PEOPLESOFT

Creating PeopleSoft Reports Using XML Publisher

Table of Contents

BEFORE YOU BEGIN…

Use this guide during class to follow the topics as presented. The instructor may also provide additional materials to support the training outlined in this guide. After class, use this guide as a reference document for completing tasks within the PeopleSoft system.

INTENDED AUDIENCE

This guide is intended for personnel who are responsible for creating reports for the PeopleSoft system.   BI Publisher training assumes the trainee has attended a Basic and Advanced Query class and/or has basic query writing skills.

HOW THIS GUIDE IS ORGANIZED

This guide is organized into chapters that contain the topics your instructor will cover in class. Some chapters may have corresponding practices that follow the instructor's presentation and individual exercises for you to complete on your own.

SYMBOLS AND CONVENTIONS

The following conventions are used in this guide to help you distinguish between various types of information:

SYMBOLS AND CONVENTIONS	
SYMBOL	**HOW IT IS USED**
bold text	Command and toolbar buttons that you click. Menus, text and radio buttons that you select. Check boxes you turn on or off.
Bold italic text (red)	Text you type.
<bold text>	Function keys on your keyboard that you press.
Italics text	Identifies a Page name. Identifies a Field name.
Hyperlink (blue)	Indicates a link to another page.
	Procedural information.
	Warnings and cautions that require careful attention. Appears in
	PeopleSoft information – definitions, helpful hints. Appears in the page margin.

SYMBOLS AND CONVENTIONS	
SYMBOL	HOW IT IS USED
	Note – Noteworthy comments or important additional information—generally about the item immediately preceding the note. Appears in the main body of the document.
	Noteworthy comments or important additional information—generally used to call out specific client-related information about a series of steps or the topic being discussed. Appears in the page margin.

You are encouraged to ask your instructor questions throughout the course.

CHAPTER STRUCTURE

Most chapters are structured the same way and generally consist of the following:

- **Objectives** are found at the beginning of the chapter and describe the material to be presented.
- **Topics** explain the various concepts. Some topics contain practices and exercises.
- **Procedures** are step-by-step instructions for completing a procedure that the instructor and class participants walk-through together.
- **Exercises** are scenarios for you to work through on your own during class time.

COURSE CONTENT

The guide includes five chapters and four appendices:

Chapter 1, *"Introduction to BI Publisher",* explains the course objectives. Provides a brief review of BI Publisher.

Chapter 2, *"Install Oracle BI Publisher Desktop",* shows the steps in installing the BI Publisher for Word Add-In.

Chapter 3, *"Create or Modify and Existing Query",* explains the method to create or modify queries.

Chapter 4, *"Create and Register a Data Source"*, shows how to register the query and create sample data or the schema.

Chapter 5, *"Create an RTF Template"*, reviews the creation of an RTF template in Microsoft Word.

Chapter 6, *"Define a New Report",* explains linking the RTF template to the data source within PeopleSoft.

Chapter 7, *"Run and View the XML Publisher Report"*, shows how to run a BI Publisher report in PeopleSoft.

COURSE OBJECTIVES

The purpose of this course is to provide the skills needed to effectively use BI Publisher. This course covers how to:

- Define Data Sources
- Create and Update RTF Template
- Upload Report Definitions
- Run and Review BI Publisher Reports

CHAPTER 1: Introduction to BI Publisher

Oracle Business Intelligence Publisher (BI Publisher, formerly XML Publisher) is an enterprise reporting solution that streamlines report and form generation. A primary feature of Oracle's BI Publisher product is the separation of the data extraction process from the report layout. BI Publisher enables you to design and create report layout templates with the more common desktop applications of Microsoft Word and Adobe Acrobat, and renders XML data based on those templates. With a single template, it can generate reports in many formats (PDF, RTF, Excel, HTML, and so on) in many languages. This approach to reporting can dramatically reduce report maintenance, enabling power business users to adjust report templates without involvement of IT resources.

The following diagram illustrates the concept of BI Publisher.
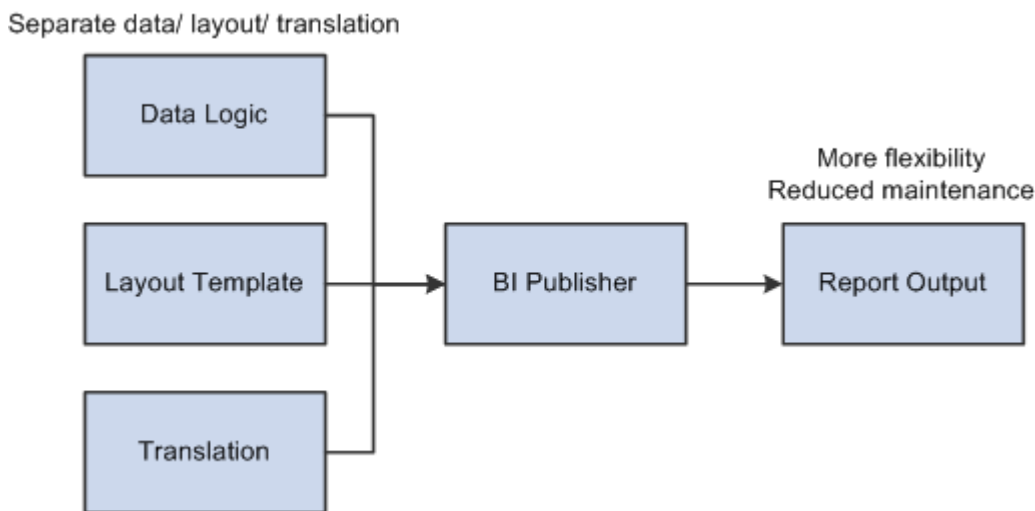
Select features of Oracle's BI Publisher product have been integrated into and enhanced for use with PeopleTools. Within PeopleSoft applications, this is referred to as XML Publisher (XMLP).

There are four phases to creating BI Publisher Reports:

1. Create and Register Data Source
2. Create Report Template
3. Define BI Publisher Report
4. Run and View BI Publisher Report

This guide will review each step.

CHAPTER 2 –Install Oracle XML Publisher Desktop

The XML Publisher Desktop/Template Builder is shipped with PeopleTools. You can also download the software from the PeopleSoft XML Publisher page.

1. From the left navigation bar in PeopleSoft Applications, select **Reporting Tools> XML Publisher> Setup > Design Helper** to download the Template Builder.


2. Download the Template Builder by clicking the **Plug-in** link. You can save the download anywhere (for example, in **c:\temp**).


