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THE INFORMATION COMPANY

Frank Nimphius

Principal Product Manager

Application Development Tools

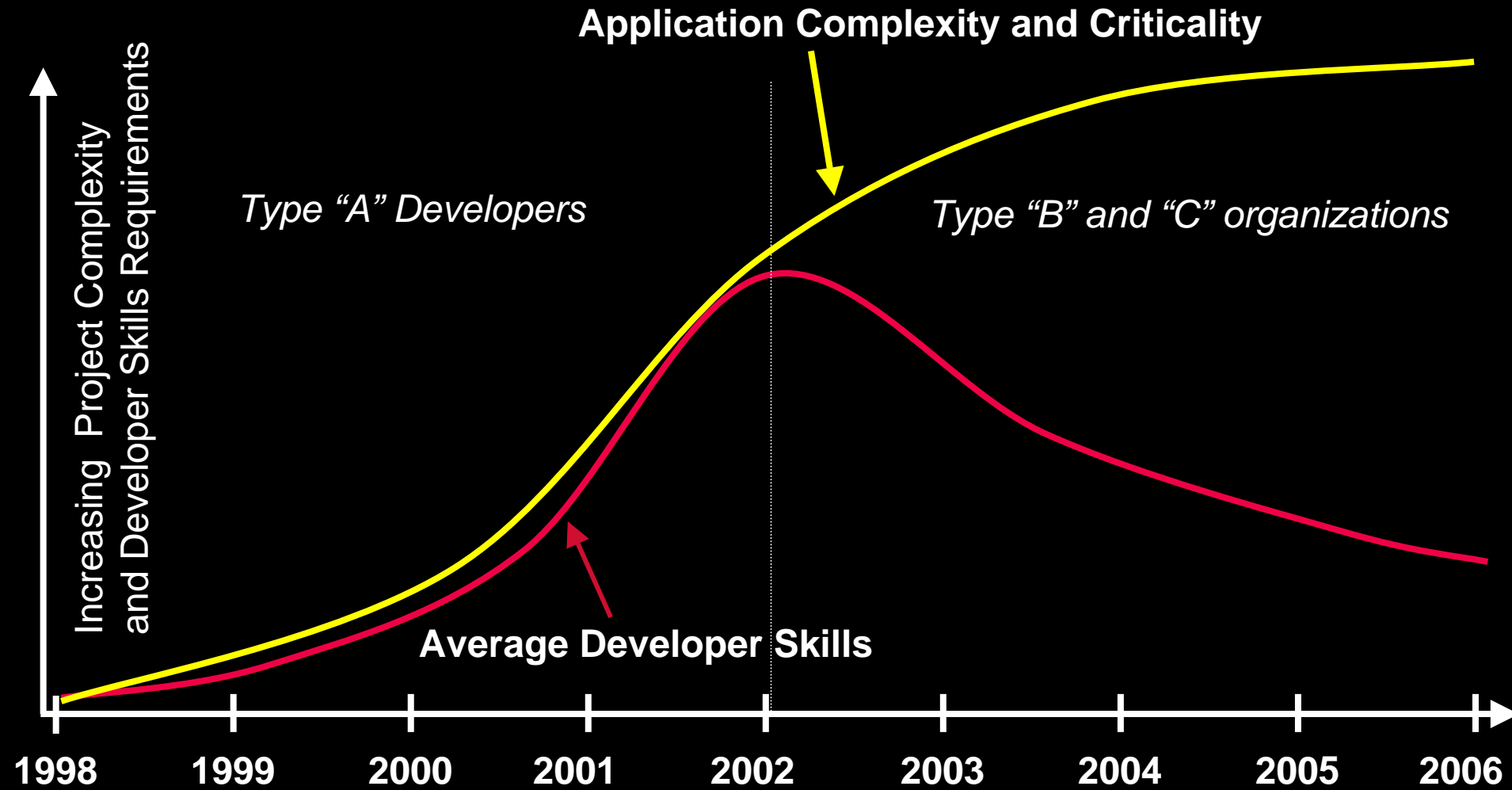
Oracle Corporation

Oracle JDeveloper 10.1.3

Overview

Ease of Use and Productivity

The J2EE Paradox



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Source: Gartner, Inc.

Next Generation of J2EE Tools

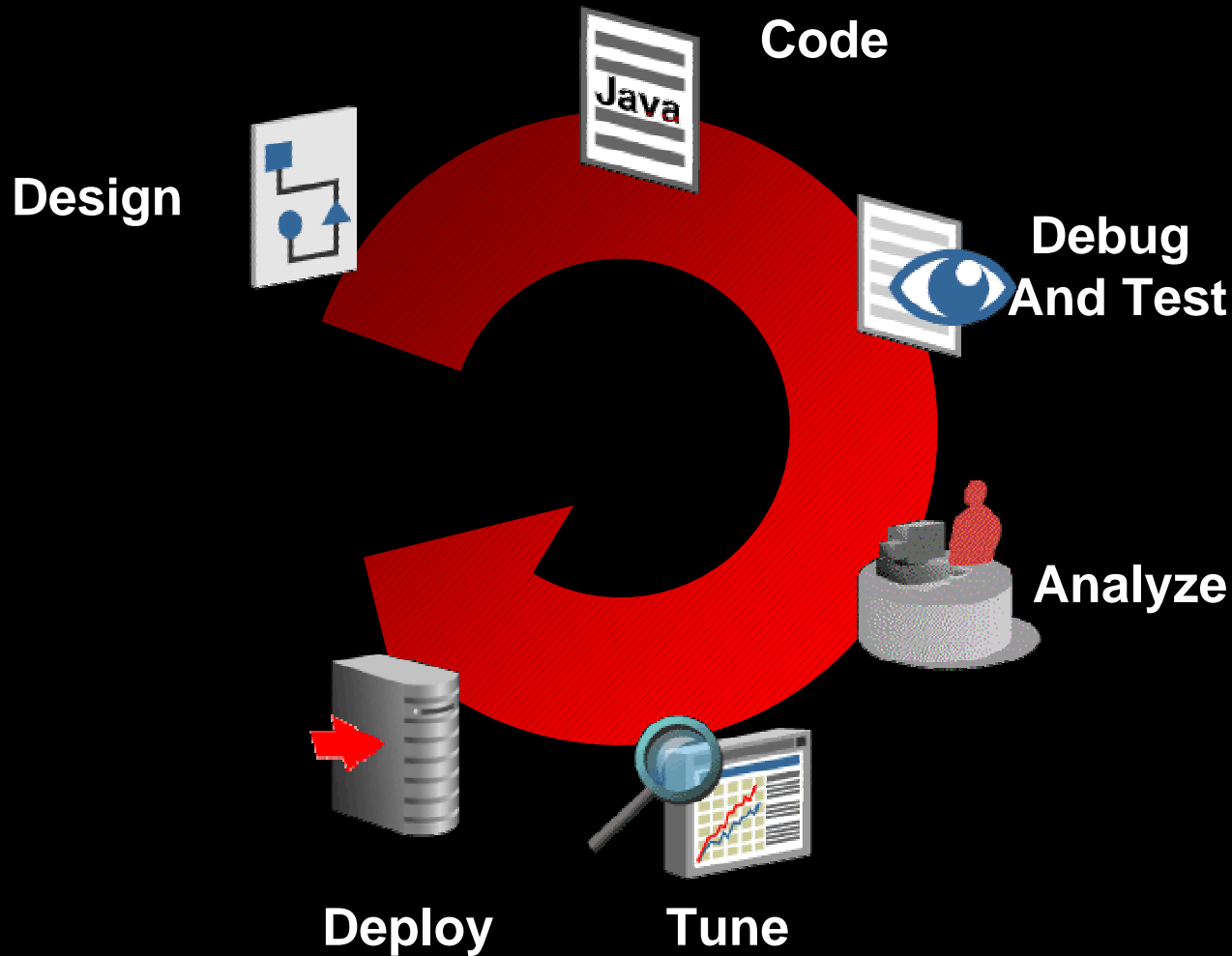
- Reach a Broader Audience
 - Bring the power of J2EE to corporate developers
- Increase Productivity and Ease of Use
 - Visual and declarative development
 - Less coding, more reuse
 - Bridge the usability gap with C/S tools
- Reduce Learning Curve / Staffing Issues
 - Provide abstraction on top of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

