Is JDeveloper Ready for Prime Time?

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Agenda

- Survey
- Background
- Java
- BC4J
- JDeveloper 9i
  - What’s new?
  - Useful tips
Survey

◆ Who is using Oracle Developer
  ➢ 1-2 years
  ➢ 2-5 years
  ➢ 5-15 years

◆ Who is using Java now?
  ➢ 1-2 years
  ➢ 2-5 years
  ➢ 5-15 years

◆ Who has a need to move to Java now?
Oracle bought some code for Borland’s J-Builder in 1995.

JDeveloper 1.0
- More or less useless

JDeveloper 2.0
- Still useless

JDeveloper 3.0
- BC4J & DAC
- Finally the right idea!

JDeveloper 3.2
- Bug fixes

JDeveloper 9i
- Big rewrite
- Change in direction

Background
Where Does JDeveloper Fit?

◆ “There are only two products other than the database”
  ➢ Oracle 9i Application Server - the web server
  ➢ The development products
◆ JDeveloper has lots of market competition
  ➢ Visual Café - Symantec
  ➢ JBuilder

Background
JDeveloper in the Development World

◆ Weaknesses
  ➢ Not the perfect IDE
    ▪ Rated high but not the highest by PC Magazine (12/19/2000)
    ▪ Ease of use is livable; better in 9i
  ➢ It has no HTML layout editor

◆ Strengths
  ➢ All of the benefits of an IDE
  ➢ It’s an Oracle product.
  ➢ Extensible - wizards, property inspectors (customizers), toolbars, code generators
  ➢ Excellent Oracle database connectivity
  ➢ Supports all Java development

Background
JDeveloper’s Long-Term Vision

- A fully integrated design and development environment
- Full UML integration
- The vision of what Designer and Developer never fully achieved
- Probably never integrate into Designer….maybe
Where JDeveloper fits today

- Good tool to build Java applications
- Best tool for building Oracle-based Java applications
- “Part” of the solution for building JSPs
Is JDeveloper ready for production use?

- Client/Server style application development
  - Yes (but it will take time)
- Web development
  - Probably (but it will take a LONG time)
- There was one person at ODTUG who seemed to be building simple systems successfully with JDeveloper and BC4J.
Is Java all you need to deploy on the Web?

◆ NO!!!!
◆ Java Deployment
  ➢ JSP - Web
  ➢ Applet – Web internal
  ➢ Applications - CIS
◆ Each alternative requires different tools and languages

Why use Java?
Moving to a Java-Based Development Environment

◆ Don’t abandon your old development environment immediately.
  ➢ Java is still bleeding-edge technology.

◆ Java alone is not enough.
  ➢ You still need to know HTML, JavaScript, and other editors (FrontPage, Dreamweaver)
Java Applications

- Client-server
- Java program runs on PCs JVM

### Required Tools
- JDeveloper

### Required Languages
- Java
- XML
- JDBC
- SQLJ
Java Applets

Java applications running over a browser

<table>
<thead>
<tr>
<th>Required Tools</th>
<th>Required Languages</th>
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<td>JDeveloper</td>
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<td>Secure Sockets</td>
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Deploying in Java
JSPs

- Sell over the Internet
- Java back end, HTML front end

### Required Tools
- JDeveloper
- Apache or IAS
- DreamWeaver or FrontPage

### Required Languages
- Java
- HTML
- JavaScript
- XML, JDBC, SQLJ

### Other problems - Security
- Firewalls
- Secure Sockets

Deploying in Java
For PL/SQL programmers wanting to move to Java, there are some important conceptual differences to understand.

Learning Java is more than just learning a new syntax.

You need to take an object-oriented approach.
JDeveloper – What is it?

- Primarily a Java development environment
- Limited JSP support
- Main differentiation point – Business Components for Java (BC4J)
JDeveloper – Java Application

Workspace

- Connection
- BC4J Project
- UI Project
Workspace

- BC4J project
  - Entities and associations
  - Views and view links
  - Module

- UI Project
  - Class .java
    - Items
  - Client data model .cpx

- Connection
- Can have many open at once (in 9i not 3.2)
- Logical grouping of … files
- Physically a file with names and locations of other files .jws
- 1 workspace per application (or logical portion of)
Projects

- Logical grouping of … stuff
- Physically - a file with pointers (.jpr)
- Lives in one package (directory)
- Usually at least 2 in an application:
  - BC4J
  - UI or JSP
Packages

◆ Same as directory

◆ Everything has to go into a package:
  - Workspace
  - Project
  - Class

◆ If you don’t put everything in the same package, refer to objects in other packages as package_name.object_name
BC4J - Overview

- Main advantage over other development tools
- Primary way of handling database DML operations
- Overcomes hurdle of complex database interface to handle web-based applications
- BC4J features:
  - Builds a set of Java classes that wrap the DML commands and reference an XML document that stores the data structure
  - Classes make JDBC calls to the database to take over insert, update, delete and lock functions.
BC4J - Advantages