3. After the download is complete, install XML Publisher Desktop. Open File Explorer and navigate to the download directory (for example, **c:\temp**). The following example shows the expanded files under **c:\temp\xmlp_desktop**. Double-click **setup.exe** to start the installation process. A set of installation wizard pages guide you through the installation process.
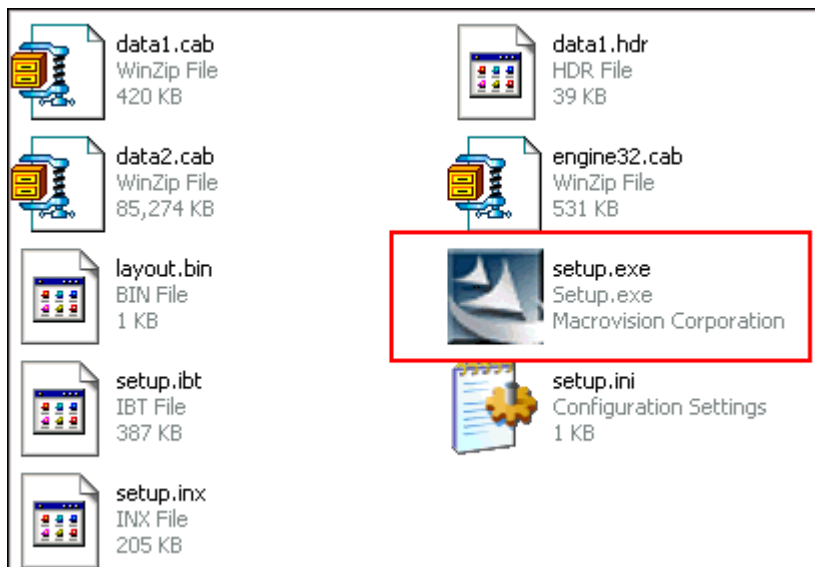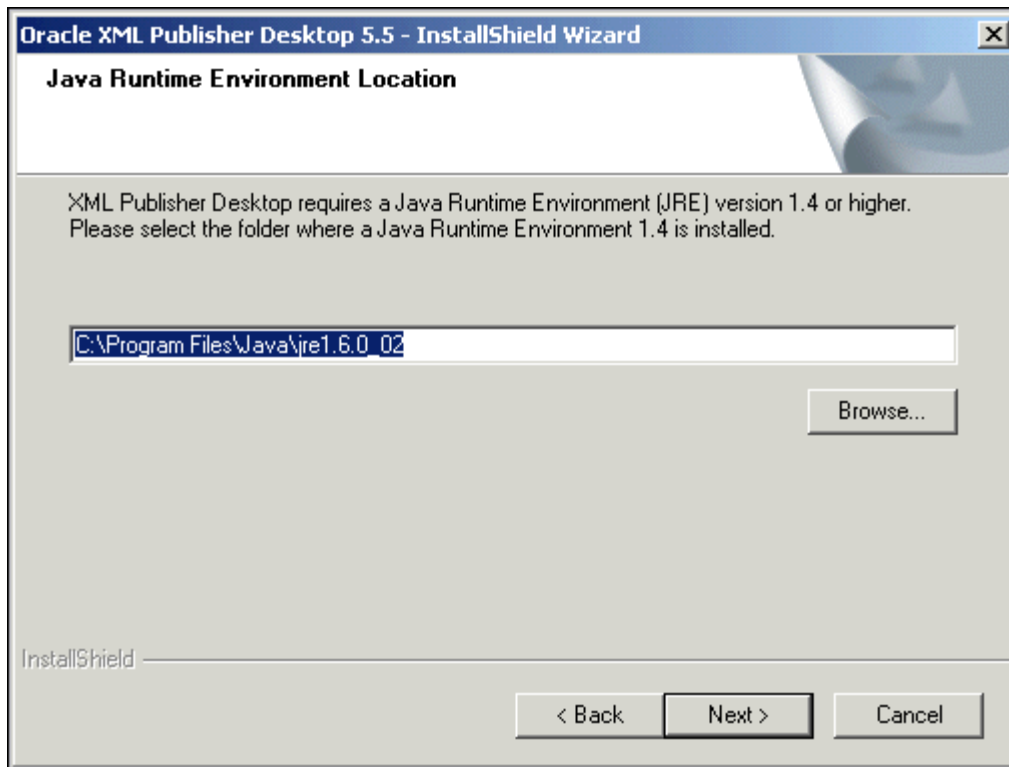
4. Select **English**, and then click **Next.**
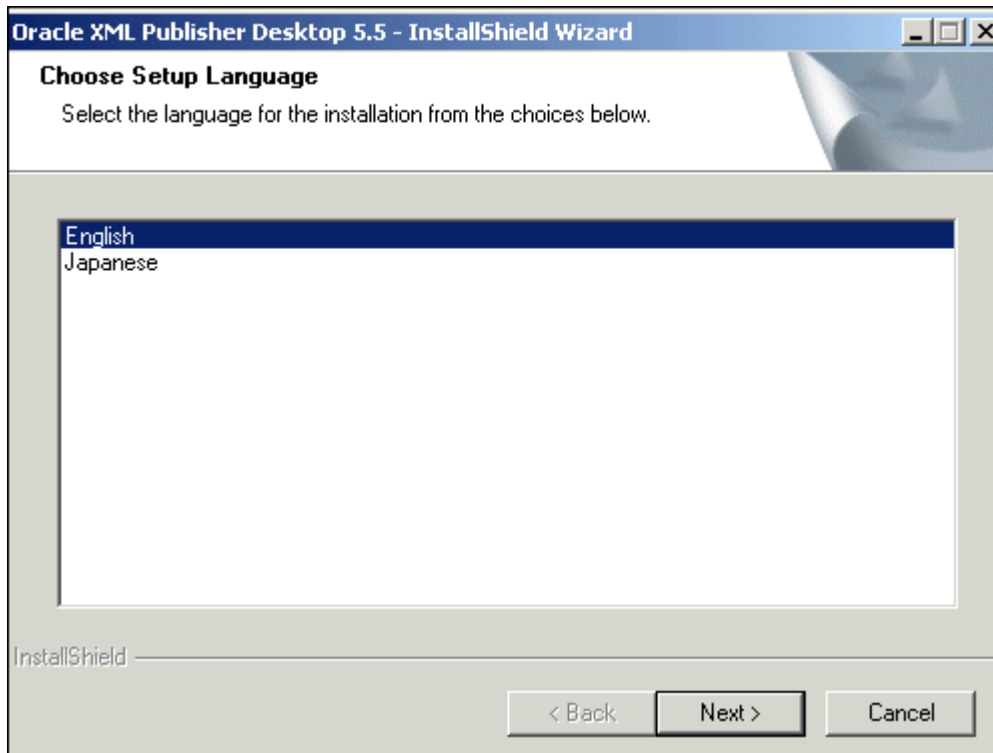
**5.** Ensure that no previous version of XML Publisher Desktop is installed. Click **Next**.
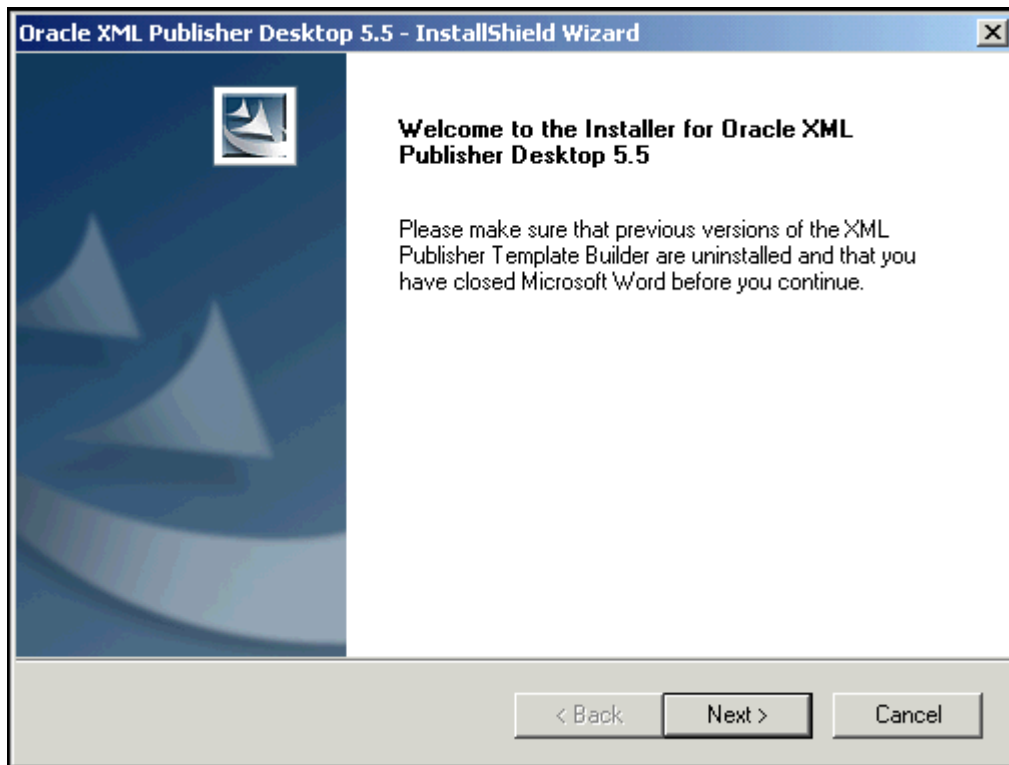
6. The XML Publisher Desktop requires the installation of Java Runtime Environment (JRE) version 1.4 (or later versions). Enter the location for Java Runtime Environment and click **Next**.
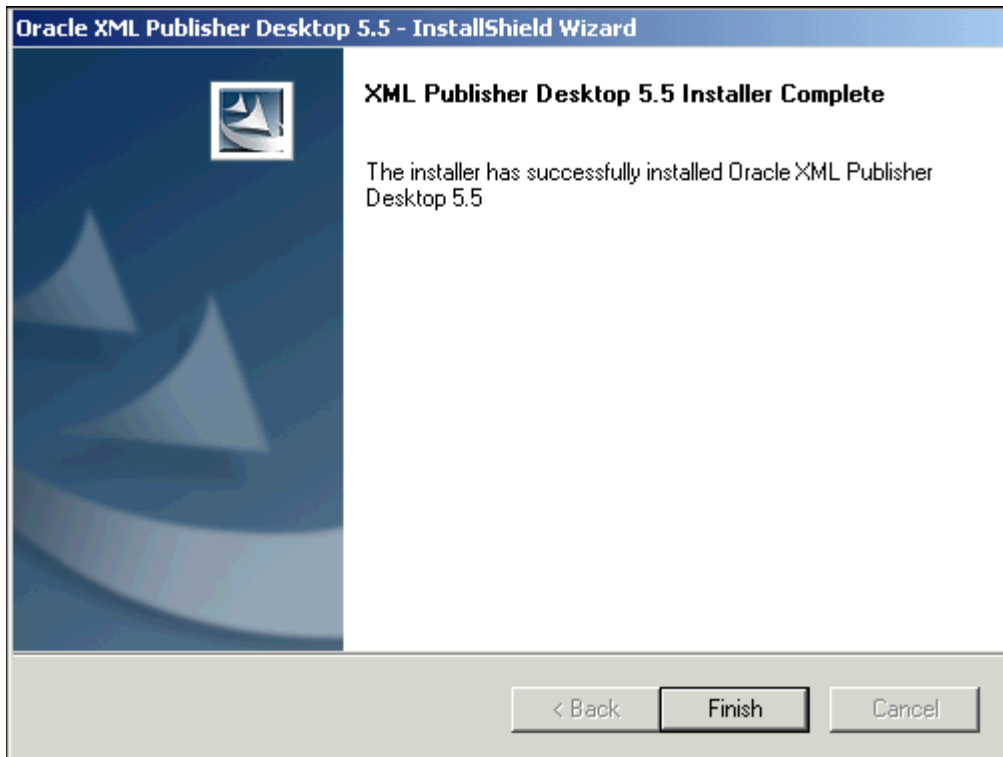

