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The Premier Conference for Developers




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Introducing Oracle SQL Developer: Features and Futures

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Principal Product Manager

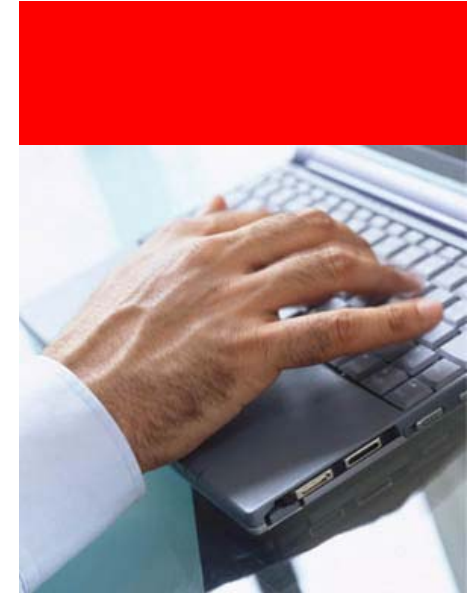




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Agenda

- What is SQL Developer?
- Why SQL Developer?
- The SQL Developer Audience
- Features
 - Database Connections
 - Database Objects
 - Schema Data
 - Queries
 - PL/SQL
 - Reports
- SQL Developer Going Forward
- Summary
- More Information





Dominic Delmolino
Director Database
Engineering,
Network Solutions

“At Network Solutions, the developers have moved from platform-specific, costly third-party tools to Oracle SQL Developer. The database access our developers need is mostly for stored procedure code and data browsing and SQL Developer fits the bill.”



Gabriel Lozano-Morán
Solution Architect,
National Railway Company of
Belgium

"Company-wide we use a broad range of platforms (J2EE, .NET ...) for the development of our Enterprise Software and the Oracle Database is de-facto standard DBMS. The zero cost of ownership and the high usability played a significant role in our decision to use the lightweight SQL Developer for the database development at the NDCC."



What is SQL Developer?

SQL Developer provides:

- Object Browsing
- Object Creation
- SQL Worksheet for commands and scripts
- PL/SQL editing, debugging
- Developer centric, user extensible reports



Why SQL Developer? — Top Reasons

- A graphical interface to Oracle database
 - Uncluttered, intuitive interface
 - Enhanced productivity
 - Good user experience
 - Simplified database development tasks
- Comprehensive core functionality
- Rich client, SQL*Plus functionality
- Easy
 - Unzip install
 - No Oracle Home required
 - Multi-platform support: Windows, Linux and Mac OS X
- Targets the Oracle Database Developer

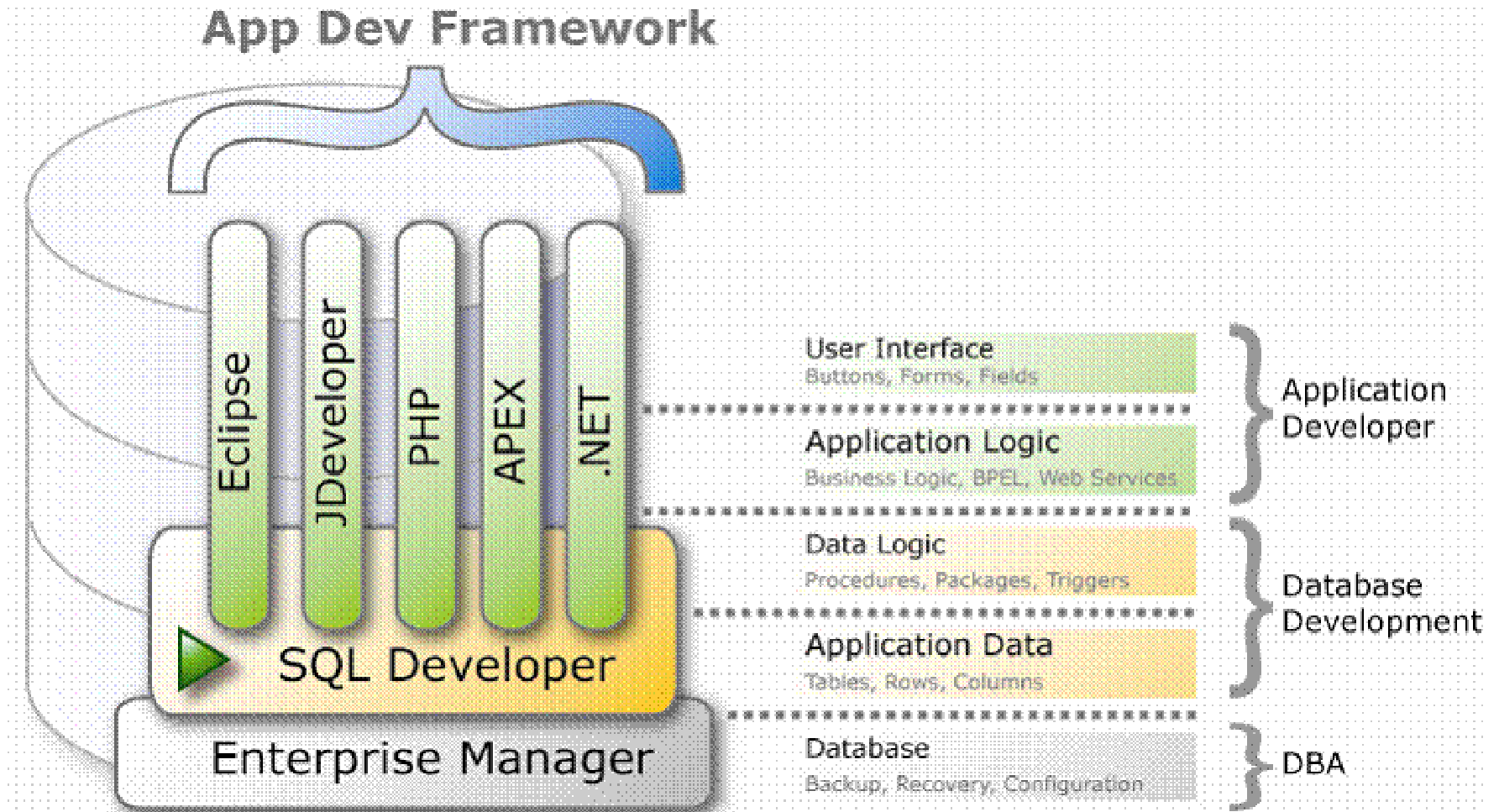
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A Few Technical Details

