# Oracle Developer Tools for Visual Studio .NET

*Feature Overview*
*June 2005*

## EXECUTIVE OVERVIEW

The Oracle Developer Tools for Visual Studio .NET is a powerful new "add-in" for Visual Studio .NET that makes it easier and faster for .NET developers to write Oracle applications. Available now as a free download on the Oracle Technology Network, it is tightly integrated with Visual Studio .NET and includes powerful features such as designers, automatic code generation and a PL/SQL editor.

**The Oracle Developer Tools for Visual Studio .NET makes it easier and faster for .NET developers to write Oracle applications. It is available as a free download at http://otn.oracle.com/dotnet.**

All of these features are designed with the goal of making developing for Oracle on Windows as intuitive and as easy as possible. Developers coming from a SQL Server background will find it to be familiar and intuitive, minimizing any learning curve. And for those who are new to Oracle development, this is an easy way to learn!

This document will introduce the major features of the Oracle Developers Tools and provide an overview of the functionality.

Major features include:

- **Oracle Explorer** – Browse and alter the Oracle schema via a tree control
- **Designers and Wizards**– e.g. Table Designer - makes database tasks easy
- **Automatic Code Generation** – Drag and drop to create working code.
- **PL/SQL Editor** – Edit stored procedures and functions in an integrated Visual Studio .NET environment
- **Stored Procedure Testing –** Run stored procedures and functions
- **Oracle Data Window** – View and edit your Oracle data
- **SQL Query Window –** Execute any ad-hoc SQL statement or script
- **Integrated Help System** - SQL, PL/SQL and Error Reference Manuals

## ORACLE EXPLORER

As shown in Figure 1 below, the Oracle Explorer is a tree control that allows you to view the structure of the Oracle schema. All of the various Oracle schema types such as tables or stored procedures are included here. Metadata such as column datatypes or stored procedure parameter types are displayed in the Visual Studio .NET "properties pane" when a schema object is selected. A context menu for each schema object offers additional features: SQL Scripts can be generated for schema objects, filters are provided to limit what is shown, and designers and wizards can be spawned to alter the schema. For example, while viewing the

structure of a table, the context menu can be used to spawn the "Oracle Table Designer" to modify the design of the table.

