Rapid Development of Web Applications with HTML DB

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Presented By:
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Technical Advantage Associates
• Overview
• Components and Features
• Creating a New Application
• Adding Page Components
• Types of Systems
• Q & A
HTML DB
Overview
What is HTML DB?

- A RAD tool for developing web apps in a browser-based, declarative manner with wizards
- An application stored as meta-data and rendered at run-time
- Dynamically generated HTML that is fast!
- PL/SQL - No Java
- Allows you to perform any task that you can accomplish in SQL or PL/SQL
- Web-based team development environment
HTML DB’s History

- Concepts based on WebDB
- Developed as underlying technology for Oracle Web Calendar (1999)
- In 2000, Larry Ellison gave his blessing to continue but he wanted a hosted service
- First launched as service in June, 2002 under the name “Project Marvel”
- Decision to productize came in Sept., 2002
- On 1/31/2004, HTML DB became a support component of Oracle 10g and 9iR2
Installation vs. Hosted Service

• Oracle provides a hosted HTML DB service at at htmldb.oracle.com where you can apply for a free account.

• You can also download and install locally
  – Run the installation script on any 9.2.0.3 or better database. Also requires Apache listener.
  – Export / Import applications from hosted service to your local system.

• Included as part of the Oracle 10g Release.

• Excellent support via OTN discussion forum (http://otn.oracle.com/products/database/htmlldb/index.html).
Download from htmldb.oracle.com

- Uses an Apache server with mod_plsql. Requires configuration of a DAD
- Can also use:
  - 9iAS (mod_plsql is standard)
  - OC4J (requires mod_plsql from DBPrism) [Link](http://www.dbprism.com.ar/dbprism/doc/docs/OC4J.html)
- Requires 9.2.0.3 of the database or higher
- Excellent installation guide included
When to Use HTML DB

- You are, or have developers who are, skilled in SQL and PL/SQL
- Your application is database-centric
- Your application can be developed using a hosted service
- You are comfortable with a declarative/4GL programming model
- You want to migrate an Access / Excel application to Oracle
- You have a web application to develop
Components and Features
Main Components

• SQL Workshop
  – Interact with your database as with SQL*Plus, but visual
  – Data dictionary and object browsing, query by example

• Data Workshop
  – Load and extract data from the database
  – Turn a spreadsheet into a table in a few seconds

• Application Builder
  – Centerpiece of HTML DB
  – Loaded with wizards
  – Reports, forms and charts
  – Connect pages using branches
  – 75 pre-defined widgets
  – Basic HTML, pop-up lists, calendars, etc.
  – Full data entry validation
Welcome to HTML DB

With HTML DB you can build database-centric HTML Web applications. Use the Builder to construct pages that will constitute your application. Use the SQL Workshop and the Data Workshop to run SQL and add data.

Application Builder  SQL Workshop  Data Workshop  Administration
Application Builder

An application is a collection of pages that share a common session state definition and authentication method.

To locate a specific application, make a selection from the available application list and click Go.

To edit a specific page, enter the page ID in the Edit Page field and click Go, or click the page name.

Tasks
- Manage Developers
- Monitor Activity
- Review Demonstrations
- Change Password
- Extend this Application
- Delete this Application
More Features

• Session and State Management
  – Each user has a session
  – Valid username/password is required

• User Interface Control
  – Look-and-feel is separate from application logic
  – Extensive templates at a variety of levels

• Flexible Authentication and Authorization Schemes
  – Can use pre-built / built-in methods or custom

• Extensive Navigation Control
  – Tabs
  – Links
  – Menus

• File upload/download
• Email integration
Creating a New Application
Application Creation Options
Naming the Application

Create Application

- Name: Issue Tracking
- Alias: Issue Tracking
- Application: 11373
- Authentication: HTML DB Authentication
- Default Parsing Schema: TAA

Globalization Options

- Language: English (United States) (en-us)
- User Language Preference Derived From: Use Application Primary Language
Tab and Page Options
Name the Pages

User: WRDJOCK@EARTHLINK.NET

HTML DB Home > Builder - Application > Create Application > Create Application Wizard

Create Application Wizard

Page Page Name
1 Home
2 Projects
3 Issues
4 Code Tables
5 Reports
Select a UI Template
The New Application

Application created.

