Intro to PSP, JSP, and XML

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About Dan Hotka:

Dan Hotka has over 24 years in the computer industry and over 19 years experience with Oracle products. He is an internationally recognized Oracle expert with Oracle experience dating back to the Oracle V4.0 days. His current book, The TOAD Handbook by SAMS is now available on www.amazon.com. He has authored the books Oracle9i Development By Example and Oracle8i from Scratch by Que and has co-authored the popular books Oracle Unleashed, Oracle8 Server Unleashed, Oracle Development Unleashed by SAMS and Special Edition using Oracle8i by Que, is frequently published in Oracle Professional, the monthly trade journal, by Pinnacle Publications, and regularly speaks at Oracle conferences and user groups around the world. Visit his website at www.DanHotka.com. Dan can be reached at dhotka@earthlink.net.
Dan is a Training Consultant

- www.DanHotka.com
  2-day Hands-on Workshops
  - SQL Tuning and Troubleshooting
  - Oracle/Unix Scripting Techniques
  - Oracle9i New Features
  - Power User Courses:
    - Intro to SQL & SQL*Plus
    - Intro to PL/SQL

- New speaking Topic:
  - 25 Years of Taking Care of Business:
    - A humorous look at technology, the workplace, progress, winners & losers
Agenda

- Introduction to book web site
- A Little Oracle History
- Creating PL/SQL Pages (PSP)
- Creating Java Pages (JSP)
- Simple XML Wireless Example
About this PPT

- Examples are excerpts from my book:
  - Oracle9i Development by Example, Chapter 11
  - All Rights Reserved: Que Publishing

- Examples are on website:
  - www.quepublishing.com
    - Search on ‘0789726718’ or by author ‘Hotka’
    - www.DanHotka.com
A Little Oracle History

- **Oracle4**
  - Performance, size, backup & recovery
  - Assist with development
  - Fastforms, RPT

- **Oracle5**
  - Client/Server, SQL*Net, Tuning, Auditing
  - SQL*Forms V2.0, 2.3
  - SQL*Reports
A Little Oracle History

- **Oracle6**
  - Parallel Server, VLDB, Ora Apps (ie: Email), PL/SQL, Database Triggers
- **SQL*ReportWriter**
- **SQL*Forms v3.0**
- **Glue**
A Little Oracle History

- **Oracle7**
  - RI, Replication, Rman & OEM, Cost based optimizer, various new index & servers
  - SQL*Forms V4.0, 4.5

- **Oracle8**
  - Partitioning, more index options
  - Forms & Reports v6.0

- **Oracle8i**
  - iFS, Java, etc.
A Little Oracle History

✈ Oracle9i

  - Many new features
    • List Partitioning
    • Flashback queries
    • Multiple block size
  - Forms & Reports 6i
  - XML
PL/SQL Pages

- Build static HTML with about any generator
- Easily add PL/SQL tags to make page dynamic
Metro Motors Web Site

Description: 1990 Camry Deluxe

Suggested Price: $10,000.00

Buy This Car
PL/SQL Pages

Metro Motors Web Site - Make an offer

Description: 1990 Camry Deluxe

Buyer Name: Gary Andersen
Buyer Phone: 573-6828

Offer: $9998.00

Place Offer

Browse Inventory
create table st_cars_for_sale
(
    inv_id     Number,
    auto_description VARCHAR2(60),
    sale_amt    number,
    sale_photo_location VARCHAR2(50),
    buyer_name  VARCHAR2(20),
    buyer_phone VARCHAR2(10),
    buyer_offer number,
    buyer_date  date
);

Show Get_Car Procedure
<html>
<head>
<title>Metro Motors</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/>
</head>
<body bgcolor="#CCCCCC" text="#990000">
<p><img src="/mmimage/logo.gif" width="150" height="100" align="middle"/>
</p>
<b><font face="Geneva, Arial, Helvetica, san-serif">
<font size="4">Metro Motors Web Site 265-4774</font></font></b></p>
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```
10  <table width="100%" border="0">
11  <tr>
12  <td rowspan="3" width="46%">
13  <img src="/mmimage/photo1.gif" width="300" height="250"></td>
14  <td width="54%" height="83">
15  <font face="Geneva, Arial, Helvetica, san-serif"><b>Description:</b>
16  Auto Description Here</font></td>
17  </tr>
18  <tr>
```
Metro Motors Web Site 245-4774

Description:  Auto Description Here

Suggested Price:  $999,990.00

Previous  Next  Buy this Car
```plsql
<%@ page language="PL/SQL" %>
<%@ plsql procedure="page1" %>
<%@ plsql parameter="id" type="NUMBER" default="1" %>

%! l_id st_cars_for_sale.inv_id%TYPE := id;%
%! l_sale_photo_location st_cars_for_sale.sale_photo_location%TYPE;%
%! l_auto_description st_cars_for_sale.auto_description%TYPE;%
%! l_amount VARCHAR2(15);%