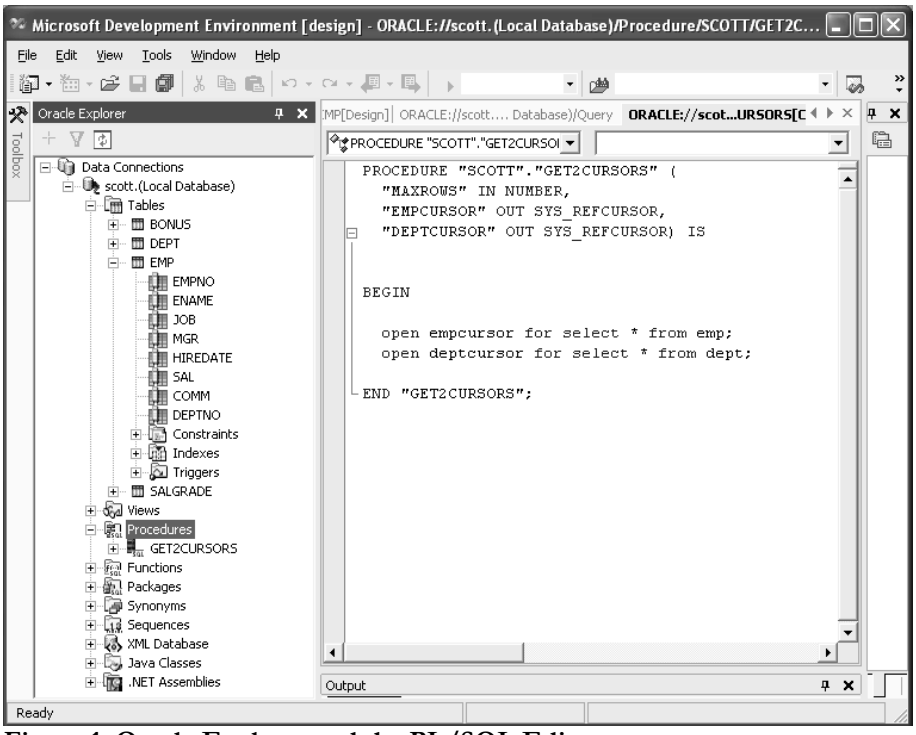


**Figure 1: Oracle Explorer and the PL/SQL Editor**

**Designers and wizards provide step by step assistance to create or alter database objects such as tables, views, stored procedures, stored functions, PL/SQL packages, sequences, indexes, constraints, triggers, synonyms, and more.**

## DESIGNERS AND WIZARDS

The Oracle Developer Tools offer a variety of designers and wizards to provide step by step assistance to create or alter database objects such as tables, views, stored procedures, stored functions, PL/SQL packages, sequences, indexes, constraints, triggers, synonyms, and more. For example, the table designer, shown in Figure 2, makes looking up datatypes or memorizing SQL syntax a thing of the past. In the case of the table designer, the user simply provides the table name and the names of the columns and chooses the appropriate datatype from a drop down box. Pressing the "save" button would then cause the table to be created or altered. A newly created schema object will then immediately appear in the Oracle explorer.

Any SQL that is generated by a designer to create or modify a schema object is displayed in both a "Preview" window (before a change is committed) as well as in the Oracle Database Output window (after the change is committed).

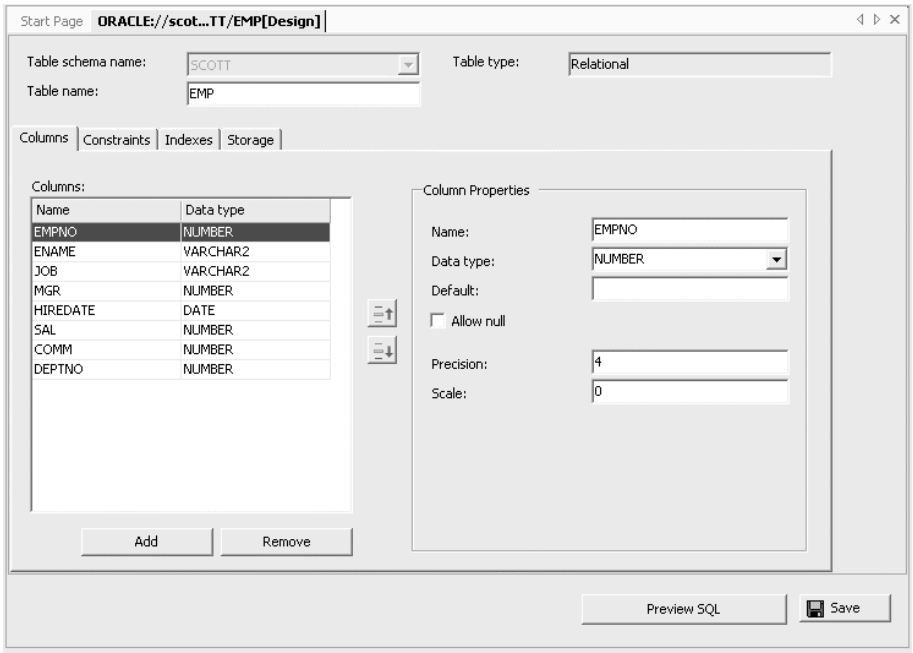


**Figure 2: Oracle Table Designer**

## AUTOMATIC CODE GENERATION

**A simple drag and drop operation results in automatically generated code that uses the OracleDataAdapter, a class member of the Oracle Data Provider for .NET.**

Dragging and dropping a schema object from the Oracle Explorer onto an application's form results in code being automatically generated for SELECT, UPDATE, INSERT, and DELETE operations on that schema object. The code utilizes the OracleDataAdapter class which is provided by the Oracle Data Provider for .NET, Oracle's robust .NET data provider. The DataAdapter can then be used to connect UI elements (such as a DataGrid) on the application's form to the Oracle database, with a minimum of additional coding required. This use of a DataAdapter is standard and will be very familiar to anyone with programming experience with other databases.