Available Applications: 11373 Issue Tracking

Current Application: 11373
Updated: 06/17/2004 02:04:34 AM
Authentication: SCHEME
Alias: 11373
Owner: TAA
Template: Olive 1 level tabs

Run Create Application Edit Attributes Export / Import

Edit Page: 1
View Mode: List

page list:
1. Home
2. Projects
3. Issues
4. Code Tables
5. Reports
6. Login

page count: 6
A Quick Application
A Complete, Generated App
Adding Page Components
Every Page has “3” Components

- Page Rendering
  - Page
  - Regions
  - Buttons
  - Items
  - Computations
  - Processes

- Page Processing
  - Computations
  - Validations
  - Processes
  - Branching

- Shared Components
  - Part of all Pages
### Editing a Page

#### Page Rendering

| Page | Title: Report Page  
| Name: Report Page  
| Alias:  
| Template: SimpleTabs with breadcrumbs  
| Std. Tab Set: TS1  
| Build Option:  
| Authorization: Required |

#### Regions

- **Display Point: Page Template Body (3)**
  - Q: People (10)
  - M: BreadCrumbs2 (1)

#### Buttons

- **Region: People**
  - 10: RESET
  - 20: CREATE
  - Item: P2_620_ge.gif

#### Items

- **Region: People**
  - 10: P2_CHART_FILTER Hidden
  - 10: P2_VALUE Hidden
  - 20: P2_REPORT_SEARCH Text Field (always submit page when Enter pressed)
  - 30: P2_CGC Button

#### Computations

- Page "2" has no onSubmit computations.

#### Processes

- Page "2" has no onUnload processes.

#### Page Processing

<table>
<thead>
<tr>
<th>Computations</th>
<th>Create</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page &quot;2&quot; has no onUnload computations.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Validations</th>
<th>Create</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page &quot;2&quot; has no validations.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Processes</th>
<th>Create</th>
</tr>
</thead>
</table>
| After: Submit  
| 1: reset pagination  
| 1: clear cache |

<table>
<thead>
<tr>
<th>Branching</th>
<th>Create</th>
</tr>
</thead>
</table>
| After: Processing  
| 10: Redirect To Page 2 |

#### Shared Components

<table>
<thead>
<tr>
<th>Parent Tabs</th>
<th>Create</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tab Set: Page 2 has no parent level tabs.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard Tabs</th>
<th>View</th>
</tr>
</thead>
</table>
| Tab Set: TS1  
| Home |

<table>
<thead>
<tr>
<th>Lists of Values</th>
<th>View</th>
</tr>
</thead>
<tbody>
<tr>
<td>No shared lists of values used.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Templates</th>
<th>View</th>
</tr>
</thead>
</table>
| Region: Portal  
| Label: FormField_NotRequired  
| Button: Einstein Normal  
| Menu: breadCrumbs No templates used. |

<table>
<thead>
<tr>
<th>Navigation Bar</th>
<th>View</th>
</tr>
</thead>
</table>
| Logout  
| Help |
Wizards save time
(Click Report with Links...)

<table>
<thead>
<tr>
<th>Reports</th>
<th>Calendar</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Easy Report</td>
<td>• Monthly</td>
</tr>
<tr>
<td>• SQL Report</td>
<td>Calendar</td>
</tr>
<tr>
<td>• Report with links to form on a</td>
<td></td>
</tr>
<tr>
<td>table (2 Pages)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Charts</th>
<th>Wizard</th>
</tr>
</thead>
<tbody>
<tr>
<td>• HTML Chart</td>
<td>• Simple</td>
</tr>
<tr>
<td>• SVG Chart</td>
<td>Wizard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Forms</th>
<th>Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Form on a Table or View</td>
<td>• Tree</td>
</tr>
<tr>
<td>• Form on a Procedure</td>
<td></td>
</tr>
<tr>
<td>• Form on a SQL Query</td>
<td></td>
</tr>
<tr>
<td>• Form on a Table with Report, 2</td>
<td></td>
</tr>
<tr>
<td>Pages</td>
<td></td>
</tr>
<tr>
<td>• Summary Page</td>
<td></td>
</tr>
<tr>
<td>• Tabular Form</td>
<td></td>
</tr>
</tbody>
</table>

