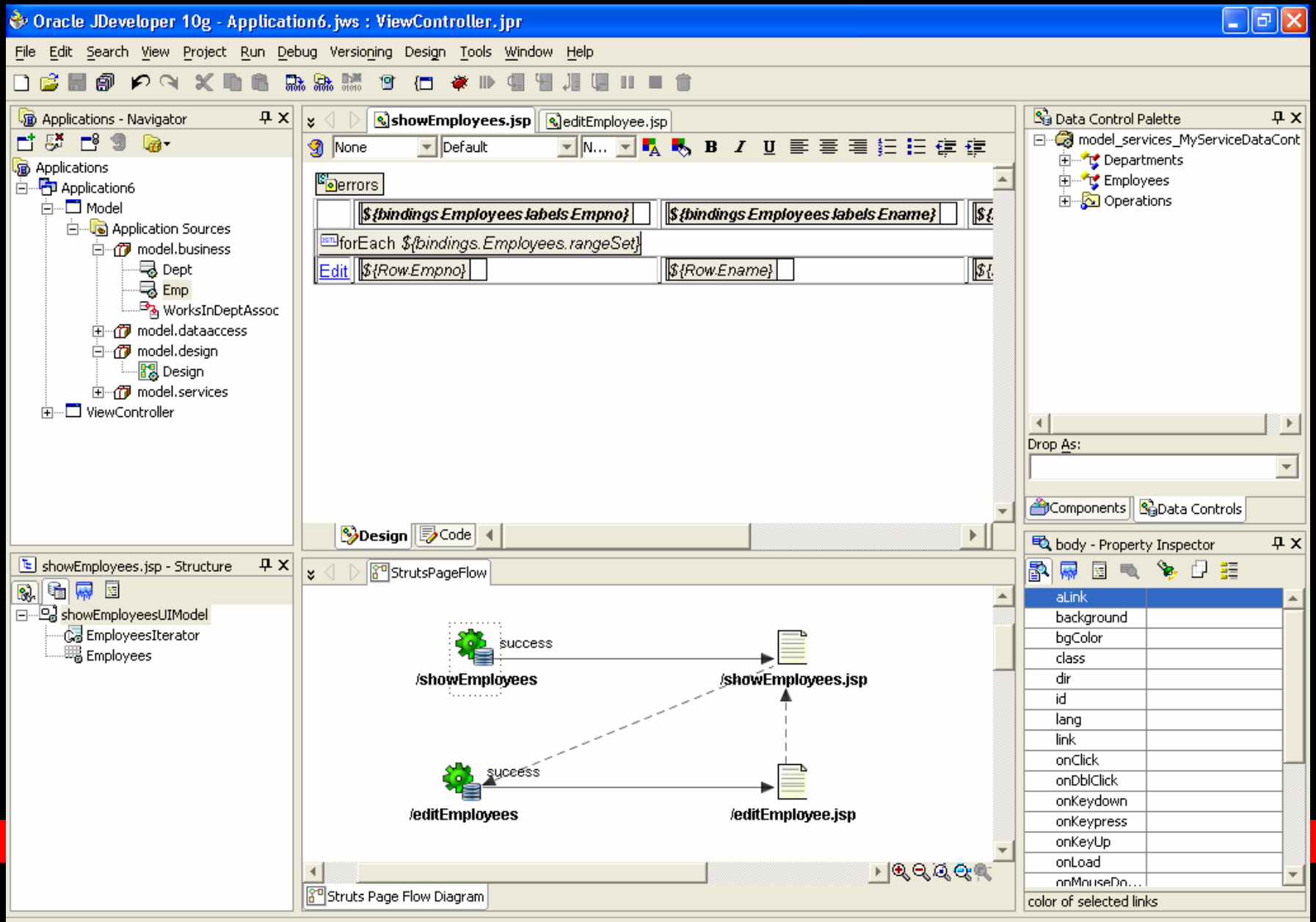
Step by Step Guide

- 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

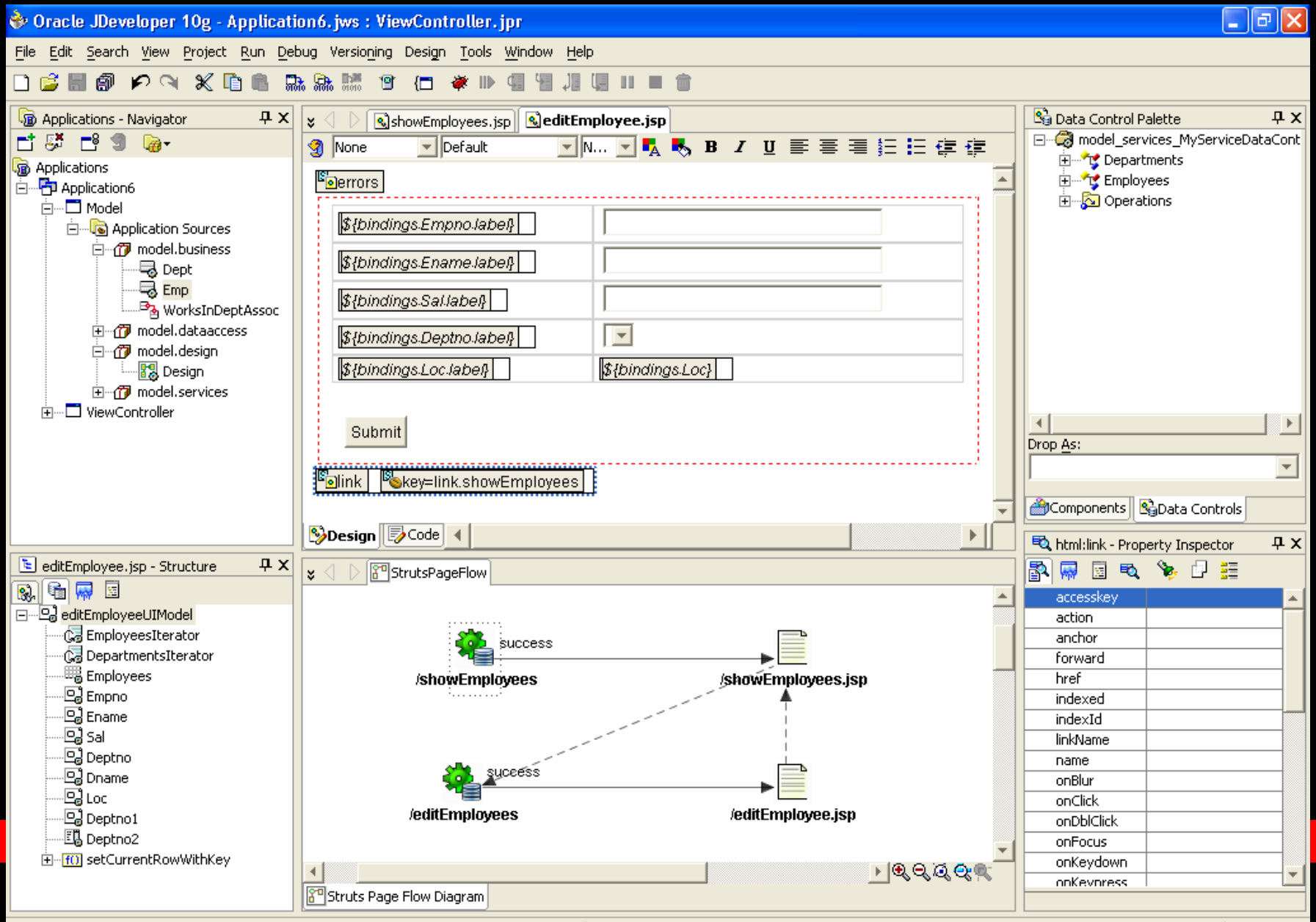
