DEVELOPING REPORTS WITH ORACLE REPORTS 6I

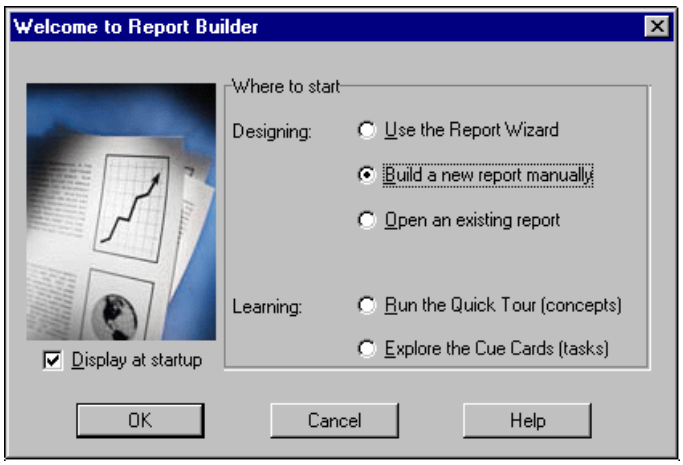
Elizabeth Boss, Boss Consulting Services, Inc.

Abstract

Oracle Reports 6i is a Graphical User Interface (GUI) tool that is used to create reports based on data stored in Oracle database tables. The purpose of a report is to display database information in a meaningful manner for end-users. Oracle Reports 6i provides the capability to generate reports that will run either client-server or from an internet browser. Oracle Corporation has created a design interface that remains relatively consistent throughout all of its development tools. Once the developer has worked with one of the Oracle Developer tools, learning to use the other development tools has a reduced learning curve due to the consistency of the design environment.

Creating a Report

When the Report Builder product is invoked, the Welcome window is displayed allowing developers to select design and learning options. There is also an option allowing developers to decide if they would like to continue to see this window during new reports development. Many developers will find that building reports manually will be faster than using the Reports Wizards. To create a report manually, select the **Build a new report manually** radio button in the Welcome window.



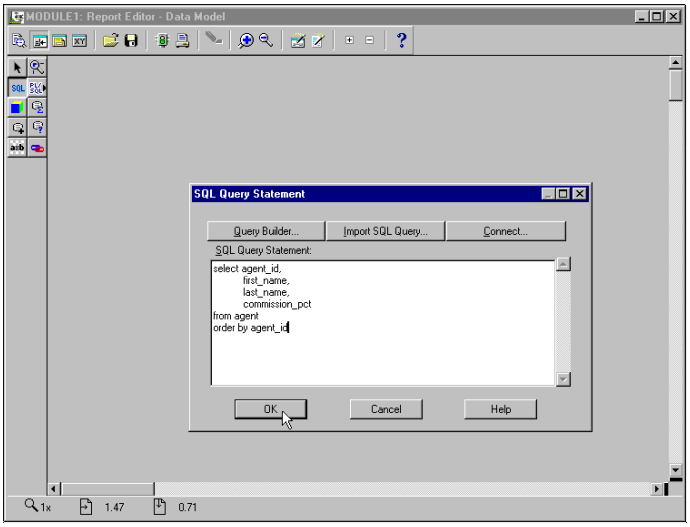
The following steps are required to build an Oracle Report:

1. Create a new report module.
2. Create a new data model.
3. Create the query object in the data model.
4. Create a layout model for the report.
5. Save and run the report.

Many objects are created when creating an Oracle Report. Oracle has default names for all objects that are created, and uses a naming convention that indicates what type of object is created and a sequence number. Maintenance of a report will be much easier if the developer supplies more meaningful names than the default names created by Oracle Reports. The naming conventions used in this paper will provide a descriptive object name and object type. For instance, a query object that retrieved travel agent information would be named Q_AGENT or AGENT_QUERY.

The Data Model

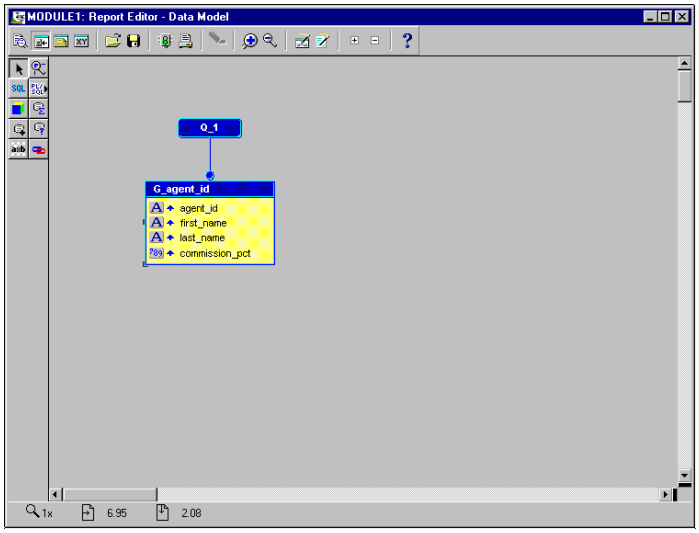
The first step in creating a report is to create a Data Model. The Data Model Editor provides a window where the data model objects can be created. The Data Model Editor is invoked by double-clicking on the Data Model icon in the Object Navigator or selecting Tools/Report Editor from the main menu.