7. Deselect **Open the Word Template Builder Tutorial file** and click **Next**. Enter the name of the folder where you will install XML Publisher Desktop and click **Next**.
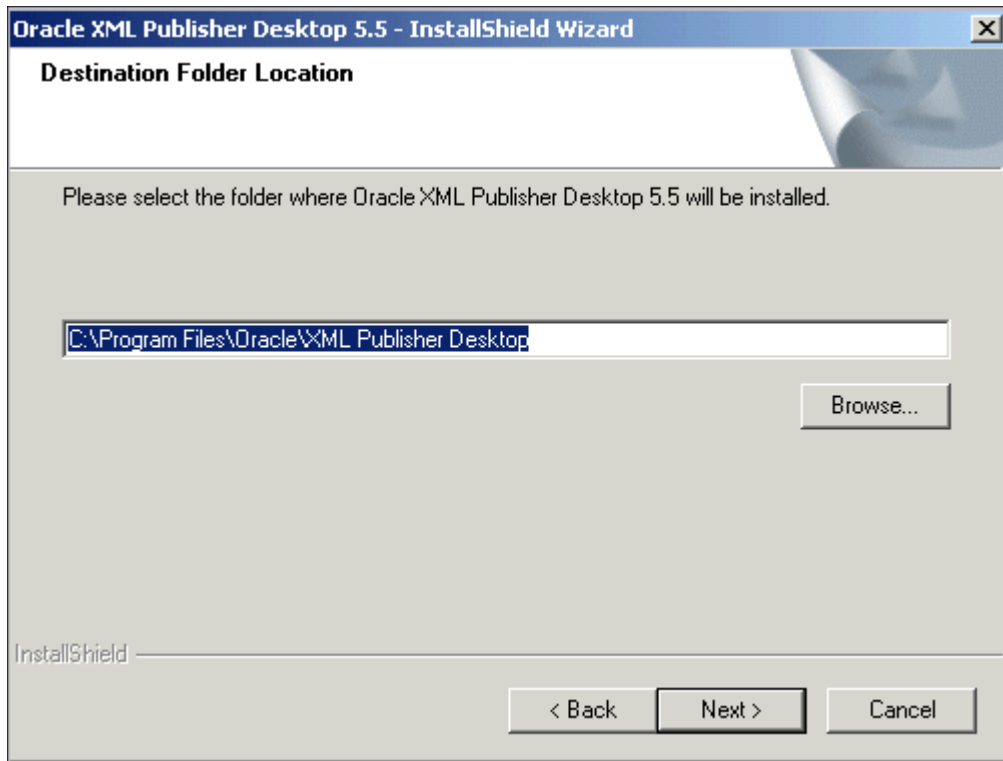
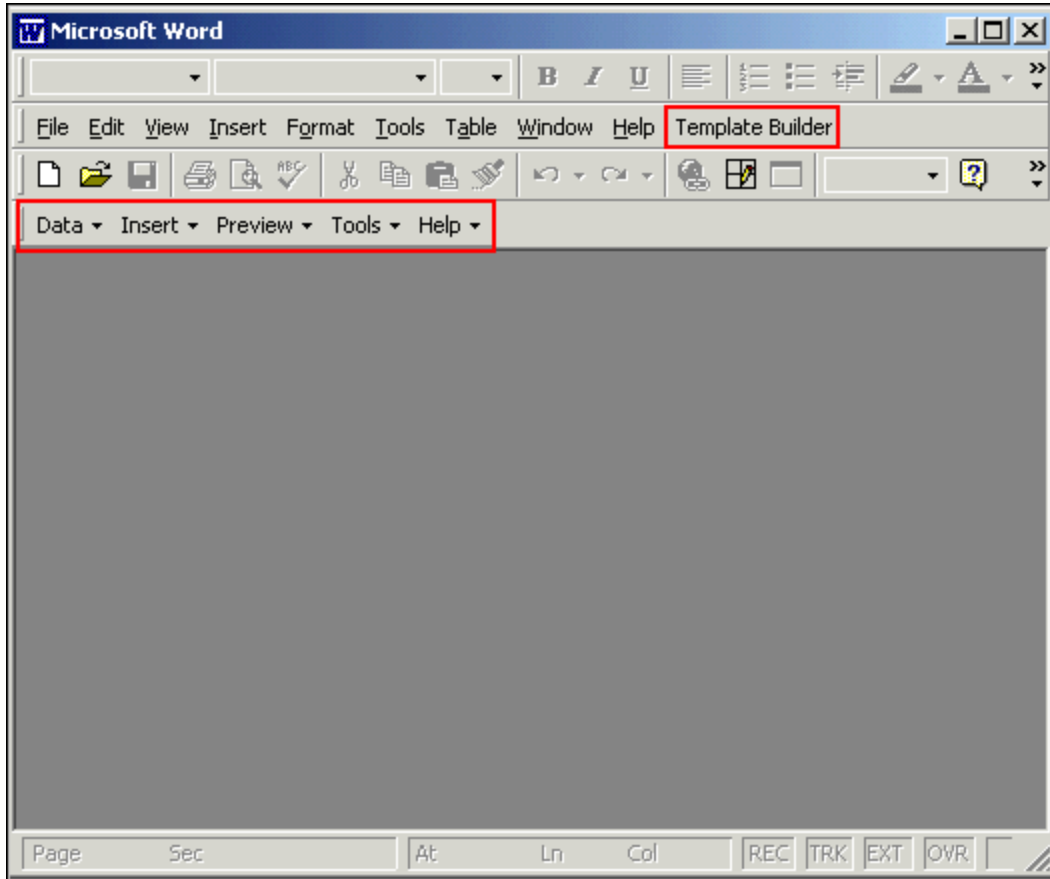**8.** Click **Install** for the installation to start.
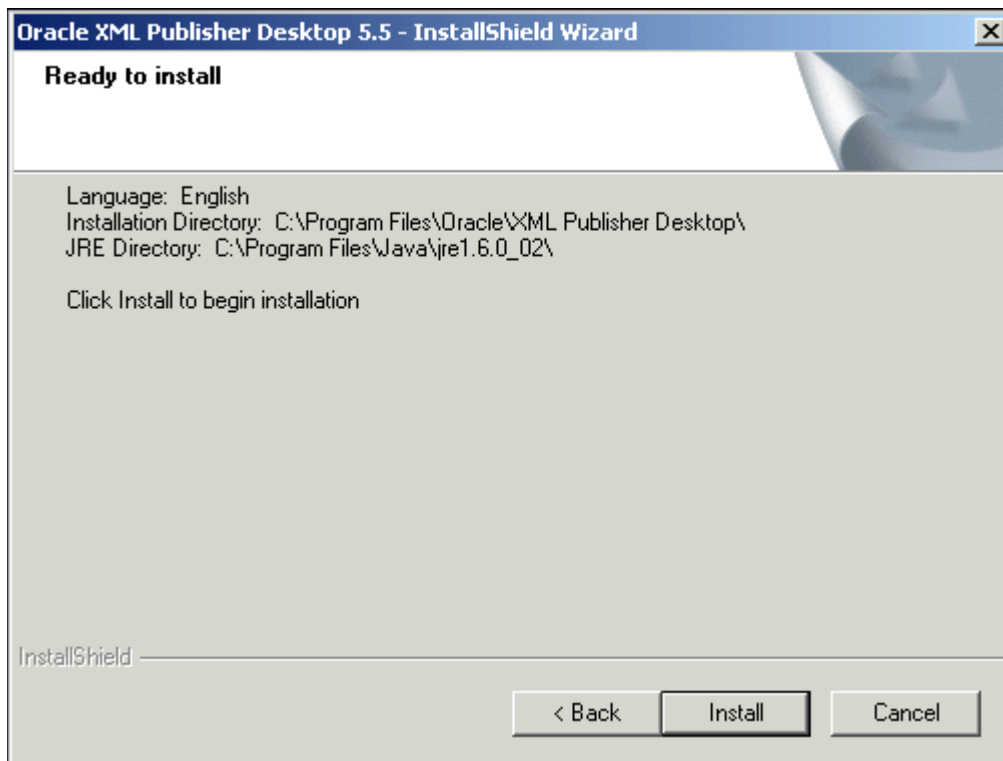
9. When the installation is complete, click **Finish**.

10. After XML Publisher Desktop is installed, open Microsoft Word. Notice a menu item named **Template Builder** in the menu bar and a new toolbar. (NOTE: The template builder may also be in 'Add-In'.
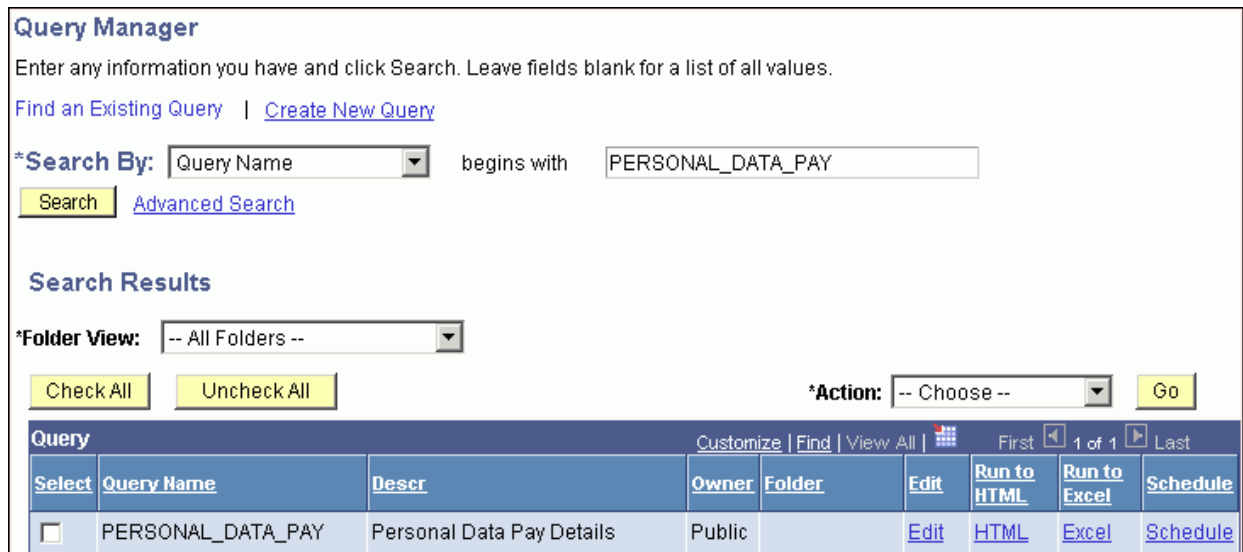
CHAPTER 3 – Create or Modify an Existing Query

BI Publisher uses Query and Connected Query as data sources for creating reports. As users usually have queries already created, these can be used in BI Publisher.

Practice: Modifying an Query- Step-by-step example

Initially you modify an existing query, **PERSONAL_DATA_PAY**, and apply criteria on **DEPTID** to reduce the volume of data. To modify the query, perform the following steps:

1. Log in to your PeopleSoft Application. Then, from the left menu, select **Reporting Tools > Query > Query Manager**. Enter **PERSONAL_DATA_PAY** in the '**begins with'** field. The query **PERSONAL_DATA_PAY** will return.