- Developed in the JDeveloper IDE
 - Leveraging a robust extensible IDE Framework
 - First independently branded product on JDeveloper IDE
- Works with Database 9.2.0.1 and later
- Uses JDBC Thin driver
 - No Oracle Home required
 - JDBC Type 2 driver also supported
- Bundled with JRE 1.5

SQL Developer – The Audience



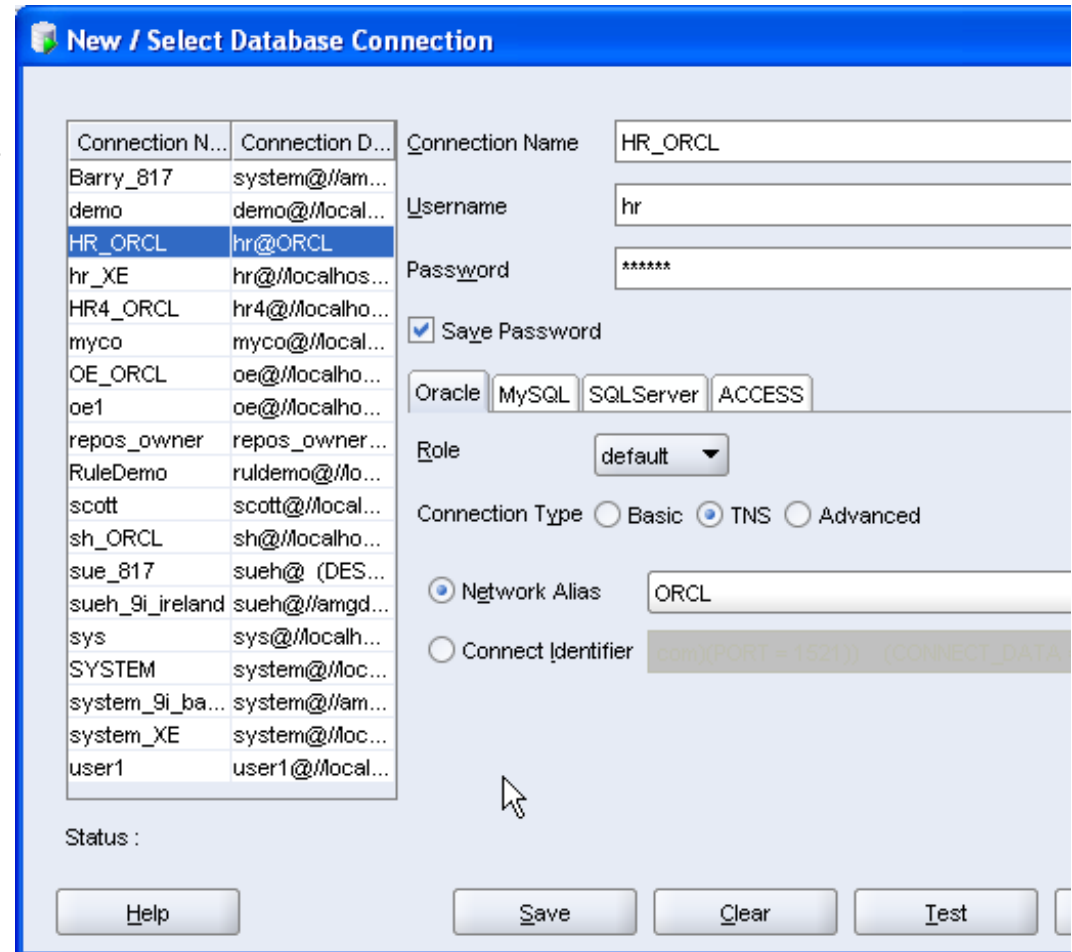


Introducing SQL Developer Features

- Creating Database Connections
- Creating and Browsing Objects
- Querying and Updating Data
- Importing Data, Exporting Data and Objects
- Using the SQL Worksheet
- Running the Query Builder
- Managing Snippets
- Creating and Running PL/SQL
- Running and Defining Reports
- Reviewing Preferences
- Reviewing the IDE

Creating Database Connections

- Create and test
 - For multiple databases
 - For multiple schemas
- Save*
- Import and export
- Reuse
 - Database browsing
 - PL/SQL Development
 - Running reports
- Read details from tnsnames.ora

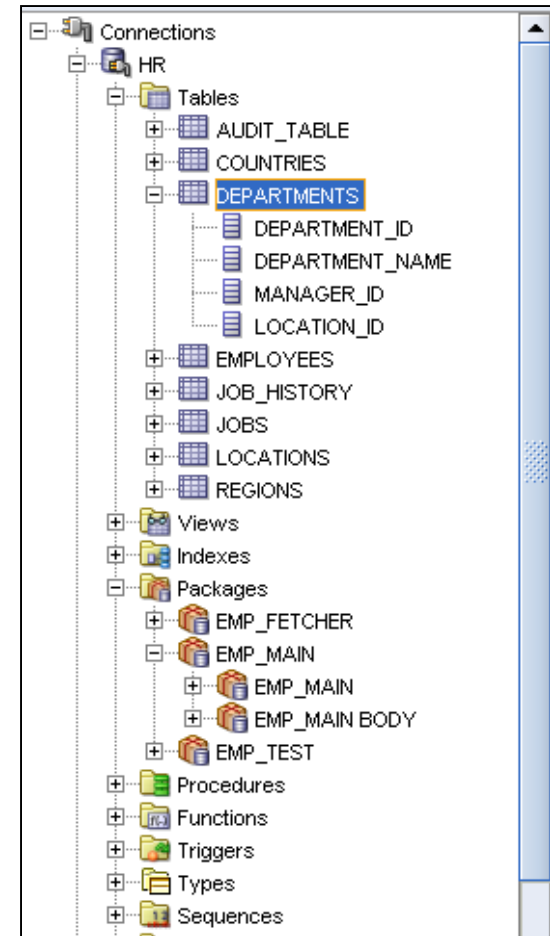


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* A number of the features described are available from SQL Developer Release 1.1