Oracle JDeveloper 10g Themes

- Complete and Integrated
 - Full development lifecycle
 - One tool for Java, Web Services, XML, DB and more
- Standard and Extensible
 - Support industry standards
 - Integrate Open Source Utilities
 - Open Extension API (JSR 198)
- Easy to Use and Productive
 - Improved coding productivity
 - Visual and declarative development
 - Oracle Application Development Framework (Oracle ADF)
- FREE

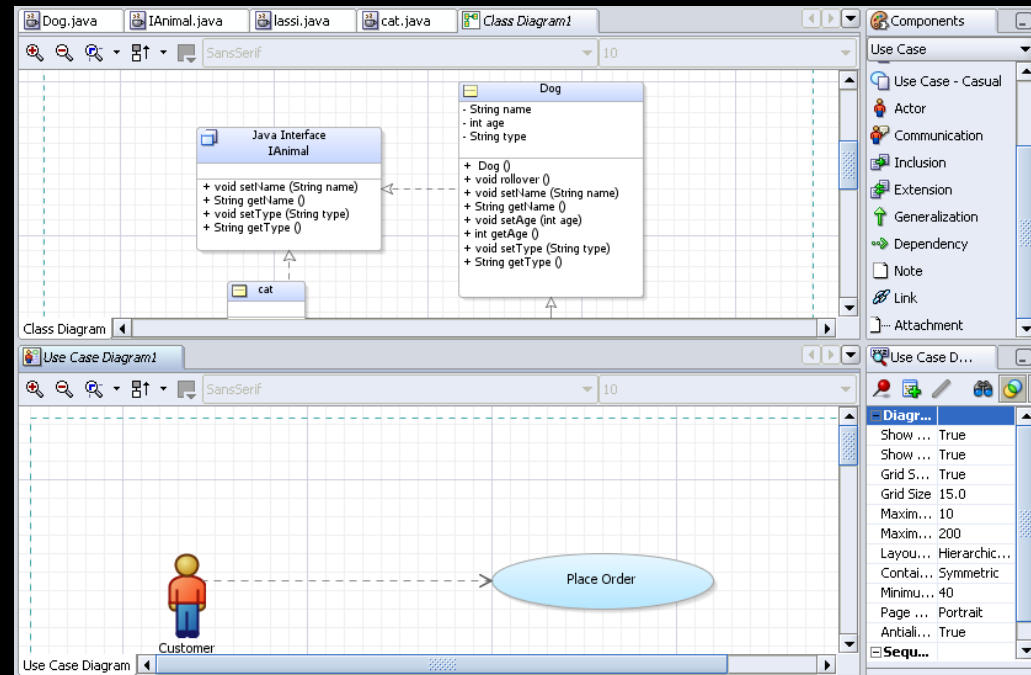
Complete and Integrated

Full Lifecycle Support



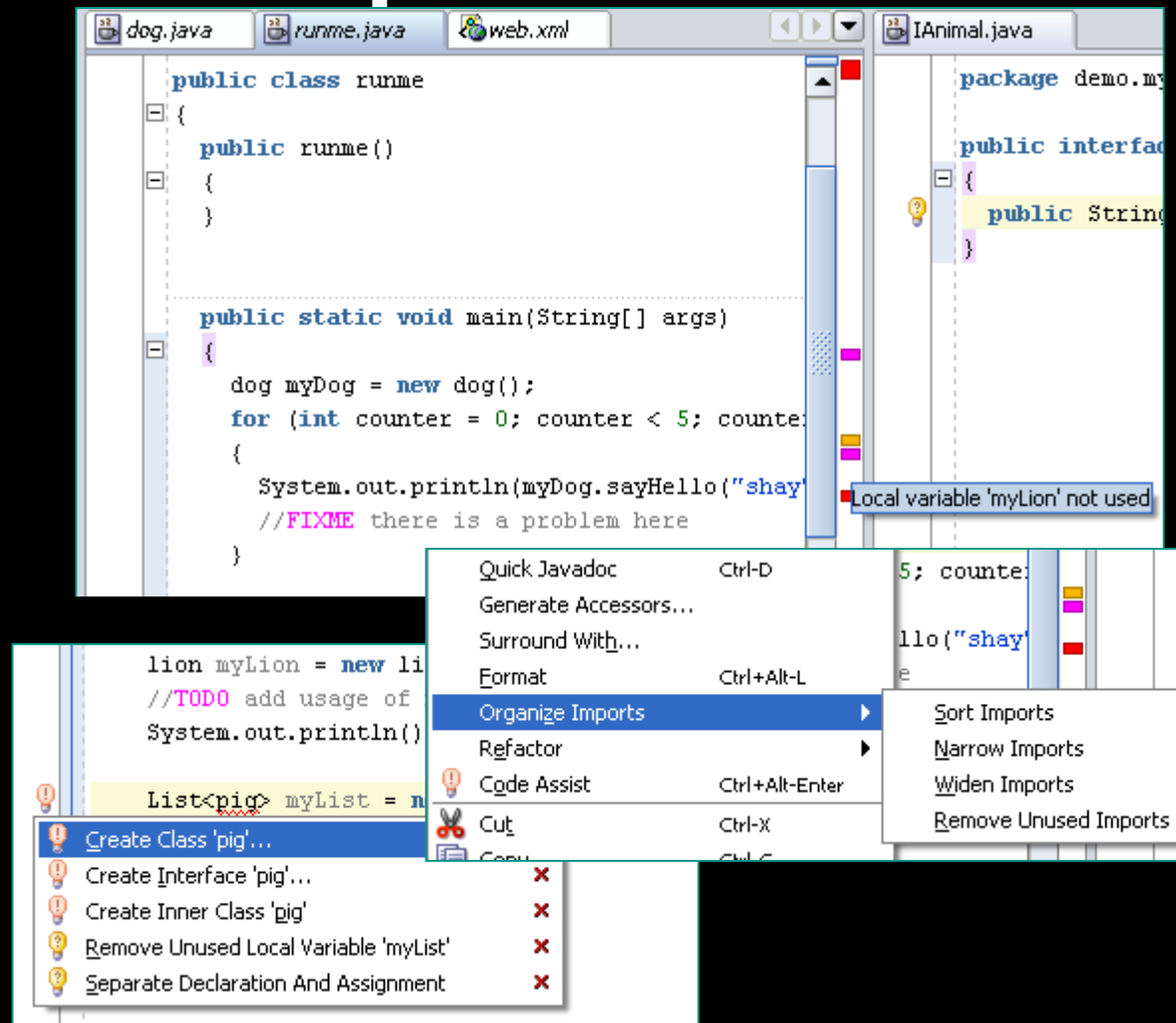
UML and Visualization

- UML (PIM)
 - Class Modeling
 - Sequence Modeling
 - Use Case Modeling
 - Activity Modeling
- PSM Visualization
 - Java Class Modeling
 - EJB Modeling
 - Database Modeling
 - Page Flow Modeling (JSF/Struts)
 - XML
 - WSDL
 - ADF Business Components