The Data Model Editor has a tool palette, toolbar, main menu, and drawing area. The Data Model Editor is used to define the queries, groups, and computed columns that will be included in the report. The data model displays the columns that are selected from the database tables in one or more groups. The columns appear in the report as fields.

The first object that needs to be created in the Data Model is the query object. To create a query object, click on the Query icon in the tool palette. The SQL Query Statement window will automatically be displayed. Type in any valid query statement, including table joins, subqueries, and the set operators. Click on the **OK** button to validate the query and close the SQL Query Statement window.

The Data Model Editor and the Object Navigator are updated immediately upon creation of the new query. The Data Model Editor now contains two objects: a query object and a group object.

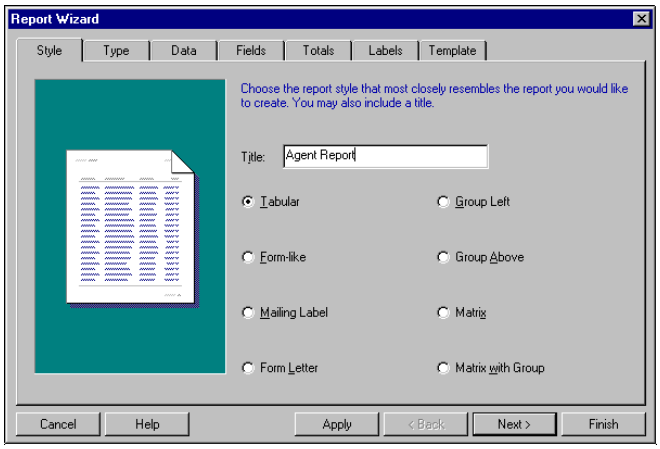


Note the default name of the query is Q_1. The default name of he group is G_agent_id. The name of the gropu is defined by the first column listed in the query prefixed by G_. It is recommended to develop and adhere to naming standards for both queries and groups. The query can be modified at any time by double-clicking on the query object in the Data Model Editor.

The group and query names can be modified by invoking the appropriate property palette. To invoke the property palette for an object, right-mouse click on the object and select Tools/Property Palette from the pop-up window. In the property palette, modify the *Name* property supplying a meaningful name for the object.

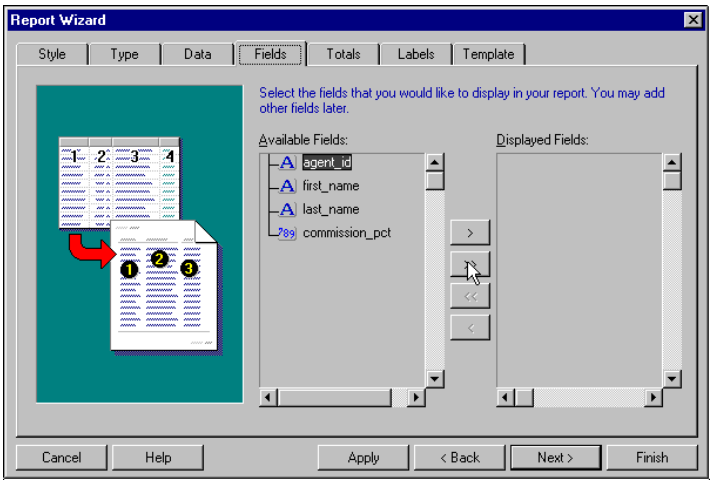
The Layout Model

After the data model has been created, the next step in developing a report is to create a layout for the report. To create the report layout, select Tools/Report Wizard from the main menu or click on the Report Wizard button in the button palette. The Report Wizard will guide you through the creation of the report layout.