Wizards

The following wizards build complete page(s). These wizards are one-time generators. The wizards generate multiple attributes, for example a report wizard generates one page, one region, and multiple buttons. After generation page attributes can be customized to your exact needs.
Query and Update Wizard

Table / View Owner
Table / View Name
Report Page and Region Attributes
Report Tab (optional)
Report Columns
Report Edit Link
Form Page and Region Attributes
Form Tab (optional)
Primary Key
Form Columns
Process Options
Confirm
Done
Select the Report Columns

Table Name: PROJECTS

* Select Column(s)
1. PROJECT_ID (Number)
2. PROJECT_TITLE (Varchar2)
3. DESCRIPTION (Varchar2)
4. PROJECTED_COST (Number)
5. REQUESTED_BY (Varchar2)
6. NEEDED_BY (Date)
7. TECHNOLOGIES (Varchar2)
8. NUM_DEVELOPERS (Number)
9. NUM_DBAS (Number)
10. STATUS (Varchar2)

Optional WHERE clause

```
start_date > trunc(sysdate) - 90
```
Choose edit button style
Select the Form for creating and editing records
Identify the primary key and columns

---

**Identify Primary Key**

- **Form Page:** 7
- **Owner:** TAA
- **Table Name:** PROJECTS
- **Primary Key:** PROJECT_ID

**Primary Key Columns:**
- Select Primary Key 2 -

1. PROJECT_ID
2. PROJECT_TITLE
3. DESCRIPTION
4. PROJECTED_COST
5. REQUESTED_BY
6. NEEDED_BY
7. TECHNOLOGIES
8. NUM_DEVELOPERS
9. NUM_DBAS
10. STATUS
11. START_DATE

---

**Identify Columns for Form**

- **Page:** 7
- **Owner:** TAA
- **Table Name:** PROJECTS

**Select Column(s):**
- PROJECT_TITLE (VARCHAR2)
- DESCRIPTION (VARCHAR2)
- PROJECTED_COST (NUMBER)
- REQUESTED_BY (VARCHAR2)
- NEEDED_BY (DATE)
- TECHNOLOGIES (VARCHAR2)
- NUM_DEVELOPERS (NUMBER)
- NUM_DBAS (NUMBER)
- STATUS (VARCHAR2)
- START_DATE (DATE)
I chose to disable the delete button, but alternatively I could have made that button conditional (e.g. for administrators only)
Confirm and Finish

Report page 2 exists, report region added.

Success

- The query and update report has been created successfully.

- Run Page

- Edit Page

- Do not show success page in the future
Report and Edit Pages

<table>
<thead>
<tr>
<th>Edit</th>
<th>Project Title</th>
<th>Projected Cost</th>
<th>Requested By</th>
<th>Num Developers</th>
<th>Num Dbas</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edit</td>
<td>Standard Addresses</td>
<td>92000</td>
<td>James Johnson</td>
<td>2</td>
<td>1</td>
<td>Pending</td>
</tr>
<tr>
<td>Edit</td>
<td>Product Catalog</td>
<td>750000</td>
<td>Frank Zabriniski</td>
<td>5</td>
<td>2</td>
<td>Pending</td>
</tr>
</tbody>
</table>

Click on the Edit link in the Report to modify the data.
Types of Systems
Types of Systems

- Select Journal Article review system (developed in 2 weeks) - used by SELECT editors and reviewers
- Web Collaboration application (developed in 2 days)
- Oracle internal and external applications:
  - AskTom (http://asktom.oracle.com)
  - Developer Trends (http://devtrends.oracle.com)
  - HTML DB hosted site (http://htmldb.oracle.com)
- Chicago Police Dept Property Tracking system
- Systems for International Society of Infectious Disease
Web Collaboration Application

Concept

Name: Promotional Give-Aways

Description: Build Sales of custom promotional give-aways. Jingle Buddies Promo-Special Markets is already working with the Cubs organization. Expand this idea to other organizations.

Rating: Good

Ideas

Build Sales of custom promotional give-aways. Jingle Buddies Promo-Special Markets is already working with the Cubs organization. Expand this idea to other organizations.