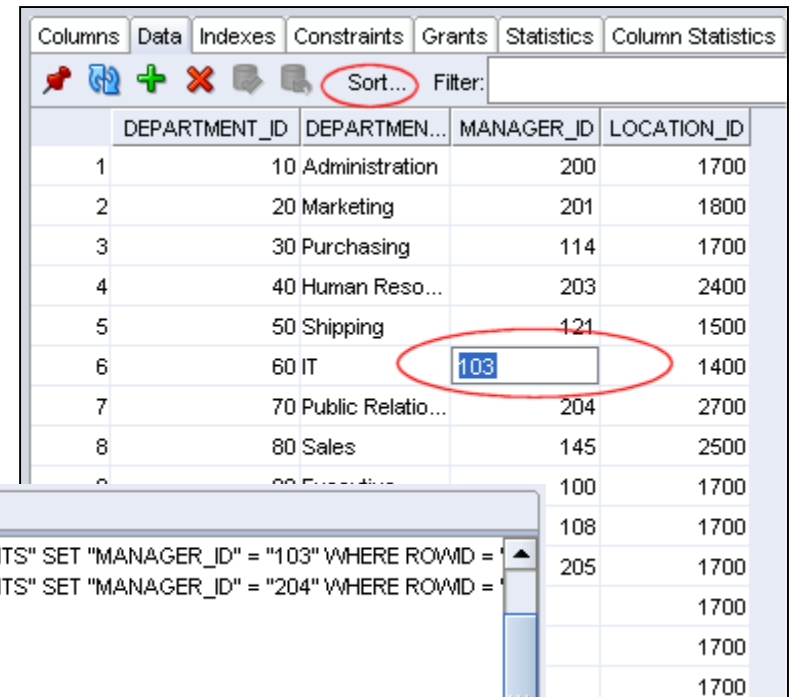
Creating and Browsing Objects

- Tree based Object Browser
- Create and edit database objects
- Create and browse users
- Support for common objects
 - Tables, Views, Indexes
 - Packages, Procedures, Functions, Triggers
 - Types
 - Sequences
 - Materialized Views and Logs
 - Synonyms (public and private)
 - Database Links (includes Public)
 - Directories
 - Recycle Bin
 - Other Users

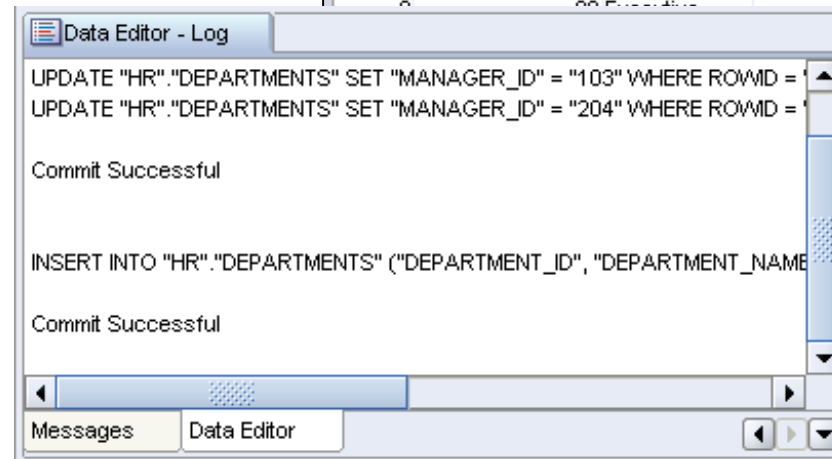


Querying and Updating Data

- Browse table grid data
 - Filter
 - Sort
- Single record view*
- Duplicate row*
- Run scripts for mass updates
- Use grid for single value updates
- Track updates through message log
- Filter and sort data for views



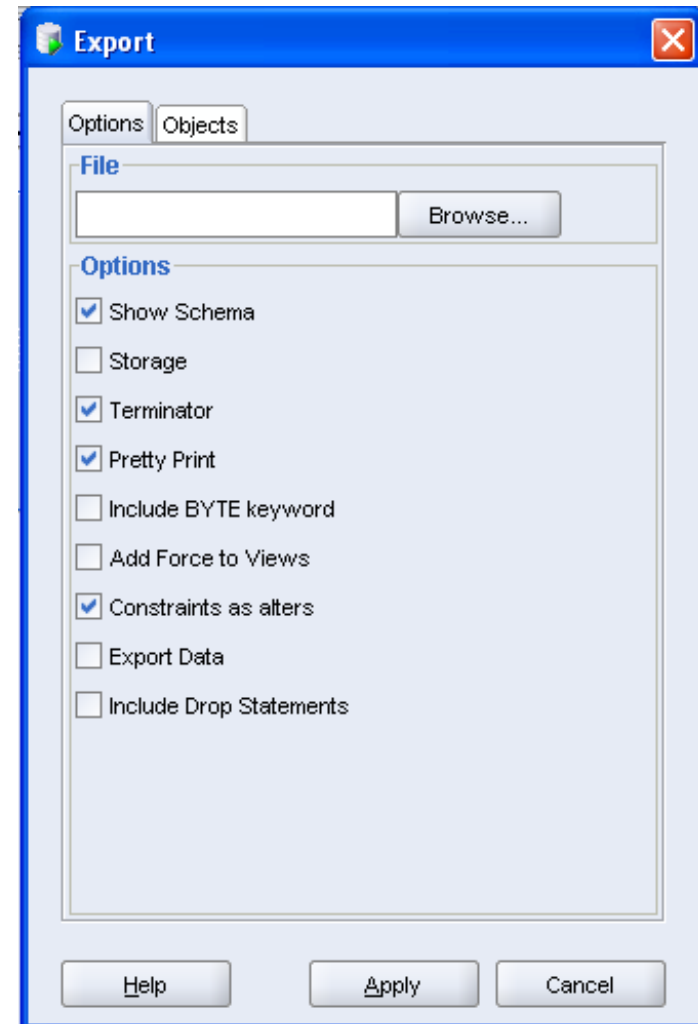
	DEPARTMENT_ID	DEPARTMENT...	MANAGER_ID	LOCATION_ID
1	10	Administration	200	1700
2	20	Marketing	201	1800
3	30	Purchasing	114	1700
4	40	Human Reso...	203	2400
5	50	Shipping	121	1500
6	60	IT	103	1400
7	70	Public Relatio...	204	2700
8	80	Sales	145	2500
9	90	Executive	100	1700
10	100	Operations	108	1700
11	110	Support	205	1700
12	120	Training	1700	1700
13	130	Quality Assurance	1700	1700
14	140	Procurement	1700	1700
15	150	Facilities	1700	1700



```
Data Editor - Log
UPDATE "HR"."DEPARTMENTS" SET "MANAGER_ID" = "103" WHERE ROWID =
UPDATE "HR"."DEPARTMENTS" SET "MANAGER_ID" = "204" WHERE ROWID =
Commit Successful
INSERT INTO "HR"."DEPARTMENTS" ("DEPARTMENT_ID", "DEPARTMENT_NAME
Commit Successful
Messages Data Editor
```