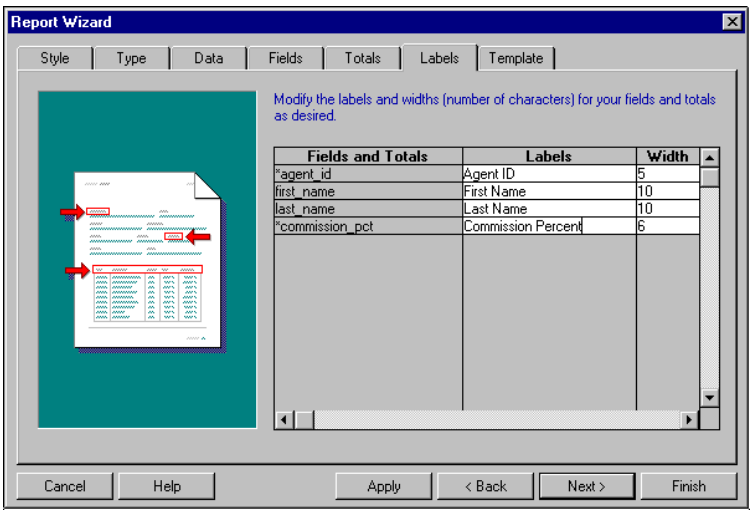
The Style tab allows the developer to specify the positioning of fields and labels on the report and the report title. The Title will be displayed at the top of every page of the report. A style of Tabular prints the labels above the fields. The Form-like style prints the labels on the left-hand side of the fields. The Mailing Label style is used to create address labels. The Form Letter style allows text and data fields to be intermixed. The Group Left and Group Above styles are used when two or more groups are included in the report and determine positioning of the parent group columns. The Matrix style creates a report that displays data as the column and row headings, and allows a data value to be placed at the intersection of a row and column. The Matrix with Group style uses a matrix report that includes a group.

The Data tab contains the query that was created earlier. There is no need to go to this window unless the query needs to be modified. The Report Wizard is re-entrant, allowing any of the layout specifications to be changed later.

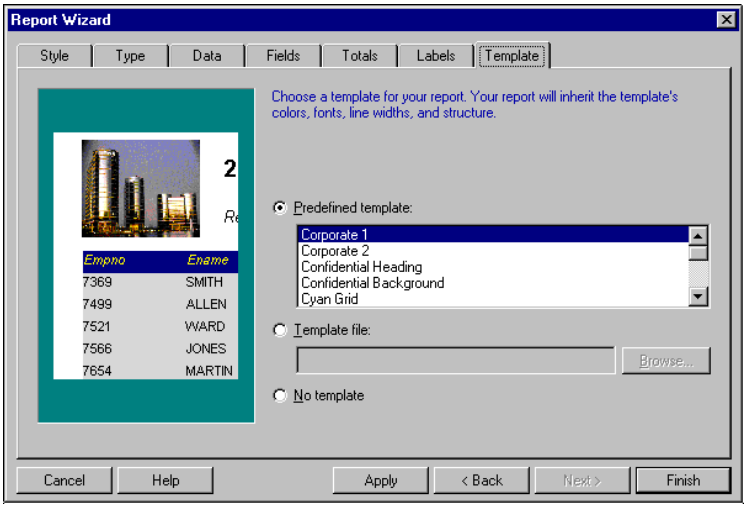


The Fields tab allows columns to be selected that should be included in the report as fields. To select a column, highlight the column in the Available Fields box and then click on the single greater than sign (>) button. The column will be transferred to the Displayed Fields box. To select all columns, click on the double greater than (>>) button. All columns will be transferred to the Displayed Fields box. To deselect a column, highlight the column in the Displayed Fields window and then click on the single less than (<) sign.

The Totals tab is used to add computational columns to a report. This report will not contain any computations.



The Labels tab provides a window where the column labels and display widths for the fields can be modified. When a field is modified, an asterisk is placed beside the field name.

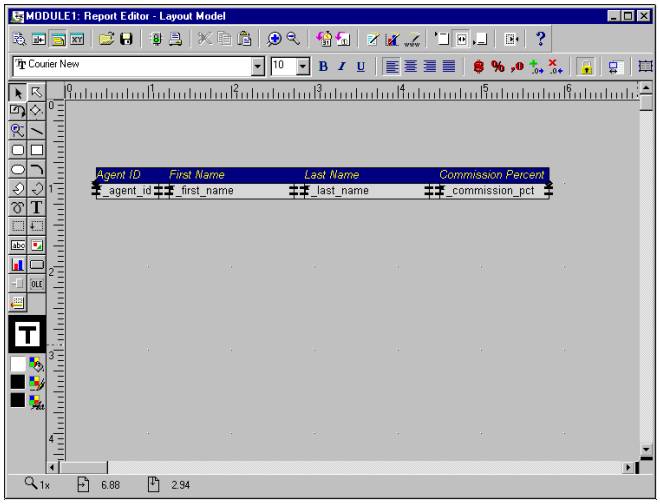


The Template tab is used to identify the template associated with the report. Oracle Report Builder includes several predefined templates that the developer may select from. The **Predefined template** radio button should be selected if the report should use a template supplied with the Report Builder product. Select the desired template from the list of predefined templates. The **Template file** radio button is used when the report will use a template that has been previously defined and stored as an operating system file. A standard Windows Open window will be displayed allowing the developer to choose the appropriate template file. The **No template** radio button is selected when the report will not be based on a template. This provides a basic report with column names as labels (unless the labels have been changed in the Labels tab).