2. To modify the query, click the **Edit** link under the **Edit** column. All the fields in the query are displayed.

3. Because the filter will be on **DeptID**, click the filter icon on **DeptID**.

4. On the **Edit Criteria Properties** page, select **in list** from the **Condition Type** drop-down list.
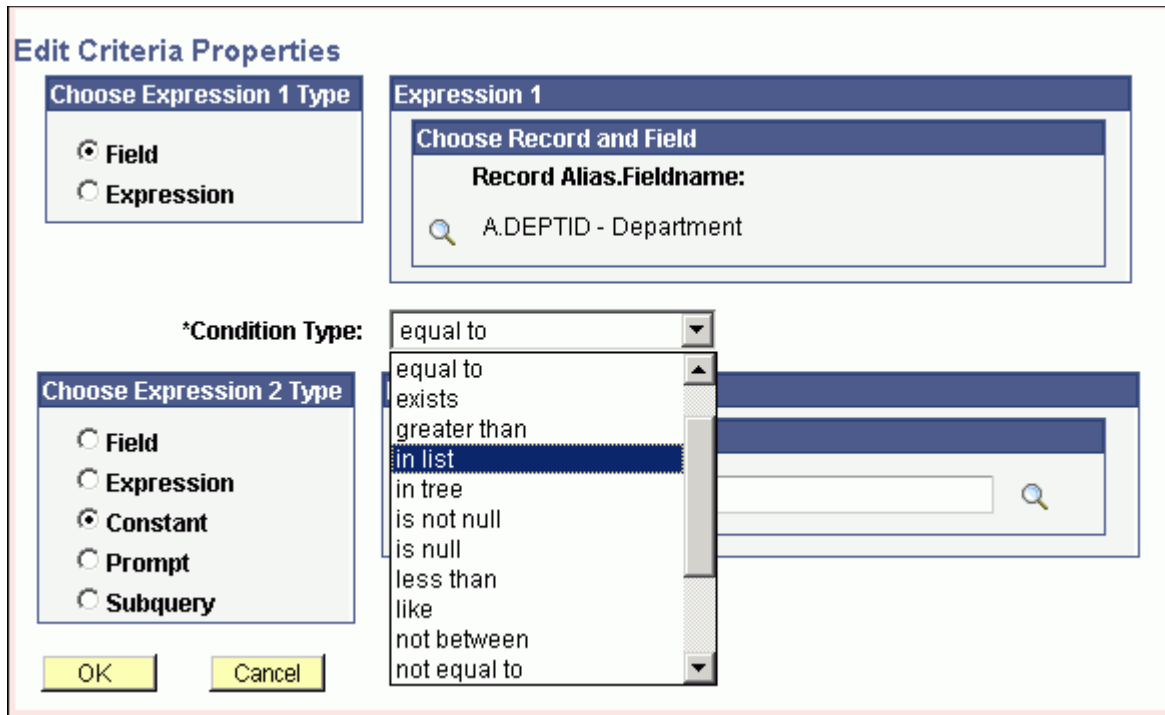
5. Click the search icon for **List Members** in the **Edit List** box.
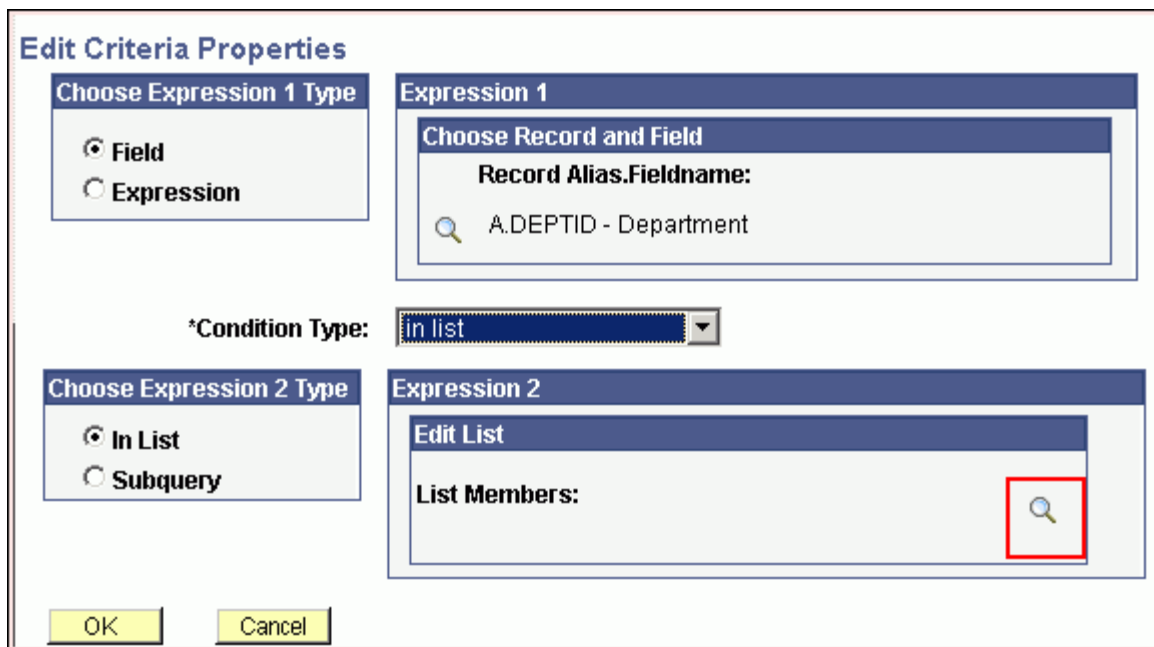
6. Enter **0103** and click **Add Value**.

No values have been added yet.

Value: 0103 | Add Value | Search

Add Prompt

OK | Cancel

7. Similarly, add the departments **0104** and **0106**. When all the departments are entered for the criteria, click **OK**.

List Members — Customize | Find | 🖾 | ▥ — First ◀ 1-3 of 3 ▶ Last

☐	0103
☐	0104
☐	0106

Value: [ ] | Add Value | Search | Delete Checked Values

Add Prompt

OK | Cancel

8. On the **Edit Criteria Properties** page, click **OK**.

Choose Expression 1 Type
- ◉ Field
- ◯ Expression

Expression 1

Choose Record and Field

Record Alias.Fieldname:

🔍 A.DEPTID - Department

*Condition Type: in list ▼

Choose Expression 2 Type
- ◉ In List
- ◯ Subquery

Expression 2

Edit List

List Members: ('0103','0104','0106') 🔍

OK | Cancel

9. Click the **Run** tab and run the report. Make sure only three departments (ADMIN, ADMISSION, and ALL DEPTS) are returned. The query should return rows.

| | Records | Query | Expressions | Prompts | Fields | Criteria | Having | View SQL | **Run** |

View All | Rerun Query | Download to Excel | Download to XML   First ◄ 1-100 of 273 ► Last

	ID	DeptID	Job Code	Position	Combo Code	Sum Annual Rt	Sum Monthly Rt	Sum Hrly Rate
1	1035	0103	020730	00000200	110001030000	60814.462	5067.872	29.237722
2	10448	0103	020730		310001030000	0.000	0.000	23.888900
3	10732	0103	020730	00001493	110001030000	51396.720	4283.060	26.357278
4	11768	0103	020087	00001655	110001030000	59277.764	4939.814	28.498925
5	12055	0103	020724	00001704		83410.072	6950.839	40.100996
6	14447	0103	020727	00002621	210001030000	39719.085	3309.924	38.191428
7	14448	0103	020730	00001853	110001030000	51396.692	4283.058	26.357278
8	16254	0103	099001		310001030000	572.707	47.726	11.013600
9	16959	0103	020671	00002538	110001030000	62473.230	5206.103	32.037554
10	17752	0103	020734	00001853	110001030000	72052.498	6004.375	34.640624
11	17756	0103	020730	00001493	110001030000	63125.410	5260.451	30.348755
12	18322	0103	020671	00002621	210001030000	31197.361	2599.780	29.999770
13	18505	0103	020671	00002538		58000.001	4833.333	29.743590
14	18643	0103	999999			0.000	0.000	0.000000

Notes

CHAPTER 4 – Create and Register a Data Source

Understanding Data Generation

In BI Publisher, the data extraction is separate for the data presentation. Sample data can be used to design your RTF template and map your PDF templates. Data schema was used in previous releases for the bursting feature and is still available for backwards compatibility and bursting. If PeopleSoft queries are used for data extraction, the system will generate the schema; for all other data sources, you must create the data schema using tools outside of the PeopleSoft system.

XML Publisher can register PS/Query, Connected Query, and XML files as a data source, but you can generate XML data using any means including PS/Query, SQR, Application Engine, PeopleCode, File Layout, and so forth.

For RTF template-based reports, design your data source XML structure using groupings that resemble the groupings needed for the output report. This improves runtime performance by preventing unnecessary grouping by the formatting engine.

Understanding Data Source Registration

A data source registers the schema and sample data design files. The extracted application fields from the data source files are placed into the template files to create the final report.

The data source can be PS Query, Connected Query, or XML files.