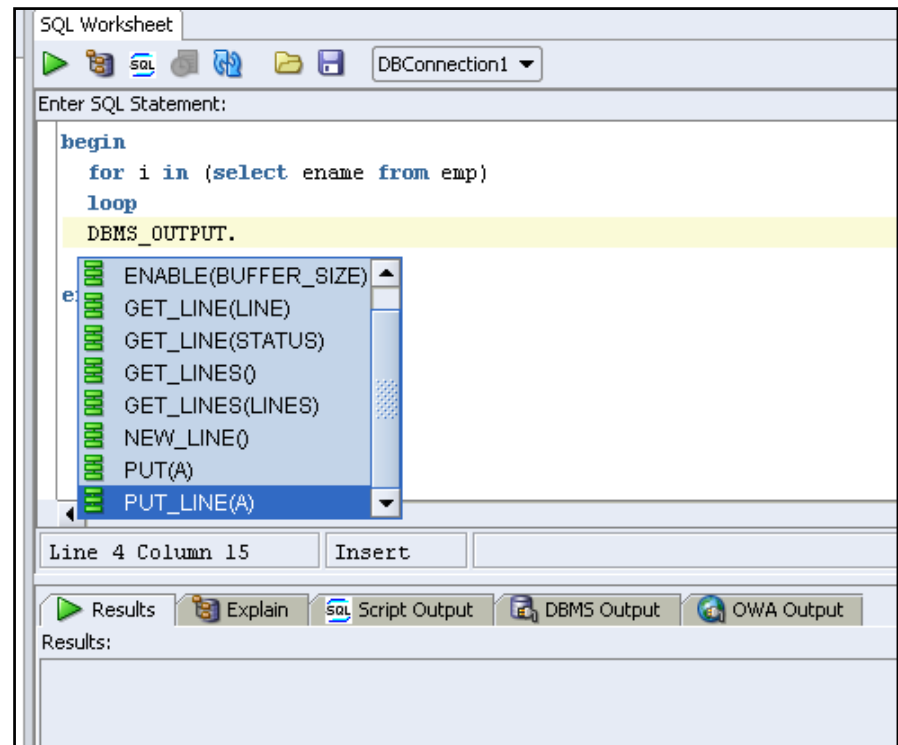
Exporting and Importing

- Data Import and Export
 - Export data
 - Text, CSV, Insert, Loader, XML,
 - HTML, XLS*
 - Import Data*
 - MS Excel
- Multiple Object DDL Export
 - Parameters to optionally include:
 - Schema owner*
 - Drop statements*
 - Storage syntax
 - Inline constraints syntax
 - Export data



Using the SQL Worksheet

- Execute queries, scripts
 - Single Statement Execution
 - Script Execution
- Editing statements
 - Syntax Highlighting
 - Code Insight
 - Code Formatting
 - Bind Variable Support
- Other options
 - Command History
 - Explain Plan
 - Autotrace*
 - HTP and OWA output
- SQL*Plus Commands