<%
get_car
( px id => l_id
, x_description => l_auto_description
, x_image => l_sale_photo_location
, x_amount => l_amount
);
%>
```
17  <html>
18  <head>
19  <title>Metro Motors</title>
•  <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/>
•  ...
•  <td width="54%" height="83">
•  <font face="Geneva, Arial, Helvetica, san-serif"><b>Description:</b><% = l_auto_description %></font></td>
•  </tr>
•  </td>
•  <tr>
•  <td width="54%" height="39">
•  <font face="Geneva, Arial, Helvetica, san-serif"><b>Suggested Price:</b><% = l_amount %></font></td>
•  </tr>
•  </td>
•  </tr>
•  </td>
### Alias Resolution

```xml
# Aliases: Add here as many aliases as you need (with no limit). The format is
# Alias fakename realtime
#<IfModule mod_alias.c>

# Note that if you include a trailing / on fakename then the server will
# require it to be present in the URL. So "icons" isn't aliased in this
# example, only "icons/"...
Alias /jservdocs/ "c:\oracle\ora92\Apache\jserv\docs/"
Alias /soapdocs/ "c:\oracle\ora92\soap/"
Alias /icons/ "c:\oracle\ora92\Apache\icons/"
[Alias /mmimage/"C:\temp\IntroPSP/"

<Directory "icons">
  Options Indexes Multiviews
  AllowOverride None
  Order allow,deny
  Allow from all
</Directory>

<IfModule mod_perl.c>
  Alias /perl/ "c:\oracle\ora92\Apache\Apache\cgi-bin/"
</IfModule>
```
PROMPT CREATE OR REPLACE PROCEDURE sales_tracking.page1

CREATE OR REPLACE PROCEDURE sales_tracking.page1 (id IN NUMBER default 1) AS
  l_id st_cars_for_sale.inv_id%TYPE := id;
  l_sale_photo_location st_cars_for_sale.sale_photo_location%TYPE;
  l_auto_description st_cars_for_sale.auto_description%TYPE;
  l_amount VARCHAR2(15);
BEGIN NULL;
http.prn(' ');
http.prn(' ');
http.prn(' ');
http.prn(' ');
http.prn(' ');
http.prn(' ');
http.prn(' ');
http.prn(' ');
http.prn(' ');

get_car
(
  px_id => l_id,
  x_description => l_auto_description,
  x_image => l_sale_photo_location
)
```
C:\WINNT\System32\cmd.exe

Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>cd metromotors\psp

C:\metromotors\psp>loadpsp usage: loadpsp [-replace] -user <logon> [<page1> <page2> ...]
    where <logon> ::= <username>/<password>[@<connect_string>]

C:\metromotors\psp>loadpsp -replace -user scott/tiger page1.psp
"page1.psp": procedure "page1" created.

C:\metromotors\psp>
```
Metro Motors Web Site 265-4774

Description: 1995 Toyota Camry

Suggested Price: $9,999.00

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Java Server Pages

- JSP = PSP, Java Servlets = PL/SQL Packages
- JSP compiled first time upon access
- Apache ojsp.conf file:

```bash
1  # Set aliases for Oracle JSP
2  Alias /jspdocs/ "C:\oracle\ora81\jsp\doc/"
3  #
4  # Associate OJSP extension with OJSP class to be called
7  #
```
```
1  <html>
2  <head>
3  <title>Metro Motors</title>
4  <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/>
5  </head>
6  <jsp:usebean id="getcar" class="beans.CarGetCar" scope="page" />
7  <jsp:setProperty name="getcar" property="id" param="id" /> 
8  <body bgcolor="#CCCCCC" text="#990000">
9  <p><img src="/mmimage/logo.gif" width="150" height="100" align="middle"/>
10  <b><font face="Geneva, Arial, Helvetica, san-serif">
11  <font size="4">Metro Motors Web Site 265-4774</font></font></b></p>
12  <table width="100%" border="0">
13  <tr>
```
<table>
<thead>
<tr>
<th>Description:</th>
<th>Suggested Price:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;jsp:getProperty name=&quot;getcar&quot; property=&quot;description&quot; /&gt;</td>
<td>&lt;jsp:getProperty name=&quot;getcar&quot; property=&quot;amount&quot; /&gt;</td>
</tr>
</tbody>
</table>
Metro Motors Web Site 265-4774

Description: 1995 Toyota Camry

Suggested Price: $9,999.00

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Easily incorporated into C, C++, PL/SQL, Java

XML is HTML like that is useful for formatting data for all kinds of environments

- Web
- Wireless
- Handheld devices

XSQL.conf:

# Associate .xsql extension to XSQL Servlet
ApJServAction .xsql /servlets/oracle.xml.xsql.XSQLServlet
#
<?XML version='1.0'?><xsql:query XMLns:xsql="urn:oracle-xsql" connection="scott">
  SELECT inv_id, auto_description, sale_photo_location, sale_amt FROM st_cars_for_sale ORDER BY inv_id
</xsql:query>
XML

- Rename HTML file to .XSL (style sheet)
- Line 1 contains XML identifiers
- Use {} or 'xsl:value-of' to substitute data
- Style Sheets accessed via XSQL
- Data supplied via XSQL
Data.xsql

1  <?XML version="1.0" encoding='ISO-8859-1'?>
2
3  <RESULTS XMLns:xsql="urn:oracle-xsql" connection="scott" id="1">
4  <xsql:include-owa>
5  get_car_XML({@id});
6  </xsql:include-owa>
7
8  </RESULTS>

Page1.xsql

1  <?XML version="1.0" encoding='ISO-8859-1'?>
2  <?XML-stylesheet type="text/xsl" href="page1.xsl"?>
3  <xsql:include-xsql href="data.xsql" XMLns:xsql="urn:oracle-xsql"/>
<html xsl:version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
<head>
<title>Metro Motors</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/>
</head>
<body bgcolor="#CCCCCC" text="#990000">
<xsl:for-each select="RESULTS/CAR">
<p><img src="/mmimage/logo.gif" width="150" height="100" align="middle"/>
<b><font face="Geneva, Arial, Helvetica, san-serif">
<font size="4">Metro Motors Web Site 265-4774</font></font></b></p>
<table width="100%" border="0">
<tr>
</tr>
</xsl:for-each>
</body>
</html>
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Suggested Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><img src="/mmimage%7BIMAGE%7D" alt="Image" /> width=&quot;300&quot; height=&quot;250&quot;/&gt;</td>
<td><img src="/mmimage%7BAMOUNT%7D" alt="Price" /> width=&quot;300&quot; height=&quot;250&quot;/&gt;</td>
</tr>
<tr>
<td>2</td>
<td>Description:**</td>
<td>Suggested Price:**</td>
</tr>
<tr>
<td>3</td>
<td>**xsl:value-of select=&quot;DESCRIPTION&quot;/&gt;</td>
<td>**xsl:value-of select=&quot;AMOUNT&quot;/&gt;</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Metro Motors 265-4774

Metro Motors Web Site 265-4774

Description: 1995 Toyota Camry

Suggested Price: $9,999.00

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Wireless XML

- XML very useful for wireless & handheld devices
- WML is used for wireless devices in place of HTML
- Page1.xsql modified for wml:

```xml
1  <?XML version="1.0" encoding='ISO-8859-1'?>
2  <?XML-stylesheet type="text/xsl" href="page1.xsl" media="MSIE"?>
3  <?XML-stylesheet type="text/xsl" href="page1w.xsl" media="UP"?>
4  <xsql:include-xsql href="data.xsql" XMLns:xsql="urn:oracle-xsql"/>
```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="1.0">
  <xsl:template match="/">
    <wml>
      <card id="page1" title="Metro Motors Cars">
        <p><b>Metro Motors:</b></p>
        <xsl:for-each select="RESULTS/CAR">
          <p><xsl:value-of select="DESCRIPTION"/></p>
          <p>Price:$<xsl:value-of select="AMOUNT"/></p>
          <p align="center">
            <anchor><go><xsl:attribute name="href">
              page1.xsql?id=<xsl:value-of select="ID - 1"/>
            </xsl:attribute></go>Prev  </anchor>
          </p>
        </xsl:for-each>
      </card>
    </wml>
  </xsl:template>
</xsl:stylesheet>
<anchor><go><xsl:attribute name="href">
pagel.xsql?id=<xsl:value-of select="ID + 1"/></xsl:attribute></go>Next</anchor></p>
<p align="center">
<anchor><go><xsl:attribute name="href">
page2.xsql?id=<xsl:value-of select="ID + 0"/></xsl:attribute></go>Make_Offer</anchor></p>

</xsl:for-each></card></wml></xsl:template></xsl:stylesheet>
Wireless XML
SQL> select DBMS_METADATA.GET_DDL('TABLE', emp) FROM user_tables;

CREATE TABLE “SCOTT”.”EMP”
( “EMPNO” NUMBER(4,0) NOT NULL ENABLE,
  “ENAME” VARCHAR2(10),
  .
  .
  .
  “DEPTNO” NUMBER(2,0)
) PCTFREE 20 PCTUSED 50
STORAGE (INITIAL 256, NEXT 256 ... BUFFER_POOL DEFAULT)
TABLESPACE “USERS”
SQL> select DBMS_METADATA.GET_XML('TABLE', emp) FROM user_tables;

<?xml version="1.0"?>
<ROWSET>
  <ROW>
    <TABLE_T>
      <OBJ_NUM>1234</OBJ_NUM>
      ...
      ...
      ...
    </TABLE_T>
  </ROW>
</ROWSET>
More Information

TOra at: www.Globecom.se/tora
- www. Orapub.com
- Technet.oracle.com
- www. lxora .com
- www.jlcomp.demon.co.uk
- www. DBASupport.com
- www.tusc.com
- Presentation downloads

- www. DanHotka.com click on Downloads
What have we learned?

- All examples on www.DanHotka.com
- A little Oracle History
- PL/SQL Pages
- Java Pages
- XML
- Wireless XML