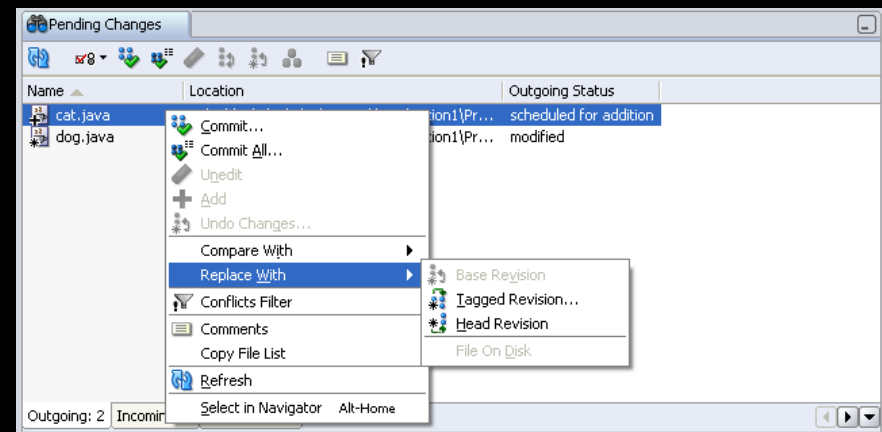
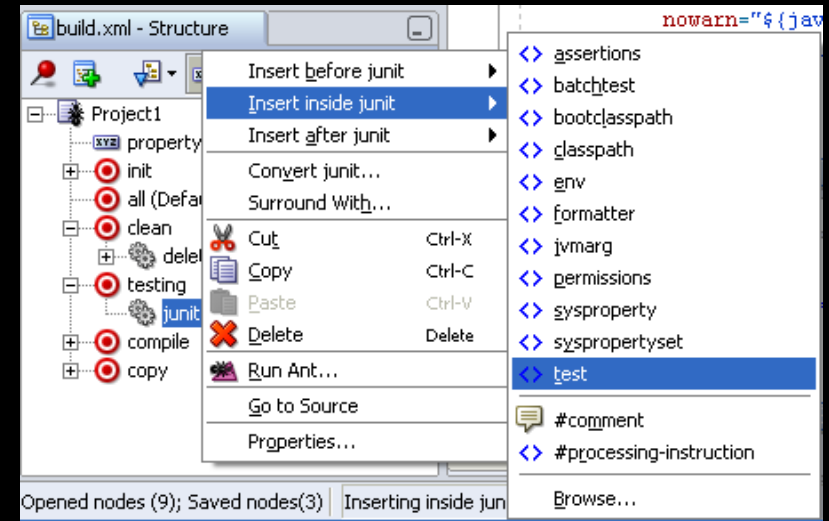
Coding in JDeveloper

- Advance Coding Environment
- Helpful Editor
- Code Assist
- Code Navigation
- Interactive Code Templates
- Coding Shortcuts



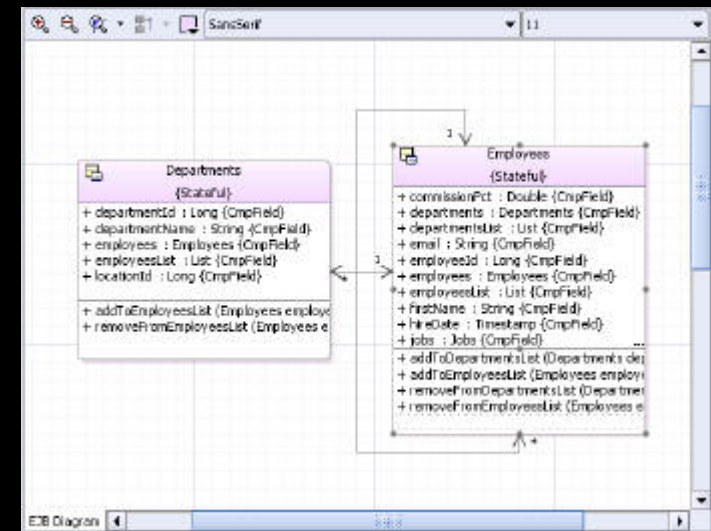
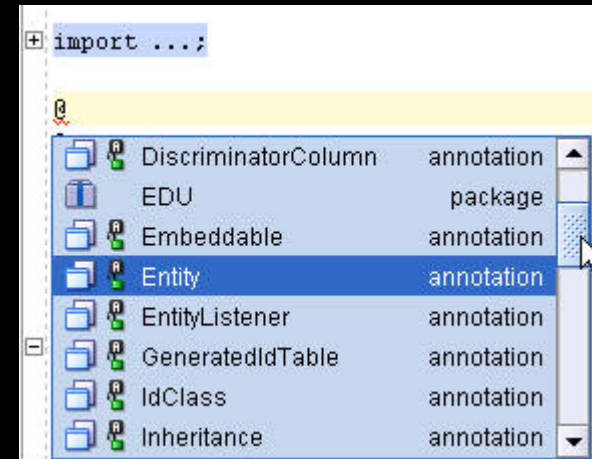
Agile Development

- 37 Refactoring options
- Ant build files Integration
- Junit tests creation and running
- Integration with Software Configuration tools, and a local history tab
- XDoclet Integration



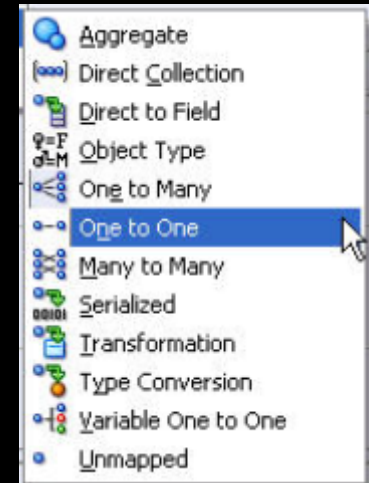
EJB Development

- Wizards for EJB creation
 - 2.0, 2.1 or 3.0
- EJB Modeler
- EJB Module Editor for declarative configuration
- One-click sample client creation for testing
- Reverse engineering capabilities for Entity Beans



TopLink - POJO Development

- Persistence framework for Java Objects
- TopLink Mapping Editor integrated in JDeveloper
 - Intuitive design time for mappings and configuration
 - Objects from Tables or Meet-in-the-Middle
- O-R persistence capabilities
 - Advanced CMP for OC4J
 - Enhanced support for Oracle DB features
 - Advanced distributed caching, history, and TX
- Expanded persistence for non-relational data sources
 - Object-XML (JAXB compliant)
 - EIS support through JCA



ADF Business Components

- Declarative “SQL based” persistence
 - Declarative, familiar approach for 4gl developers
- Wizards, Editors, and UML Modelers
 - Visually design and modify declarative component settings
- XML-Configured, Lightweight JavaBeans
- *ApplicationModule* - Business Service Component
 - Use as JavaBean, EJB, Web Service
- *ViewObject* - Data Access Component
 - Performs SQL queries and coordinates with entity objects
- *EntityObject* - Business Domain Component
 - Encapsulates business domain data and validation