Business Service Components



Browse Page with Page Flow



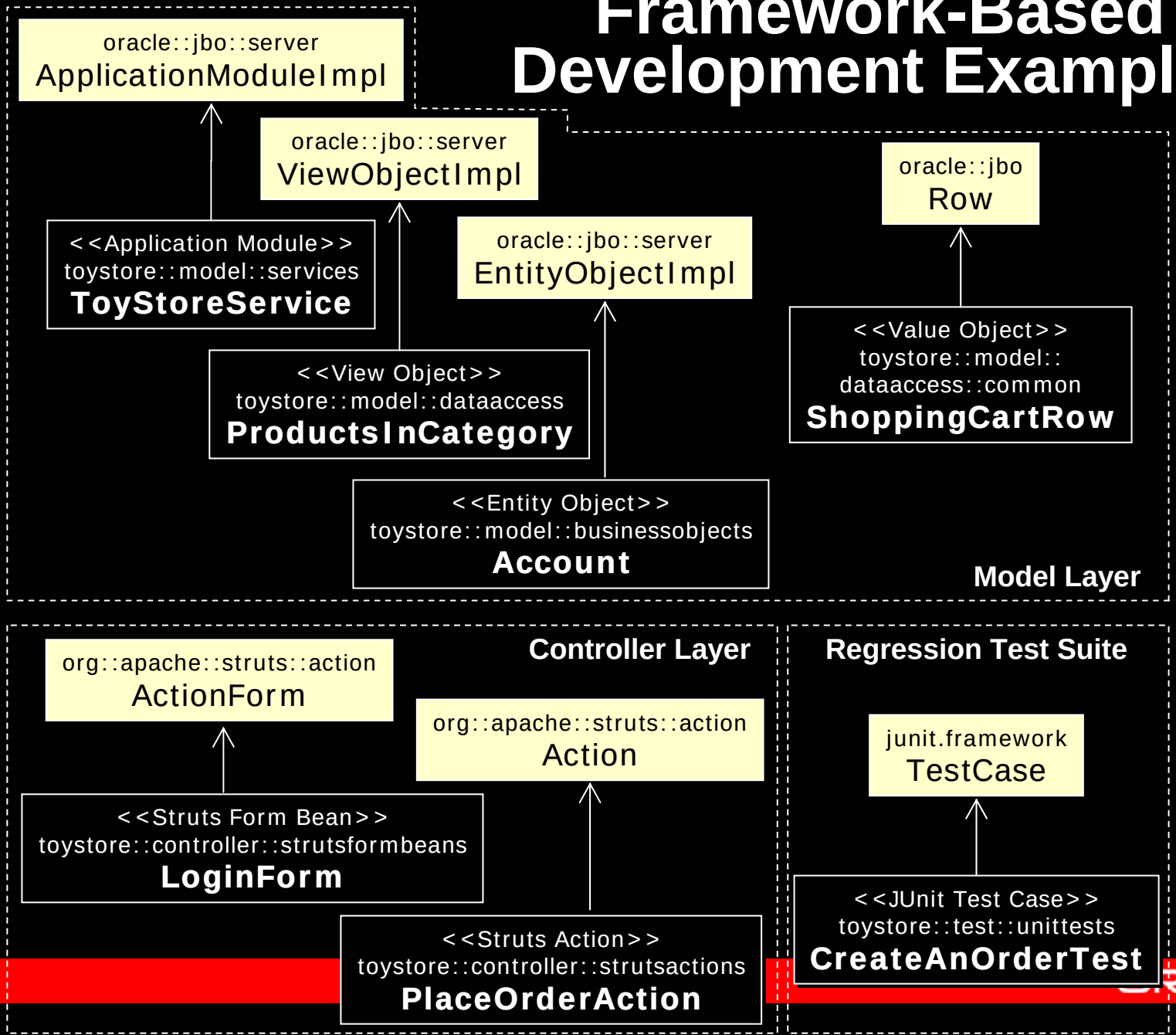
Edit Page with Page Flow



Struts / BC4J Toy Store Demo