Pros

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Since this is something we can do and can do well it presents a great opportunity for us to do more of it to build sales. We have the core competencies to do this. There is tremendous potential in the premium business. We need a dedicated sales team to make great strides in it though.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USERNAME</th>
<th>SUBMITTED_DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>JZAPF</td>
<td>19-JUN-03</td>
</tr>
<tr>
<td>JACHESON</td>
<td>20-JUN-03</td>
</tr>
</tbody>
</table>

Cons

Comments

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>This promotional effort not only builds sales but more importantly builds brand and company awareness with the consumer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USERNAME</th>
<th>SUBMITTED_DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPLISZ</td>
<td>18-JUN-03</td>
</tr>
<tr>
<td>Hit</td>
<td>Subject</td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
</tr>
<tr>
<td>1</td>
<td>Backup and Recovery</td>
</tr>
<tr>
<td>2</td>
<td>Performance comparison between SQL and PL/SQL stored procedures</td>
</tr>
<tr>
<td>3</td>
<td>Mized size of packages causes inefficiency?</td>
</tr>
<tr>
<td>4</td>
<td>Explain Plan</td>
</tr>
<tr>
<td>5</td>
<td>Confusion in the interpretation of V$LIBRARYCACHE columns</td>
</tr>
<tr>
<td>6</td>
<td>Analytical Functions</td>
</tr>
<tr>
<td>7</td>
<td>Retrieve duplicate values of a field in a table......</td>
</tr>
<tr>
<td>8</td>
<td>Login.sql and partitions nad &amp; &amp;&amp;</td>
</tr>
<tr>
<td>9</td>
<td>Calculating an exact percentile value in B</td>
</tr>
<tr>
<td>10</td>
<td>how to extract BLOB data back out again</td>
</tr>
</tbody>
</table>

Messages...

» I've updated the documentation links (finally) in the Q&A's if you find a dead link to technet documentation -- please take a second to put a "review" on that page -- i might have missed a couple of "mappings". If so, I have a quick update routine for it now and can fix them. Just let me know.
Infectious Disease Institute

Today on ProMED-mail

March 24, 2004
No Reports yet today.

March 23, 2004
PRO/AH> Avian influenza, poultry vaccines (07)
PRO/AH/EDR> Avian influenza, H7, poultry - Canada (BC)(06)
PRO/EDR> Legionellosis, hotel - USA (TX ex OK)
PRO> Salmonella strains - RFI
PRO/AH/EDR> Rabies, raccoon - USA (NC)(02)
PRO/AH> BSE, bovine - USA (WA)(18)
PRO/AH> Chronic wasting disease, cervids - USA (IL)(03)
PRO/EDR> Burkholderia cepacia, nasal spray - USA: recall
PRO/AH/EDR> Dolphin die-off - USA (FL)(03): Domoic acid
PRO/AH/EDR> Avian influenza, human - East Asia (34)
PRO/AH> Avian influenza - Netherlands (06)

Postings from last 30 days...

Latest Information on Avian influenza
23-MAR-2004 / Avian influenza, poultry vaccines (07)
23-MAR-2004 / Avian influenza, H7, poultry - Canada (BC)(06)
23-MAR-2004 / Avian influenza, human - East Asia (34)
23-MAR-2004 / Avian influenza - Netherlands (06)
22-MAR-2004 / Avian influenza - Eastern Asia (55)

More...

Latest Information on Severe Acute Respiratory Syndrome (SARS)
25-FEB-2004 / Calendar 2004 (02): Intl. Conf. on SARS
12-FEB-2004 / SARS - worldwide (14): travel advice
Summary

- Powerful new technology
- Relatively easy to use
- Fast
  - Development time (RAD tool)
  - Speed of deployed applications
- Secure
- Really works
- Hosted Service or Locally Installed
Where to Go for More Information

- htmldb.oracle.com
- metalink.oracle.com
- technet.oracle.com
- ODTUG Technical Journal
- The TUSC Website (www.tusc.com)
- My blog (radio.weblogs.com/013334)

“The Oracle HTML DB Handbook” by Jeff Bernknopf and Brad Brown (Oracle Press) - Available later this year
Special Thanks To…

• My co-author Brad Brown and his team at TUSC, especially Larry Linnemeyer
• Tony Jedlinski (Roman Inc. and Editor of SELECT) for his contributions to the presentation and getting me excited about HTML DB in the first place
• Michael Hichwa and his HTML DB Team
• Lisa McClain and the people at Oracle Press

If you have any questions or comments about HTML DB, you can contact me at:

jeff_taa@earthlink.net
Questions and Answers