Benefits of data source registration include the ability to:

- Reuse previously registered data sources with multiple report definitions.
- Take advantage of built-in bursting features.
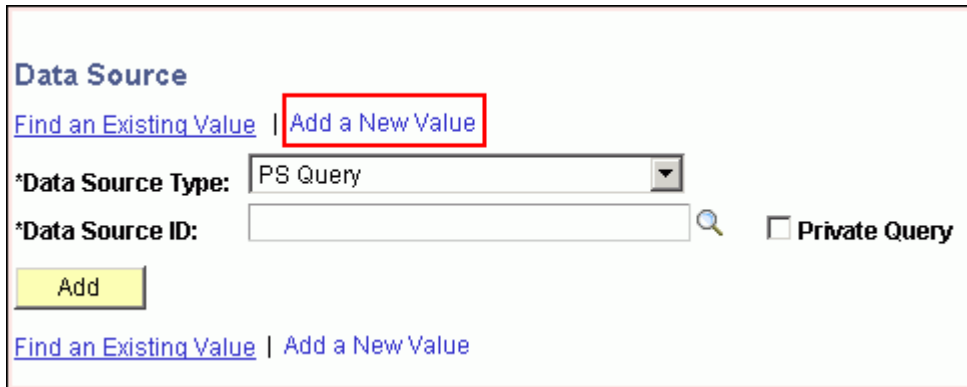
Registering Data Sources

1. Log in to your PeopleSoft Application. Then, in the left navigation bar, expand **Reporting Tools > XML Publisher > Data Source**.

2. Because you will use a PS query, click **Add a New Value**. Select **PS Query** as the **Data Source** type and click the **Look Up Query** search icon for **Data Source ID**.

3. Enter **P** in the **begins with** field and click the **Lookup** button.

4. Scroll down and click **PERSONAL_DATA_PAY**.

5. Click the **Add** button on the **Data Source** page.

6. On the **Data Source** page, in the **Data Source Properties** section, enter the **Description** as **Departmental Annual Salary**. Click **Generate** under the **Generate File** column for **Sample Data File** and **Schema File**.

7. After the data source is generated, an XML file for **PERSONAL_DATA_PAY** is created. Click the **Save** button.

8. Click the **PERSONAL_DATA_PAY.XML** file. The browser appears and displays the XML data in the file. Save the XML file in the **C:\temp** folder.

```
<?xml version="1.0" ?>
- <query numrows="10" queryname="PERSONAL_DATA_PAY" x
    xsi:noNamespaceSchemaLocation="">
  - <row rownumber="1">
      <EMPLID>EMPLID samp</EMPLID>
      <DEPTID>DEPTID sam</DEPTID>
      <JOBCODE>JOBCOD</JOBCODE>
      <POSITION_NBR>POSITION</POSITION_NBR>
      <ACCT_CD>ACCT_CD sample data</ACCT_CD>
      <ANNUAL_RT>861669449102975.927</ANNUAL_RT>
      <MONTHLY_RT>913782747109801.774</MONTHLY_RT>
      <HOURLY_RT>470060783479.334436</HOURLY_RT>
    </row>
  - <row rownumber="2">
```

CHAPTER 5 – CREATE REPORT TEMPLATES

Using RTF Templates

RTF templates support most XSL functionality and can be designed with robust processing and formatting code.

Creating RTF Templates

You use a Microsoft Word plug-in to build an RTF template. You use a preexisting RTF template file named **Personal_Data_Pay.rtf**.

- Load XML Data in a Word Template
- Create a Pie Chart and a Bar Chart
- Create a Table

Load XML Data in a Word Template

You open a base template and load the XML data. To load the XML data, perform the following steps:

1. Open the file named **Personal_Data_Pay.rtf** in Microsoft Word
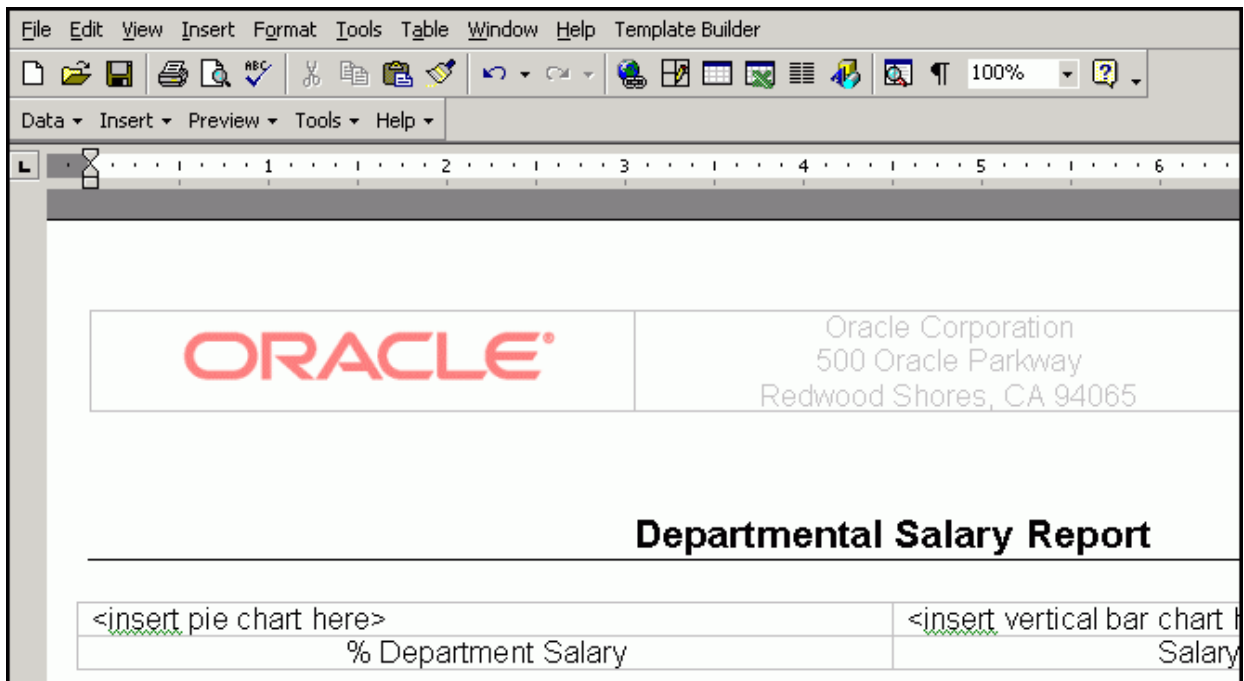
2. Click **Data** and select **Load XML Data**.
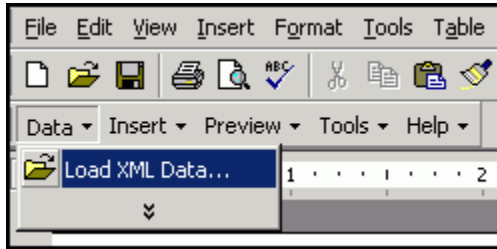
3. In the **Please select XML data** dialog box, select the **PERSONAL_DATA_PAY.xml** file and click **Open**.
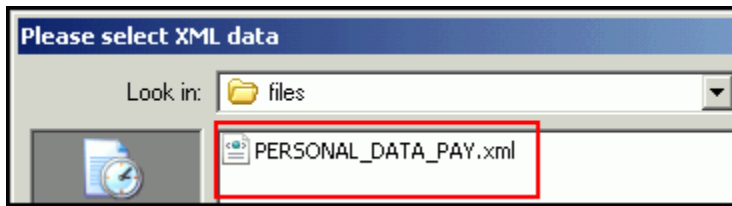
4. When the "Data loaded successfully" message appears, click **OK**.
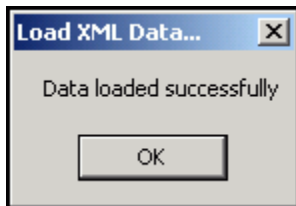
Create a Pie Chart and a Bar Chart

If you do not want to create a pie chart or a bar chart, skip this section.

To create a pie chart and a bar chart, perform the following steps:

1. From the first cell in the table, delete the text **<insert a pie chart here>**. From the menu, select **Insert > Chart**.
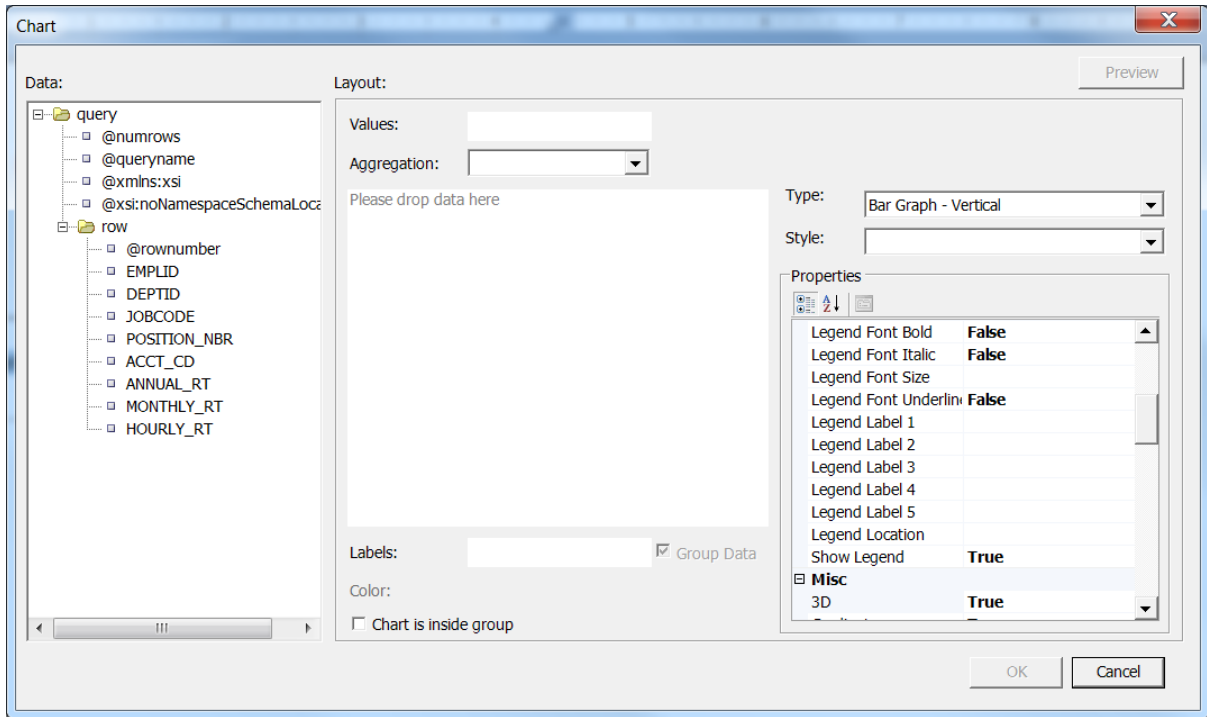
2. In the **Chart** window, select **Row** and enter the details as shown below.
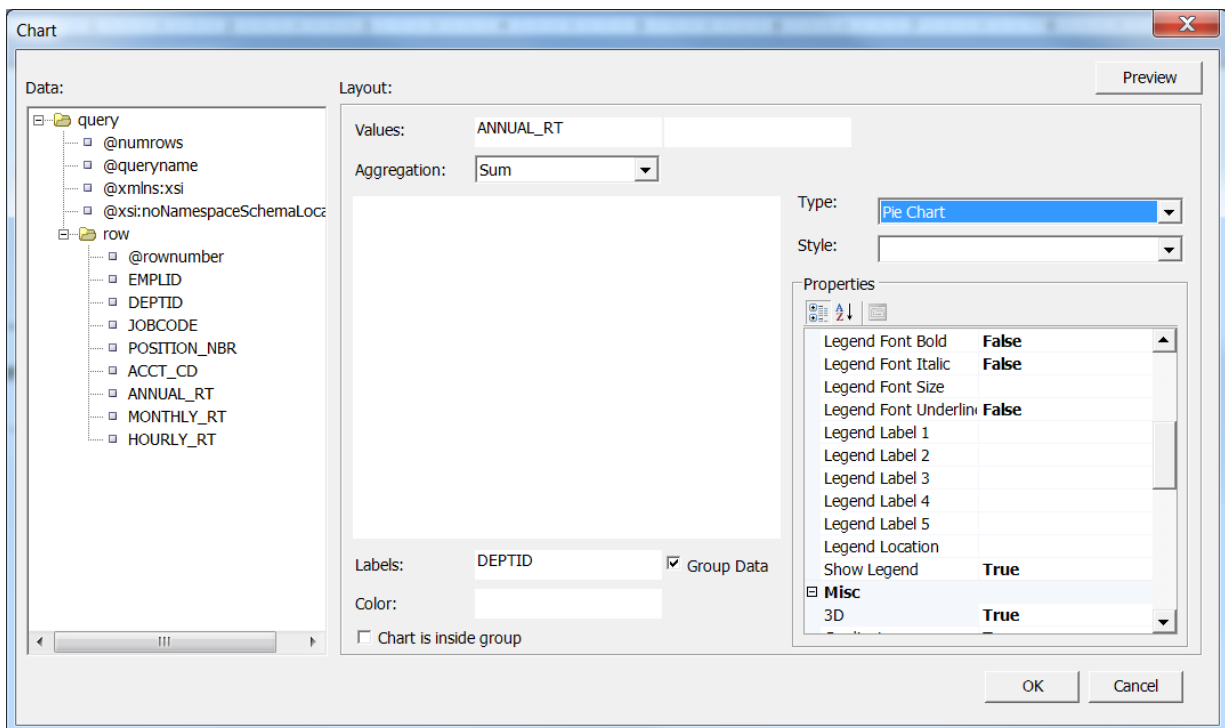
3. Click **OK**. Resize the pie chart to fit within the width of the cell.
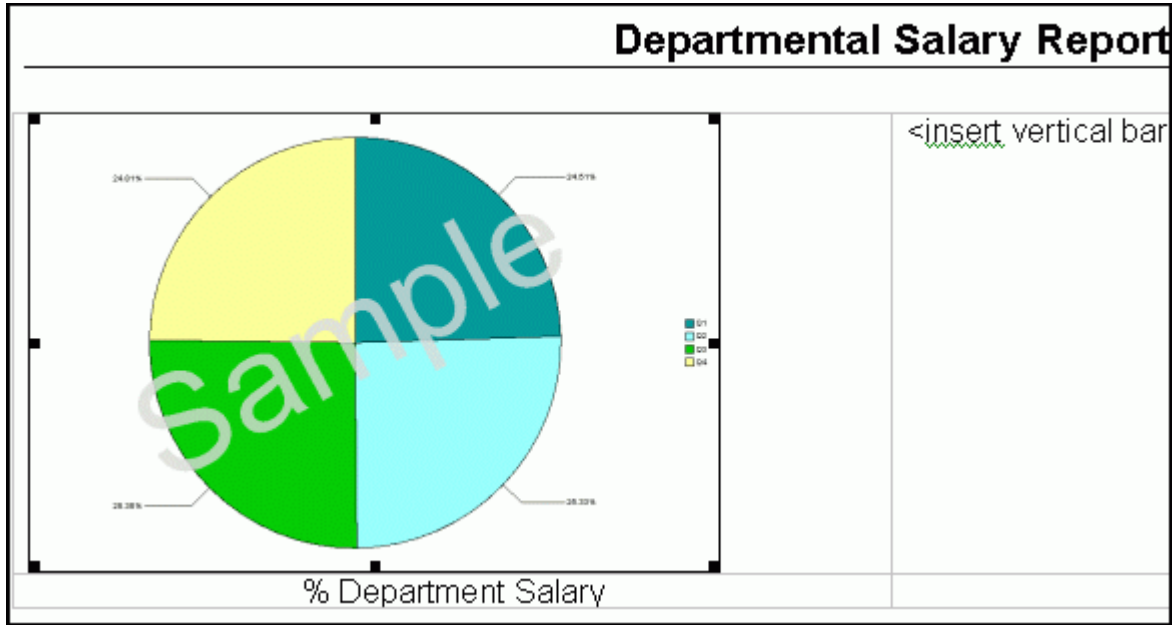
4. Similarly insert a bar chart. Delete the text **<insert a vertical bar chart here>**. Select **Insert>Chart** from the menu. In the **Chart** window, select **Row** and enter the details as shown.
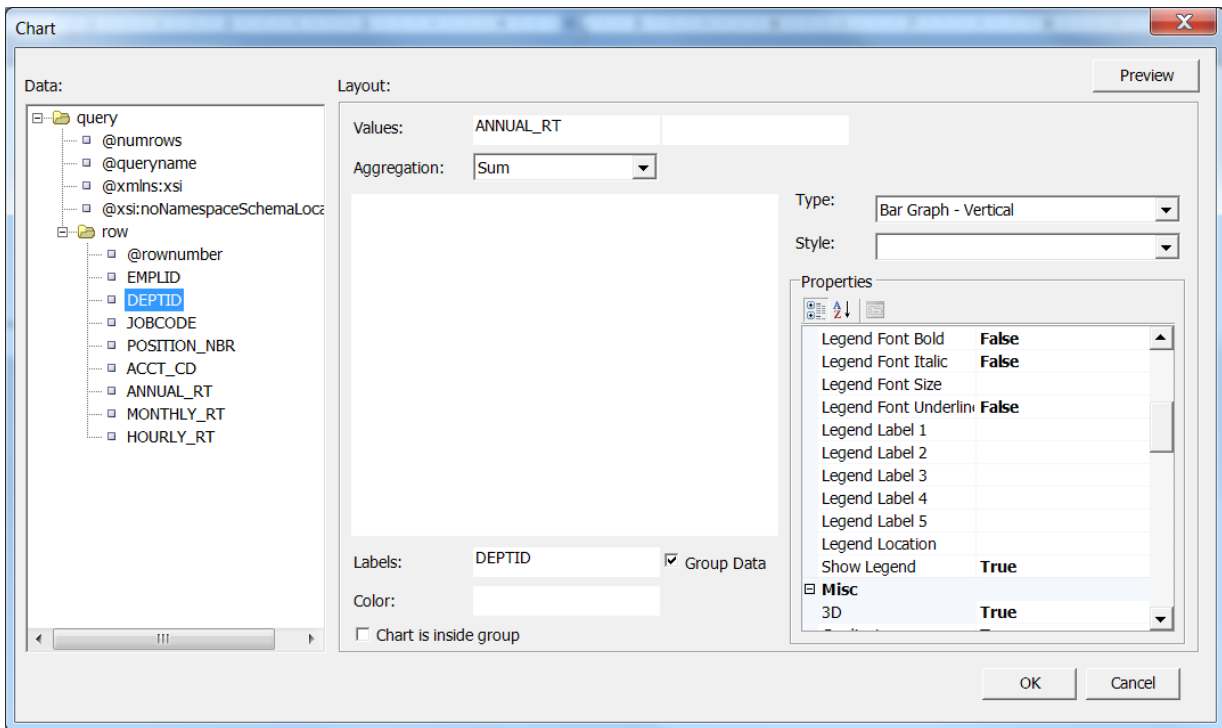
5. Click **OK**. Resize the bar chart.