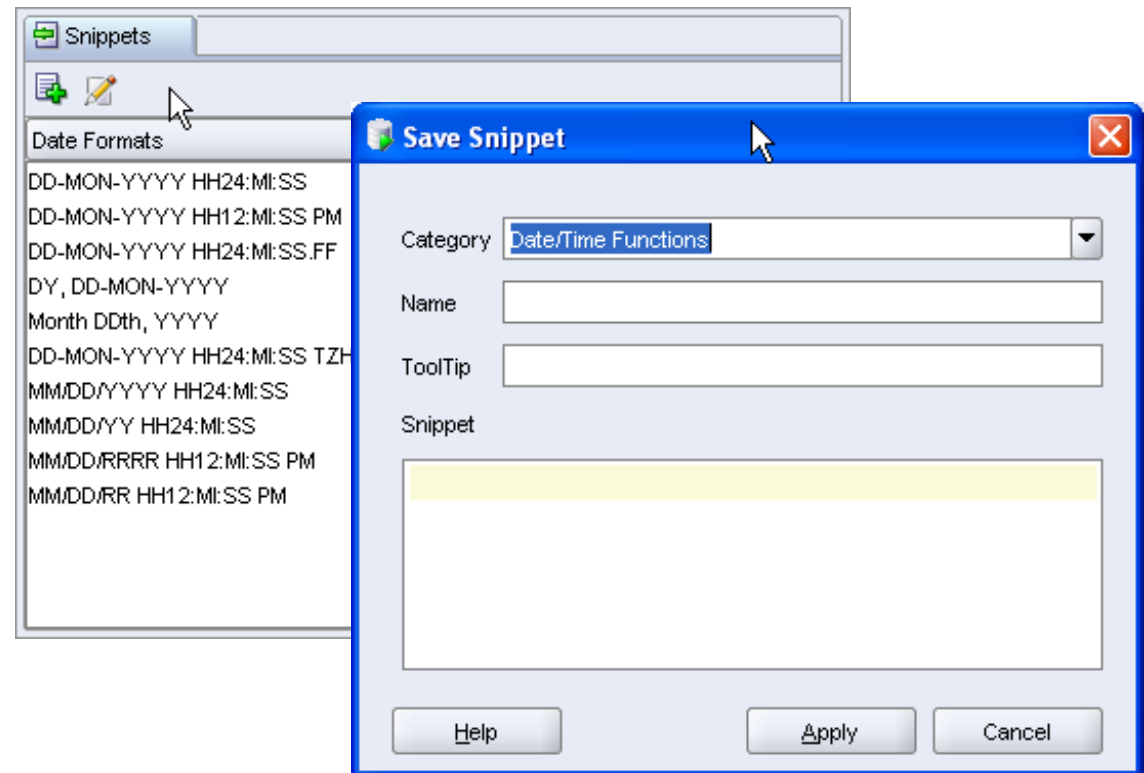
Using the Query Builder

- Drag & Drop Query Building*
 - Automatic FK joins
 - Complex where clause
 - Preview SQL
 - Preview results
 - Add query to Worksheet

The screenshot displays the Oracle Query Builder interface. On the left, a list of tables includes COUNTRIES, DEPARTMENTS, EMPLOYEES, EMP_DETAILS_VIEW, JOBS, JOB_HISTORY, LOCATIONS, and REGIONS. The main canvas shows a query structure with a WHERE clause containing three conditions: DEPARTMENT_NAME doesn't contain S, JOB_TITLE starts with A, and LAST_NAME doesn't contain O. These conditions are connected by AND and OR operators. A relationship diagram shows LOCATIONS linked to COUNTRIES (via COUNTRY_ID) and REGIONS (via REGION_ID). The REGIONS table is also linked to COUNTRIES (via COUNTRY_ID). The interface includes tabs for 'Select Columns', 'Create Where Clause', 'Show SQL', and 'View Results'. A context menu is open over the COUNTRIES table, showing options to link or delete links between COUNTRY_ID and COUNTRY_NAME.