The user is also given the option to generate code for a typed or untyped dataset based on an Oracle table or view. These datasets can then be bound as a data source to UI elements or can be used in other standard ways throughout Visual Studio .NET, such as with the Visual Studio XML Schema designer.

## PL/SQL EDITOR

The PL/SQL editor (shown in Figure 1) provides a tightly integrated development environment for Oracle developers while freeing them from having to leave Visual Studio .NET when stored procedure development is required. Standard Visual Studio features include syntax coloring to improve readability and collapsible regions to hide stored procedures or functions that are part of a very large and complex package - this makes it easier for attention to be focused on the procedure or function that is being worked on. Additionally, as SQL or PL/SQL

statements are entered, a drop down list of tables or columns will pop up to provide autocompletion of the statement.

When the PL/SQL is compiled and errors are found, they are listed in the Visual Studio .NET task list. Clicking on them will take the developer to the line of code that failed. Pressing the context sensitive help key will open the error messages manual to the error code in question.

## STORED PROCEDURE TESTING

Stored procedures and function may be tested quickly via the "Run" context menu on the Oracle Explorer. Input parameters are requested, and then the the procedure is executed. Output parameters (shown in figure 3) are provided in an easily readable format. Complex output types, such as REF CURSOR yield a link that when clicked will open up a grid containing the complex data.

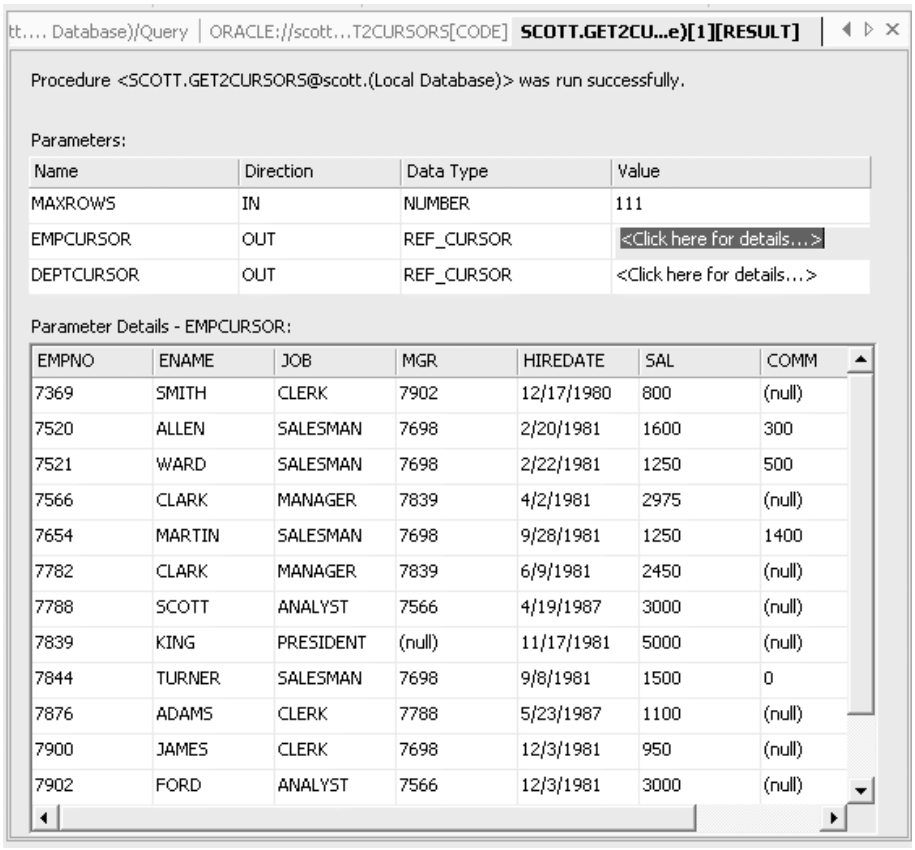


**Figure 3: Stored Procedure Testing**

## ORACLE DATA WINDOW

Shown in figure 4, the Oracle Data Window displays table or view data in an easy to read grid and allows the developer to insert, update or delete data without

having to leave Visual Studio .NET development environment. For large tables, the user can provide a row number to jump ahead to a particular row.