http://otn.oracle.com/sample_code/products/jdev/bc4jtoystore

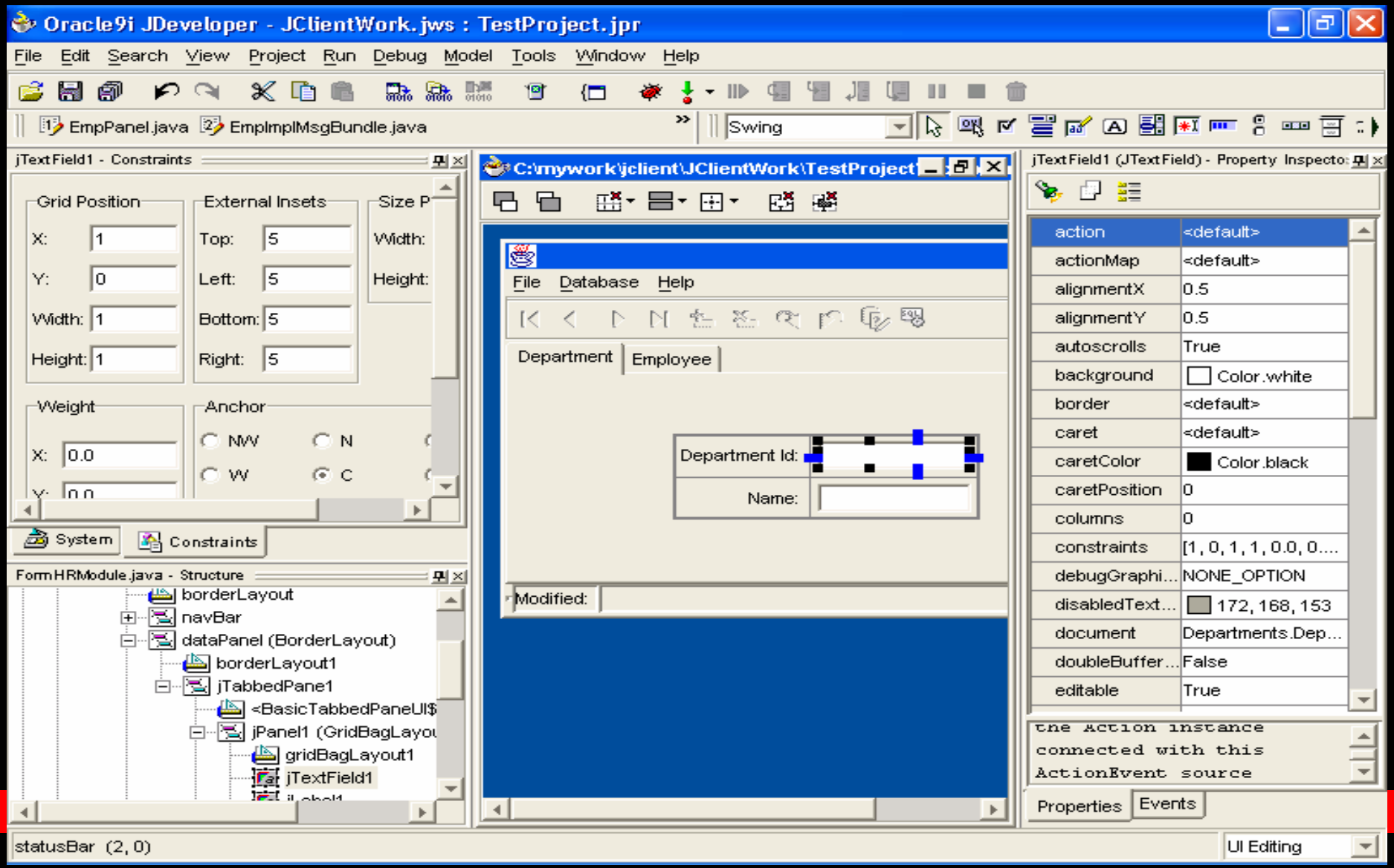
Framework-Based Development Examples



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



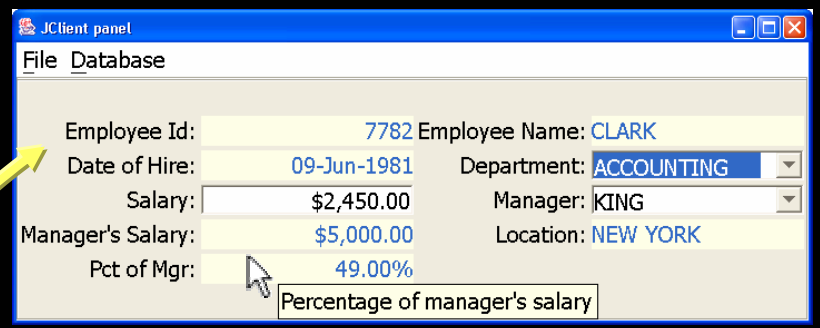
Example of Custom Framework

- 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!