When all changes required changes have been made to the Report Wizard tabs, click on the **Finish** button to complete creation of the report layout. The report will be executed and the Live Previewer will be displayed. The Live Previewer displays data from the database and allows modification to the appearance of the report.

Updated Layout Editor

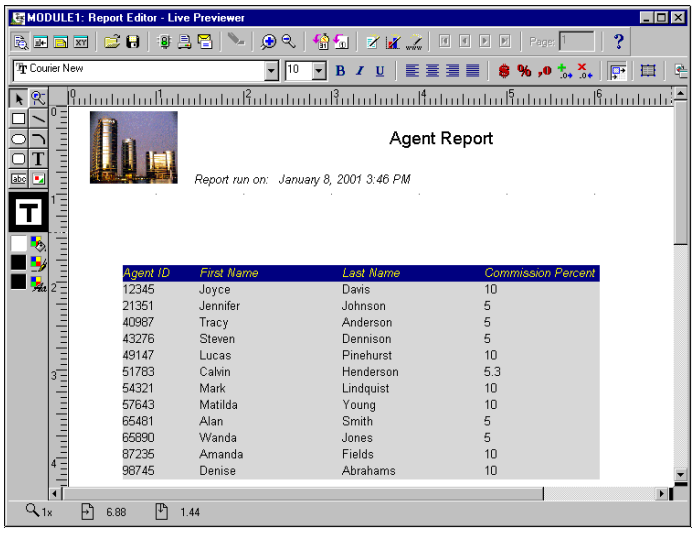
To display the updated Layout Model, double-click on the Layout Model object in the object navigator or from the Data Model Editor window, click on the Layout Model button.



The Layout Model is automatically updated to include the new fields, labels, and frames based on the fields selected in the Fields window of the Report Wizard.

Saving and Running the Report

Up to this point, all changes made to the report have only been saved in memory. If the Report Builder tool is closed without saving changes, all changes would be lost. To save the report, click on the Save icon in the tool palette or select File/Save from the main menu. Because this is the first time the report has been saved, the Save window is displayed, allowing the developer to determine the storage location of the report. The default extension for a report is .RDF – Report Definition File. The Report Definition File (RDF) is the source code for the report. The RDF is the source file used for maintenance. The code that is distributed and executed by users is the .REP file or the executable code. To create a .REP file verify that the correct report is open and active in the Report Builder product. Select File/Administration/Compile Report from the main menu or press CTRL+T. Specify the file name as well as the directory.



The report can be executed from within the Report Builder product by clicking on the Run icon in the tool palette. You may also select Program/Run Report from the main menu. During report formatting, a status window is displayed indicating that work is in progress.

Multiple Group Reports

Multiple groups can be created for a single report, thus causing the report to print database information at different frequencies. A break report is created by pulling a repeated column out of the original group, and placing it in a new group.

Conculsion

Oracle8i introduced many new additions to the SQL programming language. The Returning clause is very similar to the SELECT . . . INTO statement in PL/SQL and allows the value of a recently completed DML statement to be stored in a local variable. The RANK function can be used to determine the "top-n" values in a group of values. The TRIM function can be used to trim both leading and trailing characters from a character string. The ROLLUP and GROUPING options provide sub-totals and grand totals for reporting purposes.

About the Author

Elizabeth Boss is President of Boss Consulting Services, Inc. She has more than 15 years of experience in application development and database administration as a database administrator, consultant, instructor, and curriculum developer. As a senior consultant/instructor, Elizabeth has worked directly with customers in all phases and aspects of the design, development, and administration of Oracle systems. She is a frequent presenter at international and local user groups, and, in 1997, was listed among the top 25 speakers at the IOUG-A Conference.

Elizabeth can be reached at:

Boss Consulting Services, Inc.

710 Kings Deer Point

Monument, CO 80132

Phone: (877)489-7745 Fax: (719)481-5820

E-mail: eboss@boss-consulting-inc.com

Web: www.boss-consulting-inc.com