% Department Salary — Salary by Department
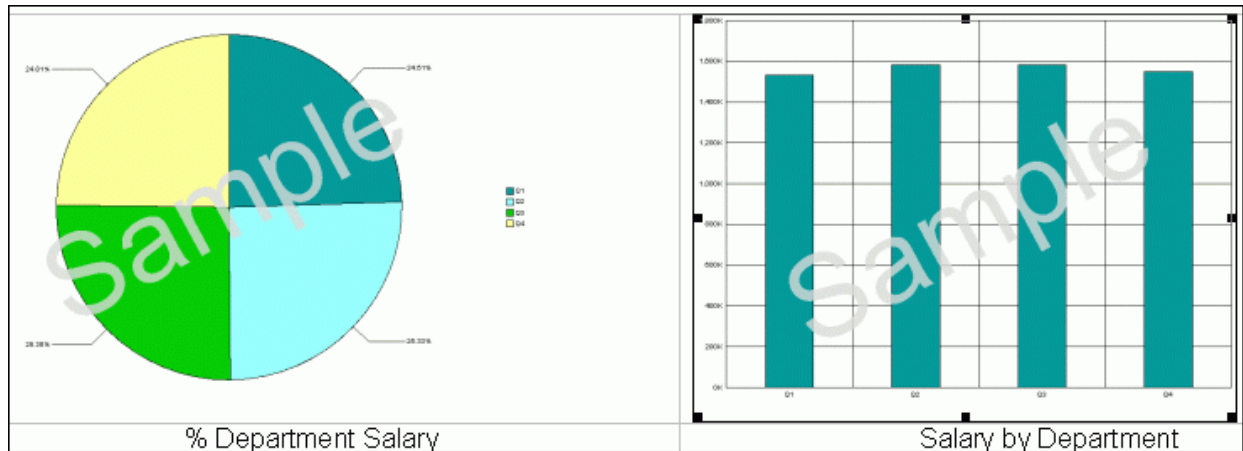
6. Save the template and preview in PDF format. Click **Preview** and select **PDF** from the drop-down list.
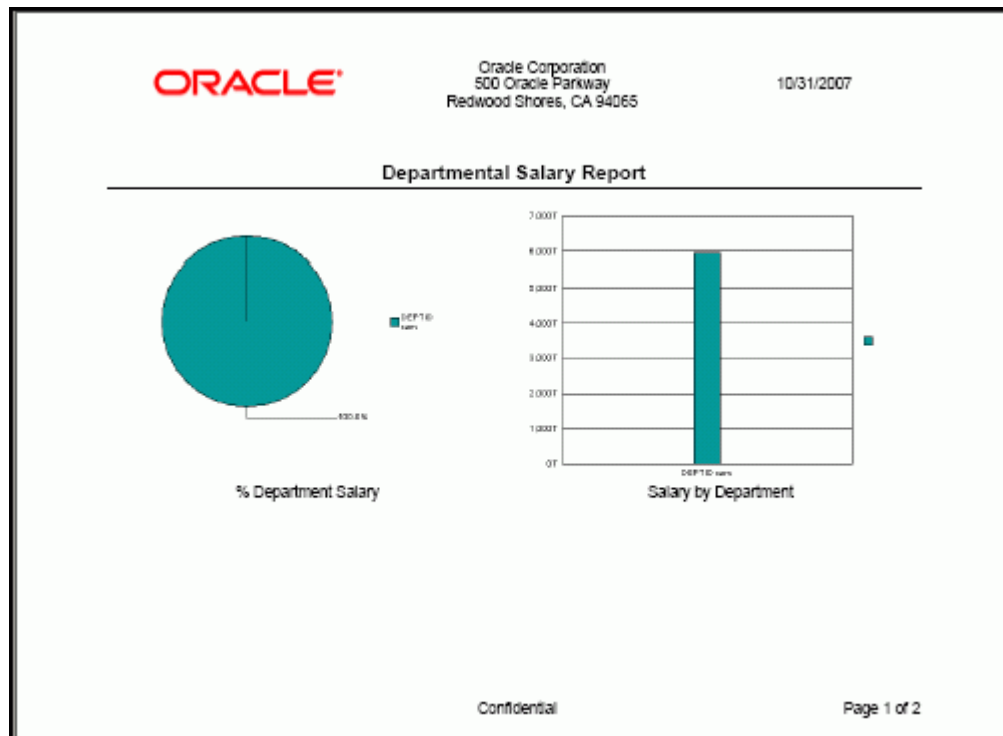
Create a Table

You create a tabular report for which you have already loaded the data. To create a table, perform the following steps:

1. Move the cursor below the table for the charts, add some blank lines, and insert a new table. Click **Insert** and select **Table/Form..** from the drop-down list.
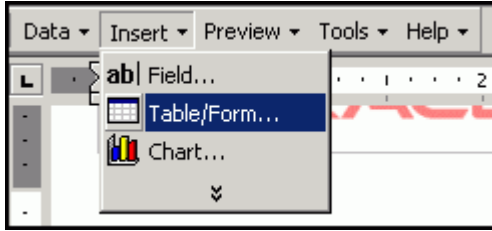
2. The Insert Table/Form window appears. Select **Row** from the **Data Source** list on the left.
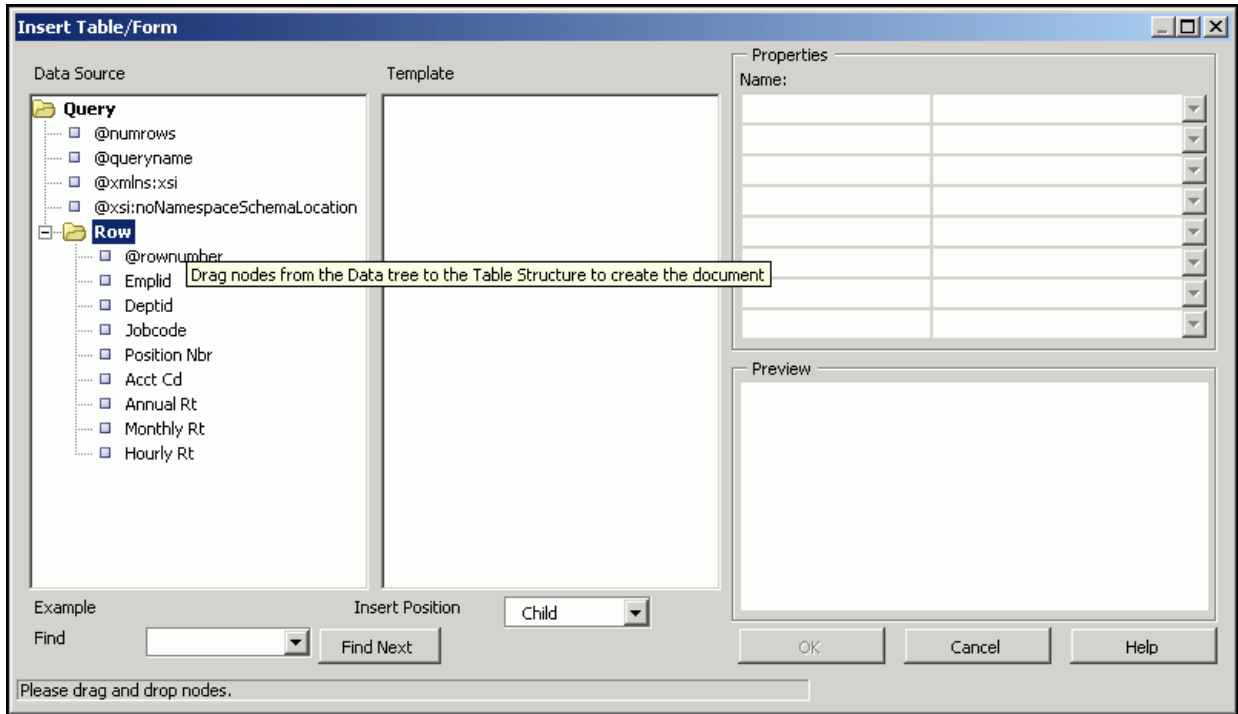
3. Drag **Row** from the left to the **Template** column and select **Drop all Nodes**.
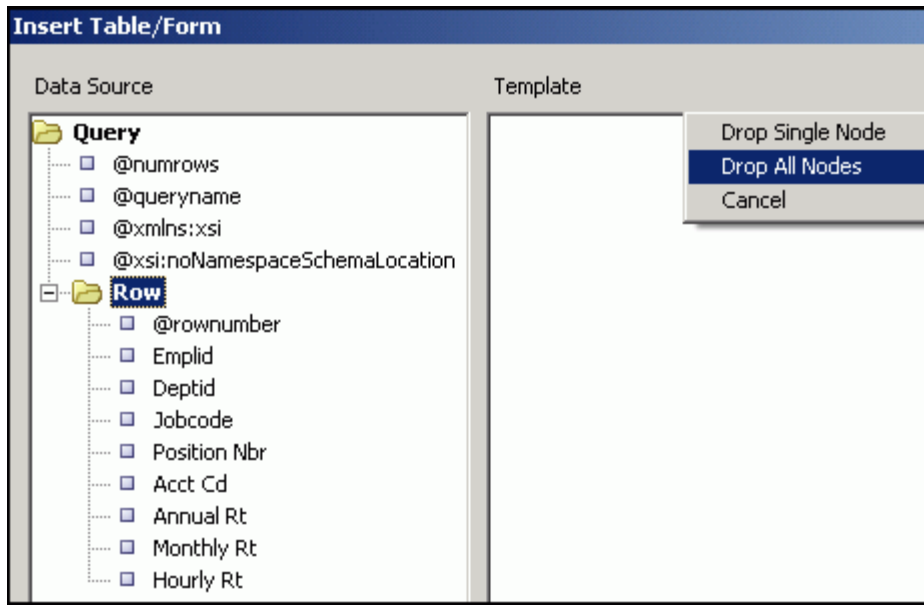
4. Delete the following fields by selecting the field and clicking the delete button:

   - @rownumber
   - Position Nbr
   - Acct Cd
   - Monthly Rt
   - Hourly Rt

   As a result, you should have four fields.
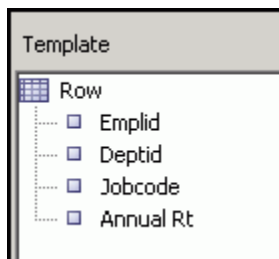
5. Provide grouping details. Select **Row** in the template column and, from the properties window, select **DEPTID** from the drop-down list for the **Grouping** property.
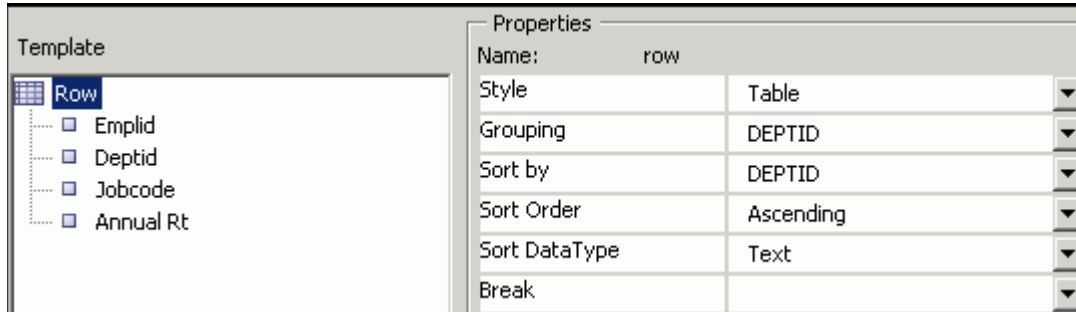
6. Click **OK**. You are returned to Word. Resize the table to match the image below by dragging the sizing handles for the columns.