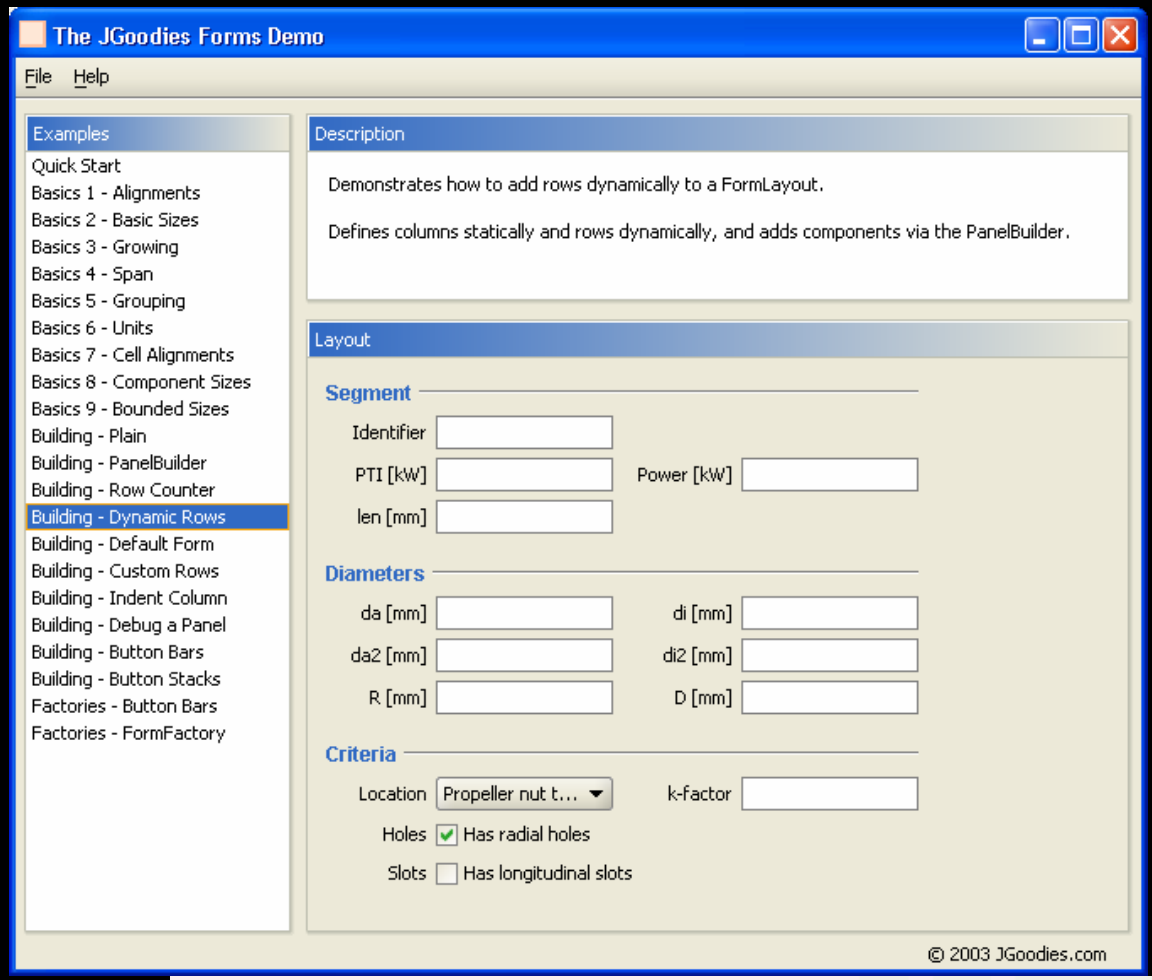
C:\techday\SmartTest\src\bolzano\EmpPanel.xml

```
<panel datamodel='TestProject.HRModule' xmlns="urn:jclient-smartpanel">
  <table border-style="" cellpadding="2" 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-attrs="WorksInDeptno"
                 list-value-attrs="Deptno"     list-display-attrs="Dname"/>
      </td>
    </tr>
    <tr>
      <th><label attr="Sal"/></th>
```

it.azienda.util.SmartPanel



JGoodies Framework



http://forms.dev.java.net

http://otn.oracle.com

Oracle Technology NETWORK

Oracle.com | Products | Oracle Store | Downloads | My Profile | Search

Home | Technology Centers | Resources | Services

Need Assistance? Ask the Oracle Concierge.