Web Development - JSF

- Declarative and visual development of JSF applications
- Built-in support for the JSF RI, and support to add alternative JSF implementation e.g. MyFaces
- Page flow editor for JSF navigation
- Overview editor of JSF configuration files
- Backend code generation
- Import custom JSF components
- Declarative data binding

storeFront.jsp

Component Palette

JSF HTML

- Pointer
- Checkbox
- Column
- Command Button
- Command Hyperlink
- Data Table
- Form
- Graphic Image
- Input Hidden
- Input Secret
- Input Text
- Input Textarea

Design Source History

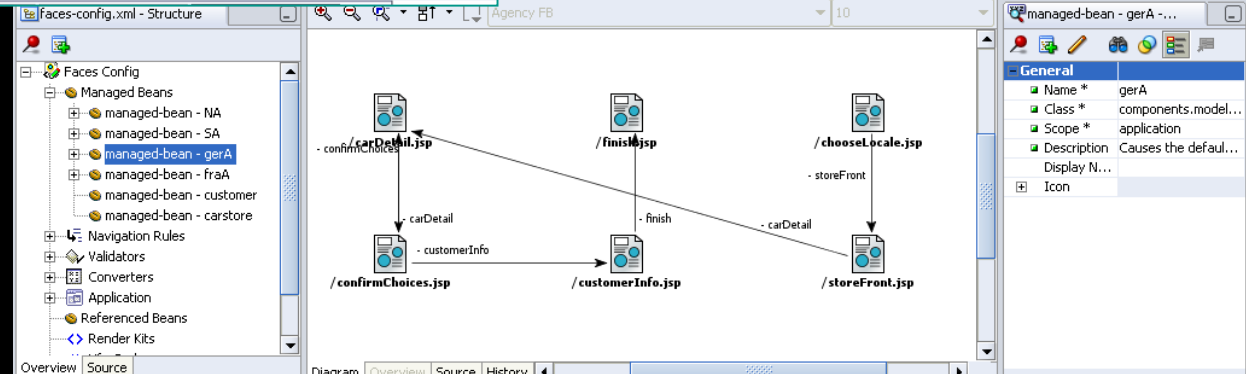
```
<html> <body> <f:view> <h:form> <h:panelGrid  
title="#{bundle.chooseCar}" >  
  <h:panelGrid columns="2" > </h:panelGrid>  
  <h:panelGrid columns="2"  
    styleClass="storeFrontCar">  
    <!-- Luxury -->  
    <h:graphicImage binding="#{carstore.models.Luxury.compo  
  <h:outputText styleClass="subtitlebig"  
    value="#{carstore.models.Luxury.attributes.title}" />  
    <h:outputText value="... tes.description" />  
    <h:commandButton act ... > </h:commandButton>
```

Managed Beans

Class	Scope
components.model.I...	application
components.model.I...	application
components.model.I...	application
carstore.CustomerB...	session
carstore.CarStore	session

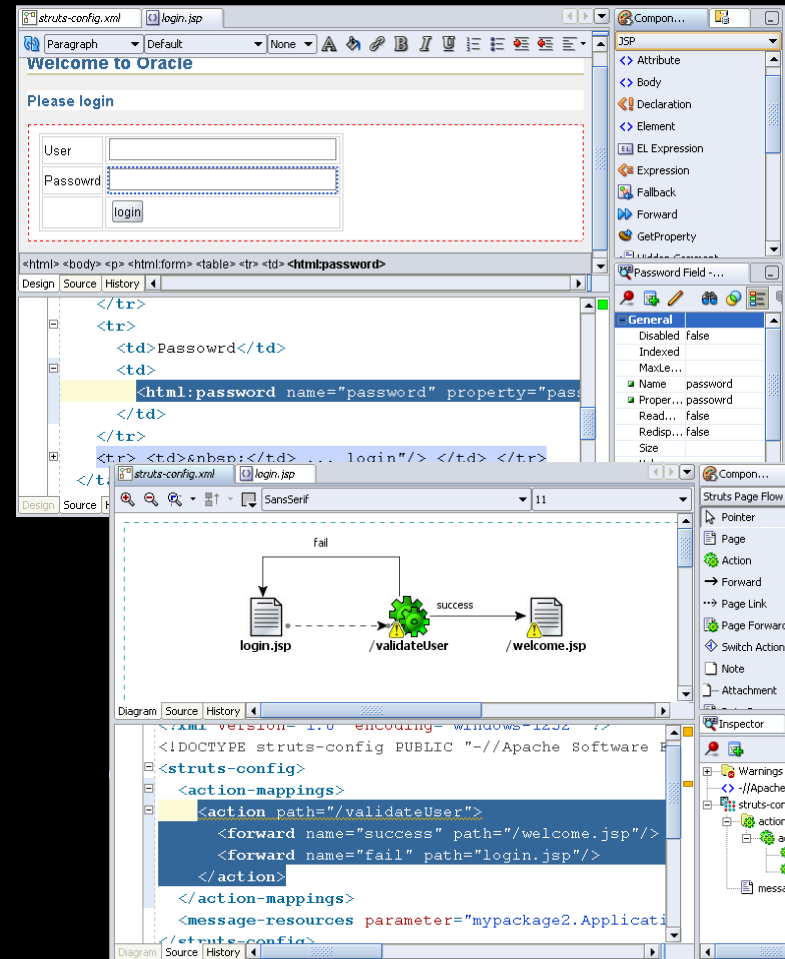
Managed Properties

Class



Web Development – JSP/Struts

- Visual editor with tag execution, navigation bar, prelude/coda rendering
- Code editor with code-insight
- Component Palette
- Page flow editor for Struts
- Visual CSS editor
- Page templates
- Support for Struts Tiles



Swing Development

- WYSIWYG Editor
- Swing Component Panel
- Property Inspector
- Events tab
- Constraint Window
- Code Editor In synch
- Unique UI Debugger
- WebStart Deployment

The screenshot displays the Oracle9i JDeveloper IDE interface for developing a Swing application. The main window shows a WYSIWYG editor for the `AuthenticationDialog.java` class. The dialog has a title bar with a "Login" button, a "WELCOME TO VSM ADMINISTRATION" message, and two input fields labeled "User Name" and "Password". Below the input fields are "Login" and "Reset" buttons. The IDE includes several panels: "Applications - Navigator" on the left showing the project structure, "AuthenticationDialog.java - Structure" at the bottom left showing the component hierarchy, "Component Palette" on the right with "Swing Containers" selected, and "password (JPasswordField) - Properties" and "password - Constraints" panels on the right. The code editor at the bottom shows the following Java code:

```
password.addKeyListener(new KeyAdapter() {  
    public void keyReleased(KeyEvent e) {  
        if (e.getKeyCode() == KeyEvent.VK_ENTER) {  
            login.doClick();  
        }  
    }  
});
```

Web Services Development

- Create J2EE 1.4 (JAX-RPC) Web Services
 - Java class, PL/SQL package, EJB (2.x / 3.0), JMS
- Consume Web Services
 - From WSDL endpoint or UDDI registries
- Publish Web Services to UDDI registry
- Advance Web Services Infrastructure support
 - WS-Security, WS-Reliability, WS-Management
- Visual WSDL Editor
- Contract-driven (aka top-down) support
- WSIF support