- BC4J classes can implement complex validation
  - Need to think carefully about whether this is the appropriate place for this function
- Reduced development time
- Can cache data to be shared among multiple users
  - Allows for tuning capabilities
BC4J Files

- XML – redundantly stores data structure of relational database
- Java classes – contain complex logic and application calls used by other parts of application
- Java library – provided by Oracle to handle JDBC generation
BC4J Structure

- Developers only need to think in terms of logical objects
- Manipulate Java classes only where complex validation or coding not handled by the wizards is required
- Conceptually divide application into 2 parts:
  - User interface and client logic
  - Database interface and business logic
How BC4J Works

◆ Wizards generate XML files that define data structure
  ➢ All file manipulation should be handled using the wizards

◆ Wizards generate Java classes to control what happens to the data

◆ Portable interface to database
  ➢ Can add validation and business rules
BC4J Capabilities

- Several options for placement of complex validation
  - Database tier (may impact performance)
  - Middle tier (application or web server)
  - Locally in the client (faster performance, easier debugging and maintenance if code not duplicated elsewhere)

- Factors to help determine placement
  - Hardware configuration
  - Deployment strategy
  - Number of and types of clients
  - Ease of debugging and maintenance
What’s New in JDeveloper 9i?
Thanks to Peter Koletzke for some of this

Oracle9i JDeveloper
Version 5.0.581
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What’s new?
Now 100% Java

- Slightly slower IDE
- Some compilation is faster.
- All in all – a little slower

What’s new?
New File Structure

My Work

Workspace 1

Project 1
  SRC
  Class G

Project 2
  SRC
  Class G

Useful tips
What’s new?
JDeveloper Activity Modeler

- Swim lanes and activities
- Vaguely familiar if you know Designer

What’s new?
Software Configuration Management

- Linked to the Oracle SCM Repository
  - Formerly known as “Designer Repository”
  - Same engine as Designer 6i
- Use for version control and configuration management
  - Check-in and Check-Out
  - Compare
  - Merge
  - In the menu and navigator

What’s new?
New BC4J Features

- Synchronization with the database
- Bi-directional view links and many-to-many view links
- Create a view object based on a programmatic source
- Support for VARRAY and nested tables
- Design time support for mapping an attribute to a database sequence
Java Applications and Applets

- Called Java Client or JClient
- No DAC
  - Beta does not include support for Data Aware Controls
  - Backwards compatibility-only for DAC in production
- MVC instead
  - Bind Swing controls to BC4J
    - No DAC needed

What’s new?
◆ Code Insight for JSP files
  ➢ Auto fill-in of names and arguments
  ➢ Color coding in the editor
◆ Hierarchical view of JSP and HTML
  ➢ Appears in the Structure Pane
  ➢ Lists errors as well
◆ Expanded tag library
Connections

- Database – same as in version 3.2
- AppServer – 9i App Server
- Repository – for Configuration Management

What’s new?

Haven’t tried them yet
Workspaces (applications)

- Many can be open at once.
- Close = Remove from IDE
- Open = Find the file
- Seems silly
  - It’s a beta.

What’s new?
Nicer BC4J Tester

What’s new?
Learning JDeveloper

◆ Much of the user interface has changed.
◆ It is easy for me to see the changes, but…
◆ I would recommend starting with 3.2, doing the tutorials from the book and then upgrade:
  Ø JDeveloper 3 Handbook (Dorsey & Koletzke) Oracle Press, 2001
  or
◆ Wait for us to finish the revised edition.

What’s new?
7 things I wish I had known when I started

- 1. The BC4J Wizard works great with Scott/Tiger.
  - Build each component separately
More things...

2. Sequence-generated primary key
3. How to talk to the database (Usually no need for SQLJ)

- Acts like execute immediate
- Outside of BC4J
  ```java
  SessionInfo1.getDBAccess().getTransaction().
  executeCommand("begin place code here; end;");
  ```

- Inside BC4J
  ```java
  getTransaction().executeCommand("begin place code here; end;");
  ```

Useful tips
More things…

- **4) Deployment**
  - Deploy subprojects first
  - Point main application to subprojects
- **5) Code obfuscation fails if you have wrappers around PL/SQL packages.**
More things...

6) Don’t rename objects after they are created in BC4J
   - Entities
   - Views
   - Associations
   - ...
   - Code doesn’t clean up correctly

7) Use JDK 1.3.1 or more recent version.
   - Earlier versions have bad memory leaks.

Useful tips
More Information on JDev 9i

◆ otn.oracle.com
  ➢ Still in beta
  ➢ Products area
  ➢ The discussion forums are quite active.
  ➢ This is the only resource so far.

Useful tips
So, is JDev ready for prime time?

- For Java applications
  - Probably - but it will take some effort
- For JSPs
  - Possibly - but you are going to need to be very smart
  - …or very patient
- As a replacement for Designer (the grand vision)
  - No way
Contact Information

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Coming in Spring 2002 – Oracle 9i JDeveloper Handbook