Technology Centers
- Grid
- Java
- Linux
- Web Services
- Windows
- XML
- More... Go

Products
- Oracle Database
- Oracle Application Server
- Oracle Developer Suite
- Oracle JDeveloper
- Oracle Collaboration Suite

Services
- Download Software
- Order Software on CD
- Get Support
- Market Your Skills
- Submit Articles

Wednesday, September 10, 2003

ORACLE WORLD

OracleWorld 2003: Now in Session

This week Oracle announces Oracle Database 10*g* and Oracle Application Server 10*g*, the first complete, integrated infrastructure software to help you develop, deploy, and manage applications for an enterprise grid built on low-cost, modular storage and server hardware. **See today's agenda highlights below**, and be sure to check back daily for updates.

Catch Up on Today's OracleWorld News
Ellison Launches Oracle Enterprise Grid, A Look at Implementing BC4J with Struts, Using ASM to Simplify Your Job, Users Shaping the Future of Forms, Solving a Persistent Problem [More...]

Register Online to be Notified About Oracle 10*g* Availability

Review New Oracle 10*g* Technical Information
Oracle Database 10*g*, Oracle Application Server 10*g*, Oracle JDe
10*g*

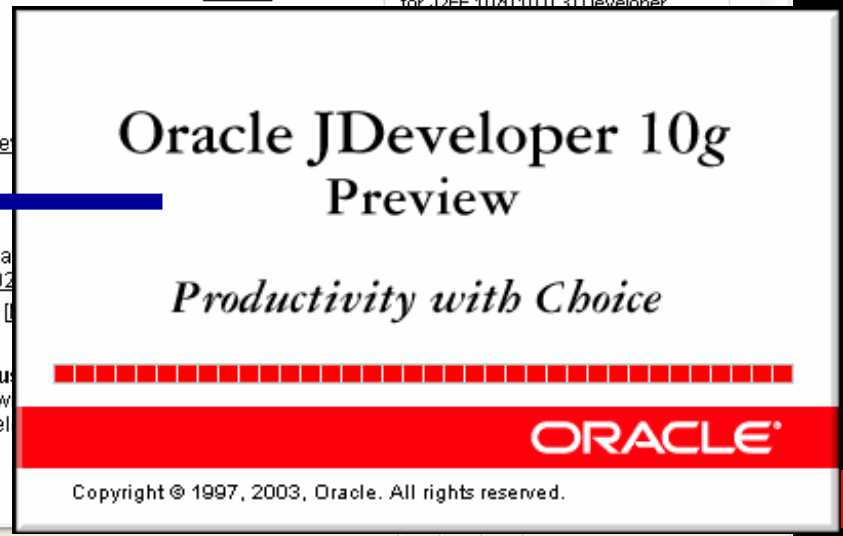
Review Today's Featured Tech Sessions
Understanding the Impact of J2EE Applications on Relational Da
Standards-Based Business Processes with Web Services (4002
with Oracle JDeveloper 10*g* – Focus on the MVC Model (40224) [

Learn How to Build Your Own Oracle RAC-Capable Linux Clu
Visit OTN in the Oracle DEMOgrounds and see our 4-node Firew
(OCFS) cluster in action. Also, get a chance to speak to the devel
source projects.

Attend Today's Guru Chats

Top Content
- Get Started with Oracle Products
- OTN Activities at OracleWorld
- XML Oracle RSS Newsfeeds
- Oracle Open Source Projects
- Code of the Week
- Oracle By Example Series
- Download OTN Toolbar

Top Downloads
- Oracle Application Server Containers for J2EE 10*g* (10.0.3) Developer



Done | Internet

Dive into B
Back
Google
http://radio.weblogs.com/0118231/
Updated: 9/8/2003; 11:14:34 PM.
Radio
Dive into BC4J
Tips and tricks from Steve Muench on using Oracle's J2EE framework, JDeveloper9i Java IDE, and XML...
USERLAND
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.
10:53:04 PM #
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.
ORACLE JDEVELOPER 10g
Once you download and startup the tool, pick Help | Release Notes from the main menu to read over any
September 2003
Sun Mon Tue Wed Thu Fri Sat
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30
Aug Oct
Home
BC4J Toy Store Demo
Technical Articles
Overview of BC4J
JDev on OTN
JDev Discussion Forum
OTN HowTo Documents
Sung Im (BC4J)
Brian Duff
XML
XML
RSS for Charity
java.blog
Opening page http://127.0.0.1:5335/...
Internet

QUESTIONS
&
ANSWERS