Performance Analysis

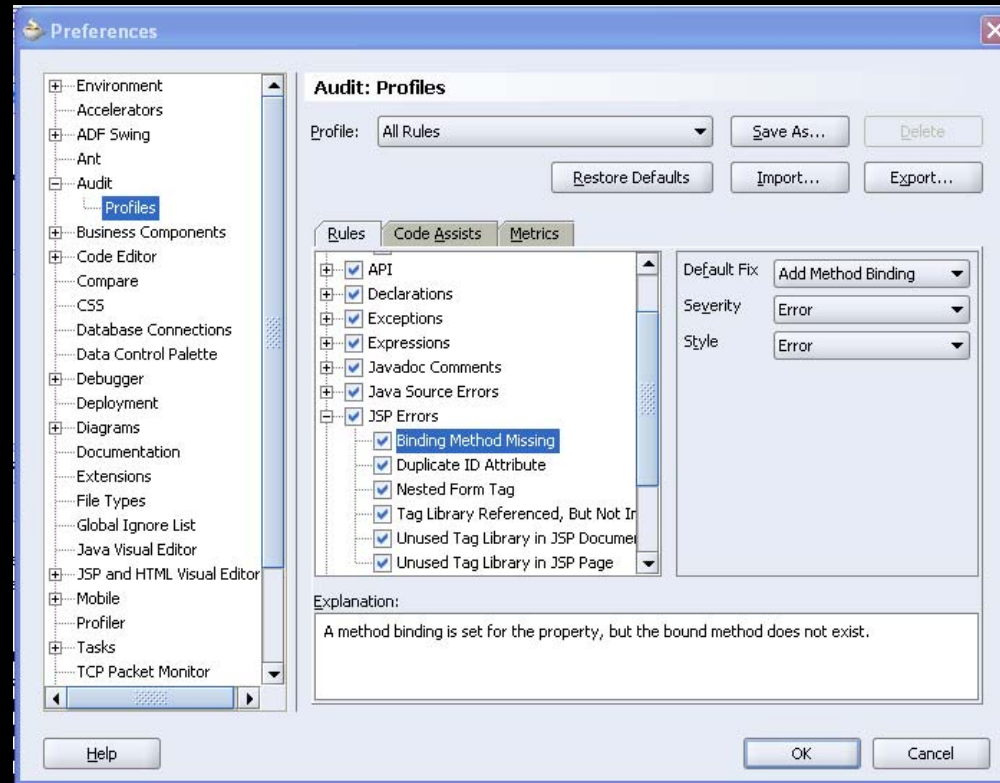
- Event Profiler
 - Measure the beginning, end, and duration of events
- Execution Profiler
 - Samples of execution; customizable intervals
- Memory Profilers
 - Snapshot of Java heap; customizable intervals
- SQL Explain Plan
 - Database statistics execution plan SQL

The screenshot displays the Oracle Performance Analyzer interface. The top window, titled "Events Table: Profiling: Run 8 profiler.jpr", shows a table of events with columns for Event, Comment, Position, Start, End, and Duration. The events include "Connecting to DB", "Selecting data", and "Nrm GC". To the right of the table is a Gantt chart showing the duration of these events on a timeline from 0 to 3.5. Below the events table is a window titled "HR" containing an SQL statement: `select * from employees where salary < 300 and first_name like '%joe%';`. Below the SQL statement is the "Explain Plan Results" table, which shows the execution plan for the query.

Operation	Optimizer	Cost	Cardinality	Bytes	Partition Start	Partitio
SQL SELECT STATEMENT	CHOOSE	2	1	62		
TABLE ACCESS(FULL) HR.EMPLOYEES	ANALYZED	2	1	62		

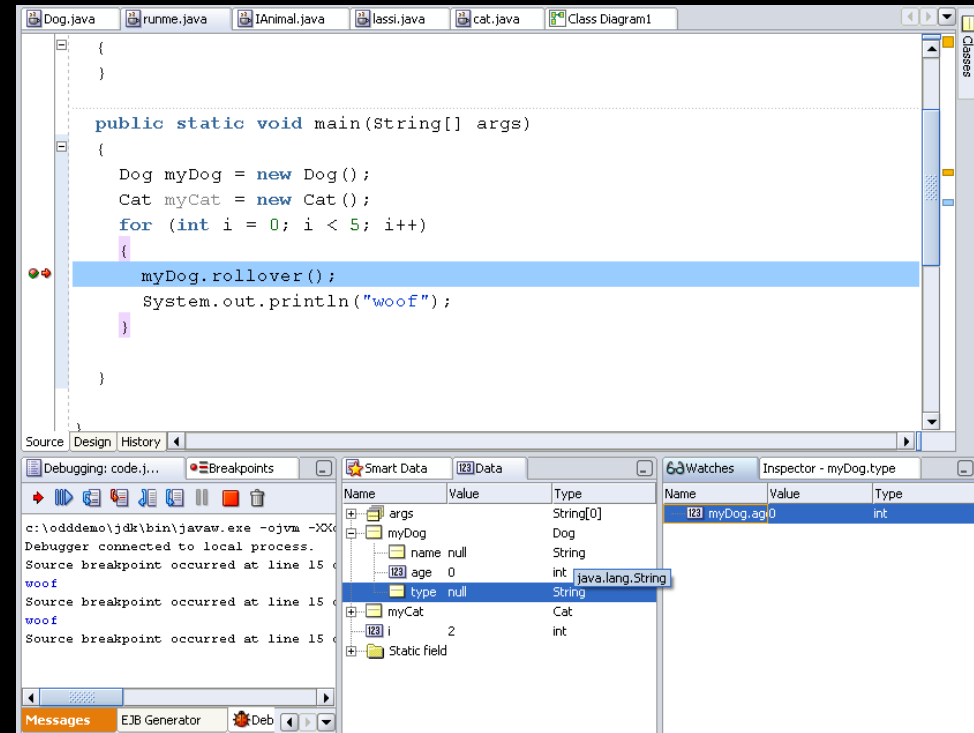
High Quality Code with Audit, Metrics and CodeCoach

- Code Audit
 - Customize compliance rules
 - Automatic fixes
 - Framework for writing rules
- Code Metrics
 - measures code complexity
- CodeCoach
 - Identifies (and fixes) common coding pitfalls



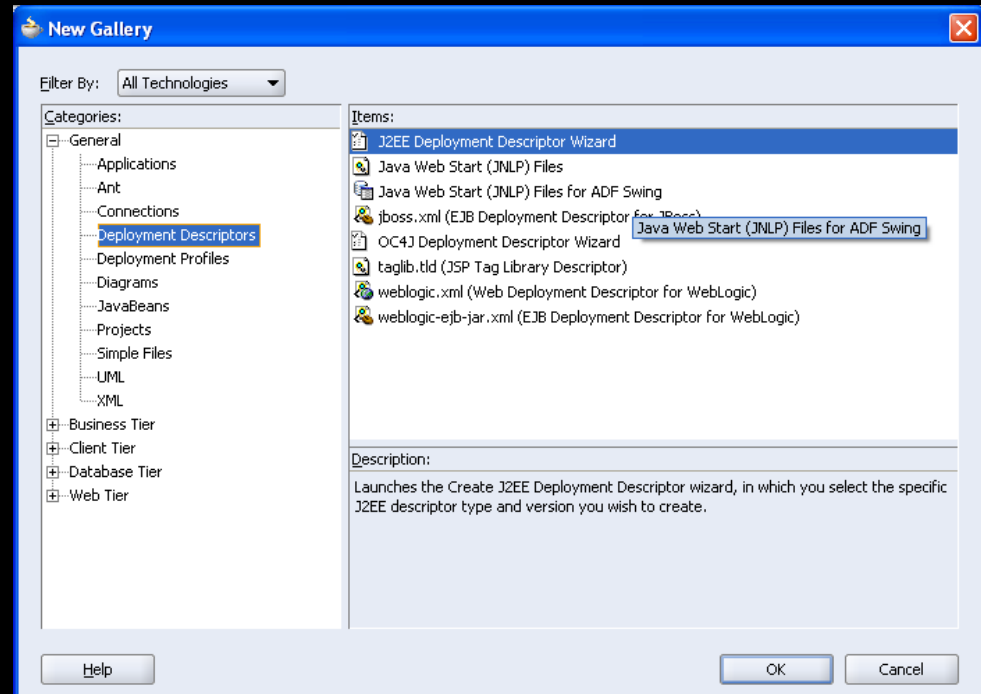
Debugging Code

- Local and Remote Debugging
- Fast & Innovative
- Hot Swap Debugging
- Memory Heap Examiner
- Innovative UI debugger
- PL/SQL Debugger