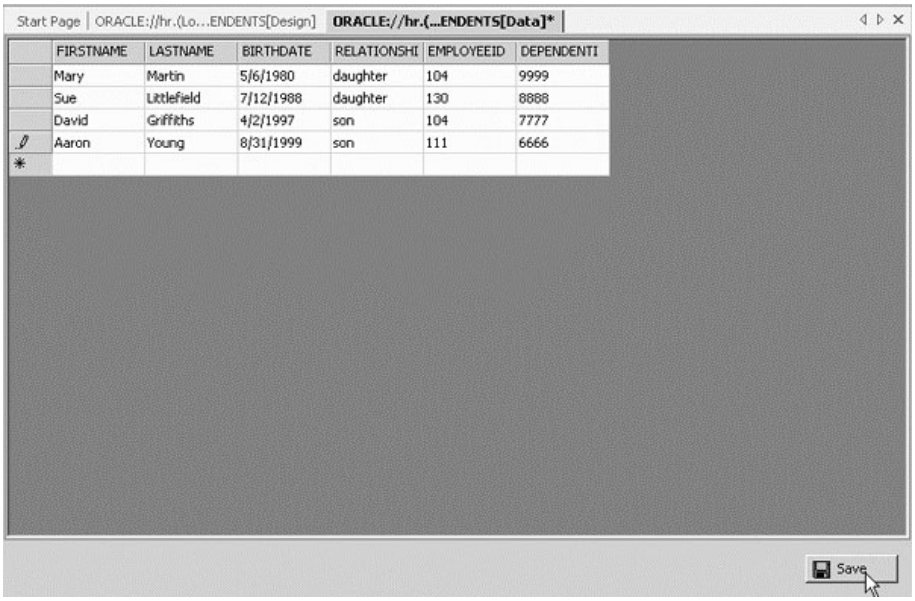


**Figure 4: Oracle Data Window**

## SQL QUERY WINDOW

Ad hoc SQL statements, such as those containing SELECT, CREATE, ALTER, etc may be executed from the SQL Query Window. If the output of the SQL statement is a table or view, the user is given a choice of text or grid output. Multiple statements may be highlighted and run as a group. The script operator "@" can be used to run SQL scripts.

Schema objects may also be dragged and dropped from the Oracle Explorer onto the SQL Query Window surface to automatically generate the appropriate SQL.

## INTEGRATED ONLINE HELP

The Oracle Developer Tools for Visual Studio .NET includes key Oracle documentation that has been converted into Visual Studio help format. The *SQL Language Reference Guide*, the *PL/SQL User and Reference Guide*, and the *Error Messages and Codes* manuals have each been included.

The chapters in these manuals may be read sequentially via the Visual Studio .NET help pane. In addition, this documentation has been integrated with the Visual Studio context sensitive help. For example, while writing a stored procedure, the developer can highlight a SQL or PL/SQL keyword, such as "SELECT", press the context help key, and be taken automatically to the appropriate page in the *SQL Language Reference Guide.*

In addition to these manuals, the Oracle Developer Tools documentation contains helpful getting started and "walkthrough" chapters as well as a reference guide.

## CONCLUSION

The Oracle Developer Tools for Visual Studio .NET makes it easier and faster for .NET developers to write Oracle applications and is designed to be simple to learn. It is available for free download at http://otn.oracle.com/dotnet.

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**Author: Christian Shay**

**Oracle Corporation**
**World Headquarters**
**500 Oracle Parkway**
**Redwood Shores, CA 94065**
**U.S.A.**

**Worldwide Inquiries:**
**Phone: +1.650.506.7000**
**Fax: +1.650.506.7200**
**www.oracle.com**

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