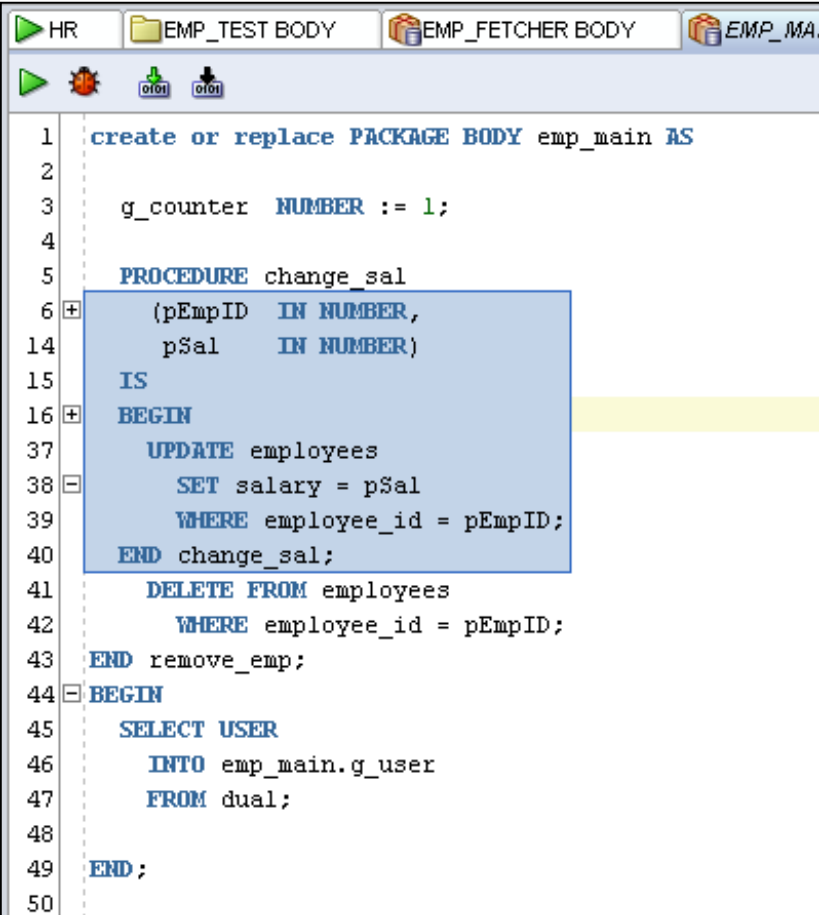
Managing Snippets

- Drag and drop code from snippet categories to SQL Worksheet or Code editor
- Create new*
 - Categories
 - Snippets



Creating and Running PL/SQL

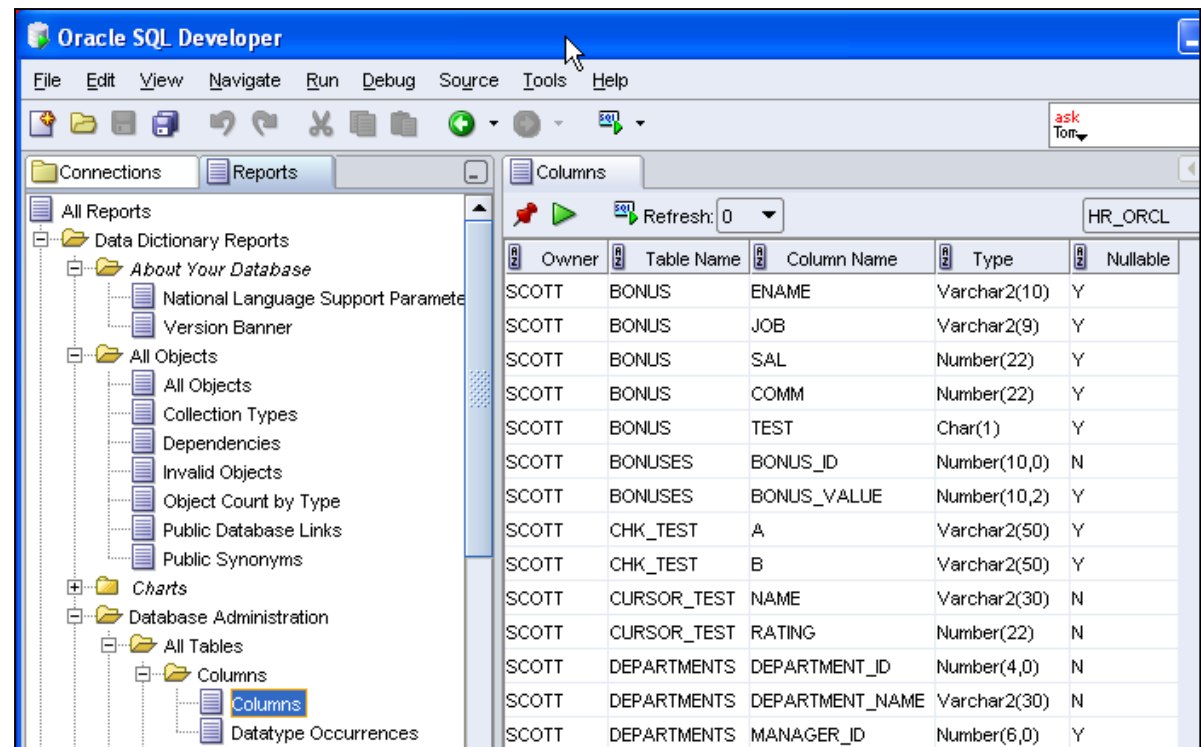
- Code editor
 - Syntax highlighting
 - Code formatter
 - Code insight (auto complete)
 - Code folding
 - Query Builder*
- Code snippet viewer
 - Drag and drop code snippets
 - Add and customize snippets*
- Compile, Run and Debug
 - Inline error reporting
 - Full debug capabilities
- Code bookmarking
- Customizable quick keys



```
1  create or replace PACKAGE BODY emp_main AS
2
3      g_counter  NUMBER := 1;
4
5      PROCEDURE change_sal
6      (pEmpID  IN NUMBER,
14     pSal     IN NUMBER)
15  IS
16  BEGIN
37      UPDATE employees
38         SET salary = pSal
39         WHERE employee_id = pEmpID;
40  END change_sal;
41
42      DELETE FROM employees
43         WHERE employee_id = pEmpID;
44  BEGIN
45      SELECT USER
46         INTO emp_main.g_user
47         FROM dual;
48
49  END;
```