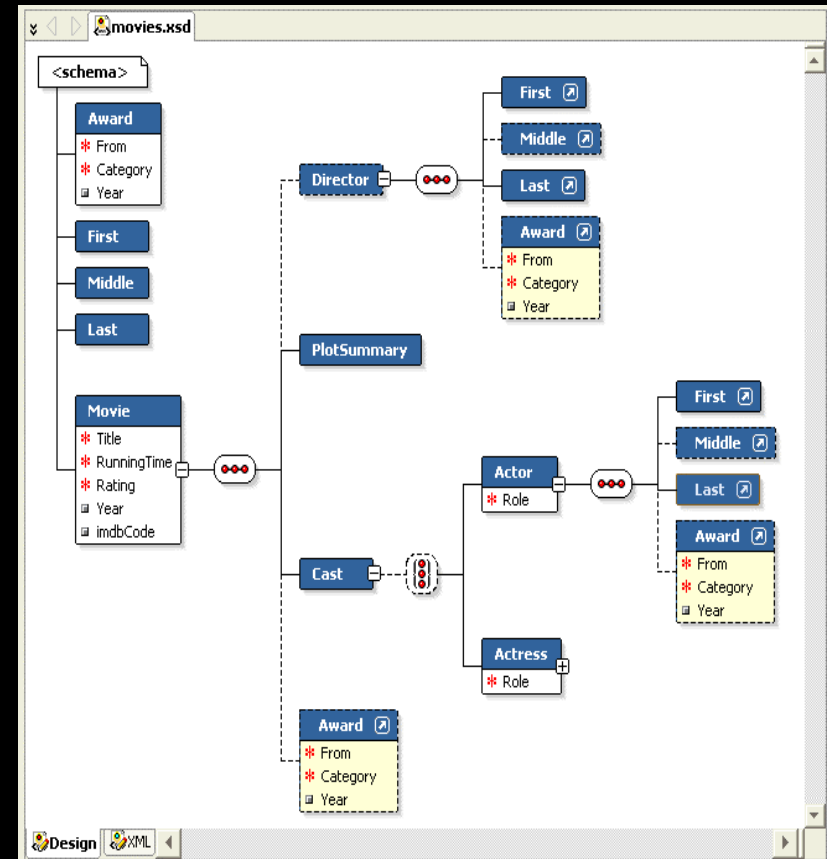
Deployment

- Packaging wizards
 - EAR, WAR, JAR
- One Click Deploy
 - Oracle, Tomcat, JBoss, BEA
- Ant Integration
- Embedded J2EE container
 - Testing and Debugging



XML Development

- Code editor with code-insight
- Visual schema modeler editor
- Debugging of XSLT transformations
- XQuery Support
- Integrated Oracle XDK for parsing, transformation and generation (XML \leftrightarrow Java, SQL \Rightarrow XML)
- Support for Oracle XML DB (XDB) for registering schemas and using XDB annotations



Database Development

- Schema Modeler
- Database Objects Creation
- Database Browser
- SQL Worksheet
- SQL Tuning
- PL/SQL Debugging
- Publish PL/SQL based Web Services

The screenshot displays the Oracle SQL Developer interface. The top pane shows a SQL query in the 'Enter SQL Statement:' field:

```
SELECT  
  e.LAST_NAME,  
  d.DEPARTMENT_NAME,  
  j.JOB_TITLE,  
  l.CITY,  
  c.COUNTRY_NAME,  
  r.REGION_NAME  
FROM  
  EMPLOYEES e, DEPARTMENTS d,  
  JOBS j, LOCATIONS l,  
  COUNTRIES c, REGIONS r  
WHERE  
  e.DEPARTMENT_ID = d.DEPARTMENT_ID  
  AND d.LOCATION_ID = l.LOCATION_ID  
  AND l.COUNTRY_ID = c.COUNTRY_ID  
  AND c.REGION_ID = r.REGION_ID  
  AND j.JOB_ID =
```

The bottom pane shows the 'Results:' table with the following data:

	FIRST_NAME	LAST_NAME
1	Steven	King
2	Neena	Kochhar
3	Lex	De Haan
4	Alexander	Hunold
5	Bruce	Ernst
6	David	Austin

The right pane shows the 'Sequences' folder with the following objects:

- AUDIT_ID_SEQ
- DEPARTMENTS_SEQ
- EMPLOYEES_SEQ
- EUL5_ID_SEQ
- LOCATIONS_SEQ

The 'Views' folder contains the 'EMP_DETAILS_VIEW' view. The 'Types' folder contains the 'EMP_REC' type. The 'Triggers' folder contains the 'SECURE_EMPLOYEES' and 'UPDATE_JOB_HISTORY' triggers. The 'Tables' folder contains the 'EMP_REC' table.

The bottom pane shows the 'EMPLOYEES' table with the following columns and data types:

- EMPLOYEE_ID : NUMBER(6, 0)
- FIRST_NAME : VARCHAR2(20)
- LAST_NAME : VARCHAR2(25)
- EMAIL : VARCHAR2(25)
- PHONE_NUMBER : VARCHAR2(20)
- HIRE_DATE : DATE
- JOB_ID : VARCHAR2(10)
- SALARY : NUMBER(8, 2)
- COMMISSION_PCT : NUMBER(2, 2)
- MANAGER_ID : NUMBER(6, 0)
- DEPARTMENT_ID : NUMBER(4, 0)

The bottom pane also shows the 'DEPARTMENTS' and 'JOBS' tables with their respective columns and data types:

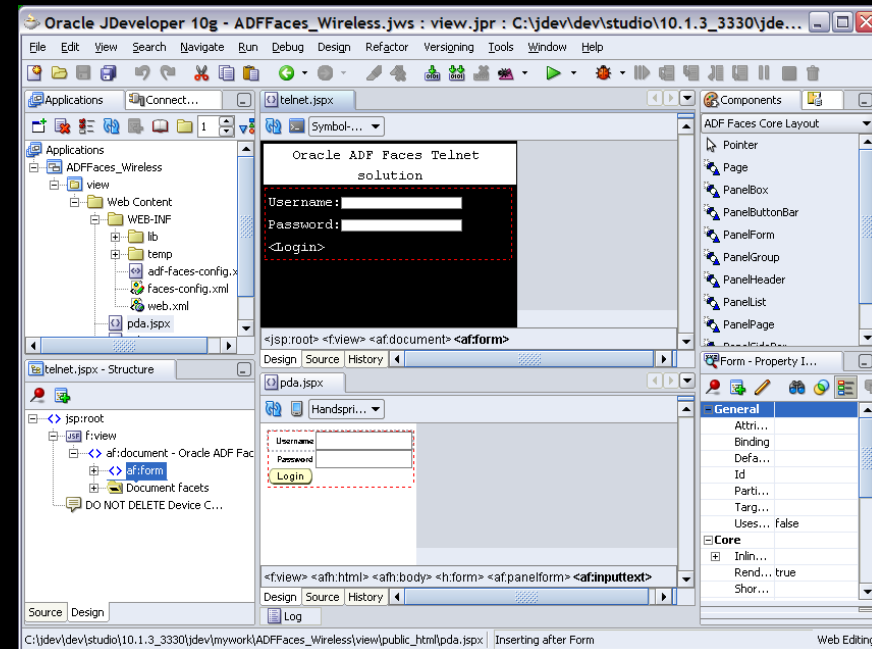
- DEPARTMENTS:** DEPARTMENT_ID : NUMBER(4, 0), DEPARTMENT_NAME : VARCHAR2(30), MANAGER_ID : NUMBER(6, 0), LOCATION_ID : NUMBER(4, 0)
- JOBS:** JOB_ID : VARCHAR2(10), JOB_TITLE : VARCHAR2(35), MIN_SALARY : NUMBER(6, 0), MAX_SALARY : NUMBER(6, 0)

The diagram shows the relationships between these tables:

- DEPARTMENTS (1) to EMPLOYEES (0..1)
- DEPARTMENTS (1) to JOBS (1)
- EMPLOYEES (0..1) to JOBS (1)

Wireless Development

- WYSIWYG editing for PDA and telnet applications
- Component filtering based on device classes
- Device-specific view port
- Capability-based content filtering wizard
- Mobile simulator registration and integration



Extending Oracle JDeveloper

Extending JDeveloper

- Open Extension SDK
- JSR-198 Reference Implementation
- Check-for-Updates – Easy Extension Install
- Oracle Provided Extensions
 - BPEL, Portal, Wireless etc...
- Many Partner and Open Source Extensions

BPEL Extension

- Build BPEL
- Orchestrate Web Services
- Drag and Drop
- Code Synchronization

The screenshot displays the Oracle JDeveloper 10g IDE interface for editing a BPEL process. The main workspace shows a diagram titled "Partner Links" with a "main" flow. A "receiveInput" activity is highlighted with a green border, and a "callbackClient" activity is connected to it. The "Component Palette" on the right lists various BPEL activities, and the "Properties" window shows the configuration for the selected "receiveInput" activity.

Property	Value
createInst...	True
joinCondition	
name	receiveInput
operation	initiate
partnerLink	client
variable	inputVariable

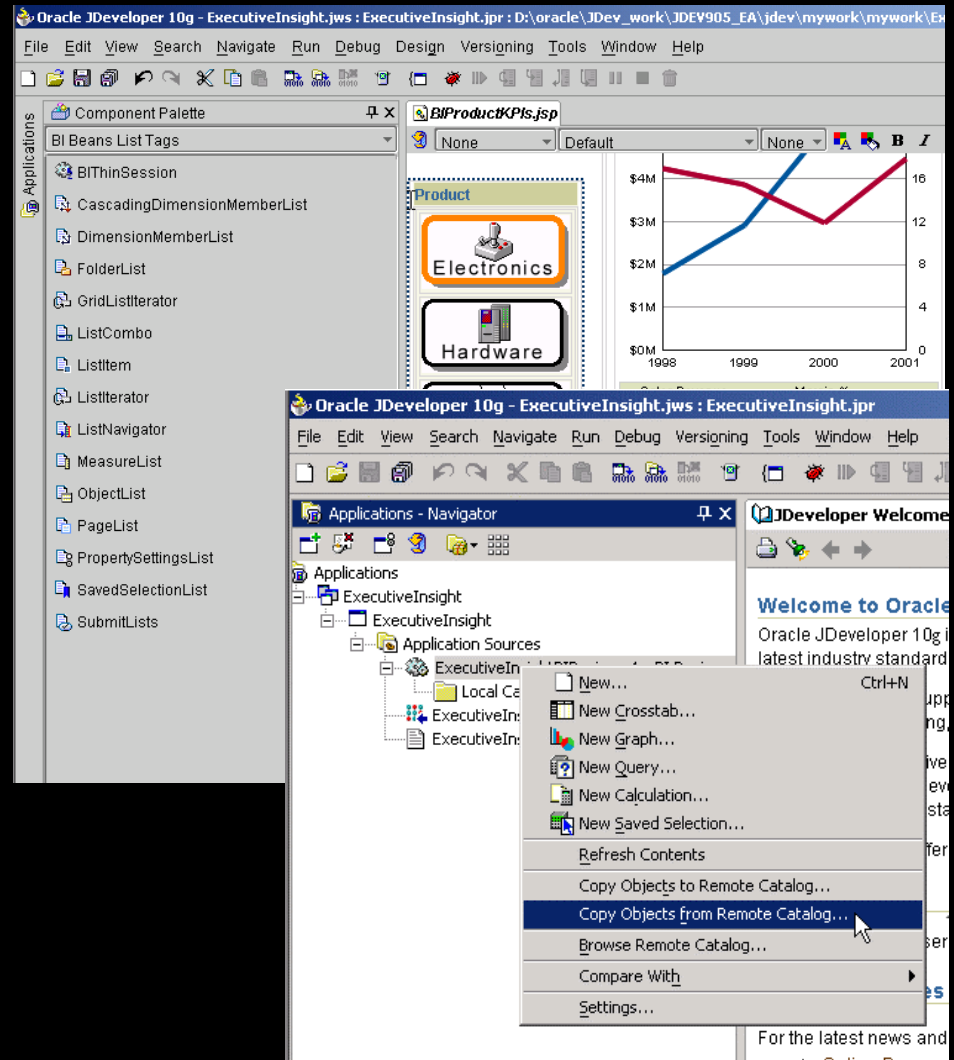
Diagram View | Source

Zoom: 100%

C:\OraBPELPM_1\integration\bpelpm\designer\jdev\mywork\Application1\BPELProcess1\BPELProcess1.bpel | Map file editing

BI/OLAP Extension

- Add BI Elements
 - Graphs
 - Queries
 - Calculations
 - Cross Tabs
- Connect to OLAP



PHP Extension

The screenshot displays the Oracle JDeveloper 10g IDE interface. The main window shows the source code for a PHP file named `eslookup.php`. The code includes comments for file name, description, and modification date, followed by PHP code that requires the `Smarty.class.php` and `oradboci8.php` files. A function named `connect` is defined, which attempts to connect to an Oracle database using `@OCILogon` and handles errors by displaying an error message and returning the connection status.

```
1 <?php
2
3 // NAME
4 //   eslookup.php
5 //
6 // DESCRIPTION
7 //   Lookup employee details by selecting a name from a dropdown list.
8 //
9 // MODIFIED   (MM/DD/YY)
10 //   cjones   01/18/04 - created
11
12 require('Smarty.class.php');
13 require('oradboci8.php');
14
15 // Connect
16 // Returns false and sets $e to the error message if connection fails
17 function connect(&$e)
18 {
19     ob_start();
20     $con = @OCILogon(ORA_CON_UN, ORA_CON_PW, ORA_CON_DB);
21     if (!$con) {
22         DisplayOCIErr();
23         $e = ob_get_contents();
24     }
25     ob_end_clean();
26     return($con);
27 }
28
```

The left pane shows the Applications Navigator with a tree view of the project structure, including 'Web Content' and 'Resources' folders. The bottom pane shows the 'eslookup.php - Structure' view, highlighting the 'Includes' section with files like 'Smarty.class.php' and 'oradboci8.php'. The right pane shows a 'PHP Statements' list with various PHP constructs like 'foreach', 'if', 'while', 'switch', 'function', 'class', 'vardump', 'functioncomment', 'filecomment', 'for', and 'dowhile'.

Extension Exchange

Extension Name	Description	Category	Author
RSS Reader *	Register and read any RSS feed directly inside Oracle JDeveloper. Get the latest JDeveloper news first.	RSS, News, Feed	Oracle Corporation
BI Beans Extension	Create graphs, query objects, and multi-dimensional data displays for your OLTP, OLAP and Business Intelligence applications..	BI Beans, OLAP	Oracle Corporation
Portal Extension	Create, test and deploy Java Portlets from within Oracle JDeveloper. This extension includes two wizards - Java Portlet & Oracle PDK Java Portlet.	portal, portlet, JSR 168, PDK	Oracle Corporation
HelpIDE Extension	Add help system to JDeveloper's project. You can create and edit help topics, TOC elements, Index, Glossary Terms, etc.	Help, Documentation	Elena Orlova
PHP Extension	Develop PHP applications inside JDeveloper with productivity enhancement features.	PHP, Scripting	Oracle Corporation
Template Maker *	Provides support for creating files based on Templates in Oracle JDeveloper.	Template, Files	Oracle Corporation
Variable Highlighter	Highlight variable's occurrences and provide easy navigation and renaming.	Variable Highlighter	Simeon Zverinski
JDeveloper Wireless Extension	Develop wireless applications such as: Online/Offline XForms Application, Multi-Channel applications for multiple delivery methods (voice, messaging, WAP, etc.), and J2ME applications including both regular J2ME MIDlets and MIDlets that can communicate with Web Services.	J2ME, Wireless, Phone	Oracle Corporation
Jalopy	Jalopy is an open source code formatter.	Formatter, Beautifier	Open Source
PMD-JDeveloper	PMD is a Java source code analysis tool - it checks your code for unused fields, empty try/catch/finally/while blocks, unused method parameters, and more.	Code	Open Source
JUnit Extension	Integrates JUnit code testing capabilities into Oracle JDeveloper.	JUnit, Testing	Open Source
ValueObjects Framework	A wizard-driven open-source Java framework that implements the Value Object (also known as Data Transfer Object) pattern for Web Services.	Web Services, SOAP, DTO	Zak Mandhro
Castor Extension	Uses Castor to generate Java Beans from XML Schemas, and imports the generated classes in your project under the specified package.	Castor, XML Schema	Andrea A. Gariboldi
Faces Console	With Faces Console you can visually edit JavaServer Faces configuration files as well as JSP Tag Library files.	JSF, Faces, JSP	James Holmes

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D E M O N S T R A T I O N

Introduction to Oracle JDeveloper 10.1.3

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JDeveloper Feedback



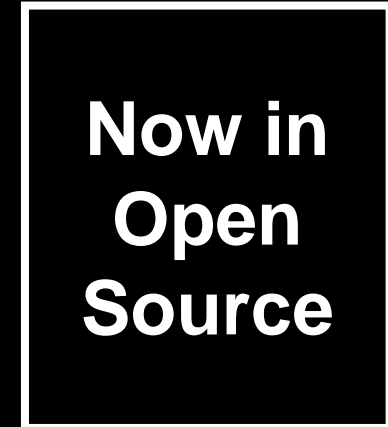
JavaOne Tools Announcements



Now Free!



**EJB 3.0 Editing
JSF Editing
BPEL Designer**



**MyFaces
contribution**

What Gartner says about free JDeveloper

- JDeveloper is a solid, feature-rich IDE that is nonetheless often overlooked by the larger Java development community
- This is part of a broader strategy designed to gain Oracle greater recognition as a service-oriented architecture (SOA) "supervendor" ...
- Enterprises looking for a full-featured, solid and supported Java IDE: Consider JDeveloper for an enterprise Java development toolset and Oracle Fusion Middleware for a complete SOA platform.
- Eclipse developers: Consider targeting the proven Oracle stack as your deployment platform.

Java Developer Journal

JDeveloper 10G - September 2004

“JDeveloper 10^g now joins the top Tools”

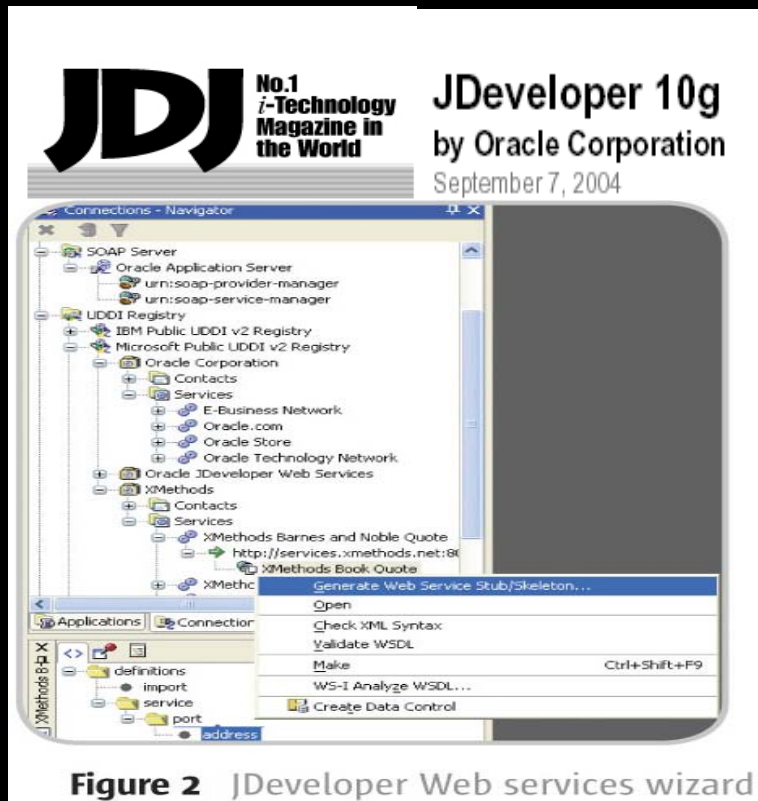


Figure 2 JDeveloper Web services wizard

"Oracle has impressed me with their database products and their latest Java IDE is no exception"

“Java continues to be a key component of Oracle's corporate strategy. Their commitment to JDeveloper is evident as 10g now joins the top IDE echelon.”

Other Magazines/Analysts

“By reducing complexity and automating development steps, JDeveloper 10g will help developers – even those with little experience with Java coding – build more enterprise-class J2EE software and Web services.”

Mark Driver Gartner Analysts Apr-04

“Developing apps visually on top of the ADF in JDeveloper is surprisingly simple.”

ADTMag, Aug-04

“Considered as a RAD tool for J2EE, this is the best I've seen”

Application Development Advisor, Aug-04

“JDeveloper 10g is more than just a Java IDE”

Java Boutique, Apr-04

Summary

- JDeveloper is a Java IDE and much more
- Completely Open
- Oracle ADF end-to-end productive J2EE framework

- Downloads, Tutorials, Discussion Forum and more on OTN:
<http://oracle.com/technology/jdev>

A large, stylized graphic of the letters 'Q' and 'A' in a dark grey, serif font. A large, bright red ampersand is superimposed over the center of the 'Q' and 'A'.

QUESTIONS
ANSWERS

ORACLE®