Creating and Running Reports

- Suite of System Reports
 - All Objects
 - Charts*
 - DBA
 - Data Dictionary
 - Jobs
 - PL/SQL
 - Security
 - Streams
 - Table
 - XML
- User Defined



The screenshot shows the Oracle SQL Developer interface. The 'Columns' window is open, displaying a table of columns from the HR_ORCL database. The table has the following columns: Owner, Table Name, Column Name, Type, and Nullable. The data is as follows:

Owner	Table Name	Column Name	Type	Nullable
SCOTT	BONUS	ENAME	Varchar2(10)	Y
SCOTT	BONUS	JOB	Varchar2(9)	Y
SCOTT	BONUS	SAL	Number(22)	Y
SCOTT	BONUS	COMM	Number(22)	Y
SCOTT	BONUS	TEST	Char(1)	Y
SCOTT	BONUSES	BONUS_ID	Number(10,0)	N
SCOTT	BONUSES	BONUS_VALUE	Number(10,2)	Y
SCOTT	CHK_TEST	A	Varchar2(50)	Y
SCOTT	CHK_TEST	B	Varchar2(50)	Y
SCOTT	CURSOR_TEST	NAME	Varchar2(30)	N
SCOTT	CURSOR_TEST	RATING	Number(22)	N
SCOTT	DEPARTMENTS	DEPARTMENT_ID	Number(4,0)	N
SCOTT	DEPARTMENTS	DEPARTMENT_NAME	Varchar2(30)	N
SCOTT	DEPARTMENTS	MANAGER_ID	Number(6,0)	Y



Reviewing Preferences

- NLS parameters*
 - NLS Date Format
 - NLS Territory...
- Autotrace parameters*
 - Cost
 - Predicates...
- SQL Worksheet*
 - Autocommit in SQL Worksheet
 - Open SQL Worksheet on connect
 - Set default path for script execution
- Set Null string*
- Object Viewer*
 - Automatically Freeze (Pin tabs)
 - Control DDL on the SQL tab



Reviewing the IDE

- Navigator Tabs
 - Connections Navigator
 - Reports Navigator
- Operations
 - Freeze view
 - Split screen details
 - Dockable windows
 - Double-click tab maximise
 - Drag and drop snippets
- Menus
 - Context menus
 - Actions...
- Search Engines*
- Check for updates



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

SQL Developer



SQL Developer 1.1

- Reporting
 - Master Detail & Linked Reports
 - Charting
- Native Excel Import & Export
- SQL Worksheet enhancements
 - Duplicate Record
 - View CLOB data
 - Single record view
- SQL and PL/SQL Parsing Updates
- Enhanced SQL Script File Handling
- Rewritten Object Navigator
- Search Engines: AskTom, Metalink, OTN Forum...
- External Tools Support



SQL Developer Going Forward

- Tuning and Diagnostics
 - Database Activity Reporting on AWR & ASH
 - PL/SQL Profiler, SQL Tune & Access Advisor
 - Trace File Parsing and Reporting
- Other Features
 - Additional database objects
 - AQ, DBMS Job, Intermedia, Text
 - 11g New Feature Support
 - Database Editions
 - PL/SQL Enhancement e.g SQL Injection Tool
 - Workload capture & Replay...
 - Version Control
 - CVS, SVN
 - Migration Workbench (SQL Server, MySQL and MS Access)



Summary

- Lightweight, easy install
- Current release has good feature coverage
 - Browse schemas, users and data
 - Create and update objects
 - Create, execute and debug PLSQL
 - Run and create user defined reports
- Release 1.1 includes:
 - Updated Reporting
 - Native Excel Import & Export
 - SQL Worksheet enhancements
 - Rewritten Object Navigator

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For More Information

<http://search.oracle.com>

or

http://www.oracle.com/technology/products/database/sql_developer



Related Technologies

- Oracle Database 10g
- Oracle Database 10g Express Edition
- Oracle Application Express (aka HTML DB)
- Oracle JDeveloper
- PL/SQL
- SQL*Plus



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