7. Use Word features and select the G DEPTID field and cut and paste above the table.

8. Select the inner table and the control character E (as shown).

9. Cut and paste the selected area a few lines below the outer table.

10. Delete the outer table. Select the outer table and, from the menu, select Table > Delete > Table.
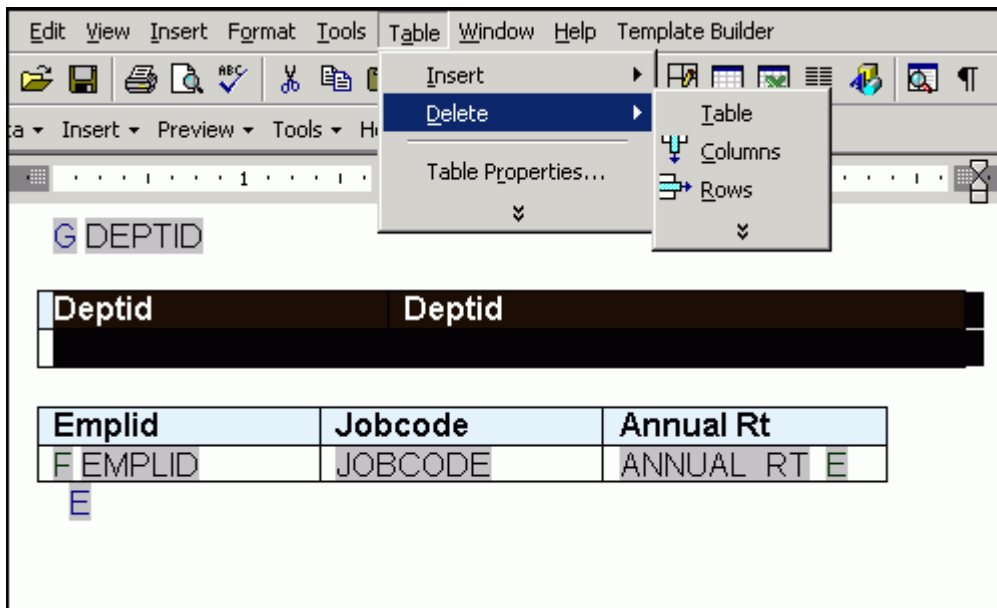
11. Enter a new row at the end of the table to display the department average annual rate. Place the cursor inside the row of the table and, from the menu, select Table > Insert > Rows Below. Enter Average Rate for the first column in the new row.

12. Change the column headings as shown.

13. Add a department average rate field to the last row in the Annual Salary Rate column. Click anywhere in the empty Annual Salary Rate column of the Total row to position your cursor. Select **Insert > Field**.
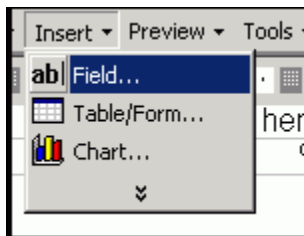
14. In the **Field** window, select **Annual Rt** and **average** for **Calculation**. Select the **On Grouping** check box. Click **Insert** and then click **Close**.
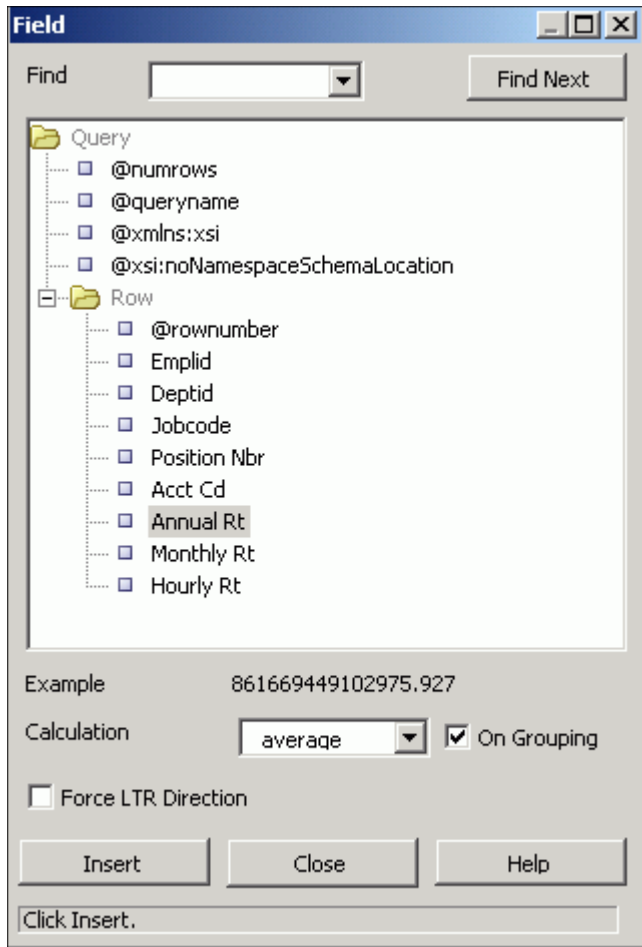
15. Your table should look like the image below:

16. Change the format of the column data for **Annual Salary Rate**. Double click **ANNUAL_RT**. The **Text Form Field Options** window appears. Change **Type** to **Number.** Select the **Number** format $#,##0.00 and edit it as shown. Enter **$999** in the **Default** number field. Click **OK.**
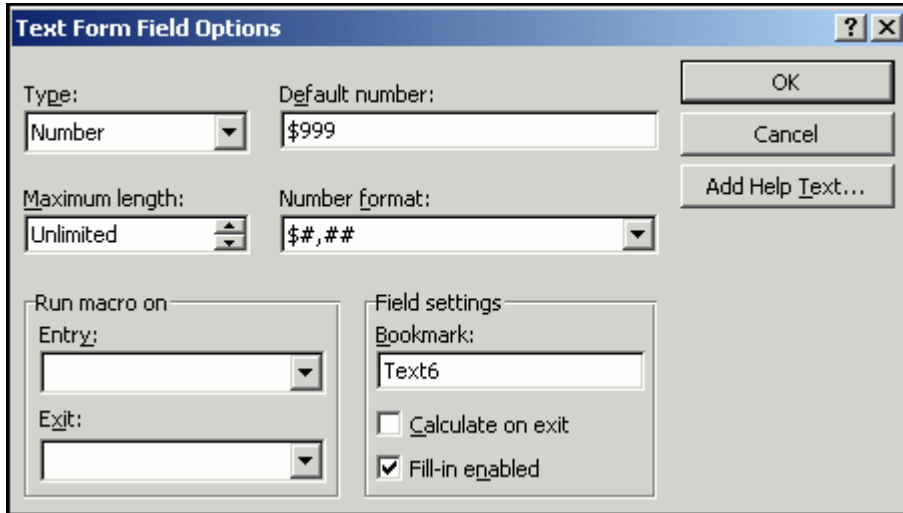
17. Similarly change the format for average **ANNUAL_RT**.

18. Save the template and preview in PDF format. Select **Preview > PDF**. The preview report displays dummy data.

You can add other Word features to the template.

Notes

CHAPTER 6 – DEFINE A NEW REPORT DEFINITION

Understanding Report Definitions

Report definitions associate a data source with template files. A data source registers the schema and sample data design files. The extracted application fields from the data source files are placed into the template files to create the final report.

A report can include multiple templates. A template is used to associate different layout formats as required by different countries and regions or as required by different channels (web posting, printer, fax, and so on).

The defined output options from the report definition are reflected on the output type and format prompts on the Process Scheduler request page when the application process that runs the report is assigned the process type of XML Publisher. Security settings for a report definition determine who can view the report when it has been run.

Report properties can be set to control formatting of the report.

With the advanced bursting feature, report generation results in separate output files when bursted reports are run through Process Scheduler.

Report definition access is based on user permission list security and roles. For example, bursting is read-only for XML Publisher power users, because only developers can set up bursting, and the page only appears when settings exist.

XML Publisher power users can start to define a report to download the sample data files to create their templates.

Create Report Definitions

You now define a report with the RTF template that you created. To define the report, perform the following steps:

1. Select **XML Publisher > Report Definition**.

2. On the **Report Definition** page, click **Add a New Value**. Enter the report name **PERSONAL_PAY**.

3. For **Data Source ID**, click the **Look up Datasource** icon.

4. Enter **P** in the **begins with** field and click the **Lookup** button.

5. From the list, select **PERSONAL_DATA_PAY** as the data source. Click the **Add** button.

6. On the **Definition** tab, enter a description for the report. Select **Active** as the **Report Status**.

7. Click the lookup icon for **Report Category ID**.

8. Select the **ALLUSER** category.

9. On the **Template** tab, upload the RTF template. Set the template **Status** to **Active**.

10. Click the **Upload** button. Browse for the **Personal_Data_Pay.rtf** template and click **Upload**.

11. On the **Output** tab, select **PDF** as the default output. Click **Save**. You can now view the report in the Report Viewer.

Definition	Template	**Output**	Security	Bursting	

Report Name: PERSONAL_PAY

General

☐ **PDF report output may be edited**
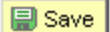
Runtime Output Format Options

Format Type	Enabled	Default
HTML	☑	☐
PDF	☑	☑
RTF	☑	☐
XLS	☑	☐

Output Location

*Location: |Any ▼|

(⊞ Add) (Update/Display) (Include History) (Correct History)
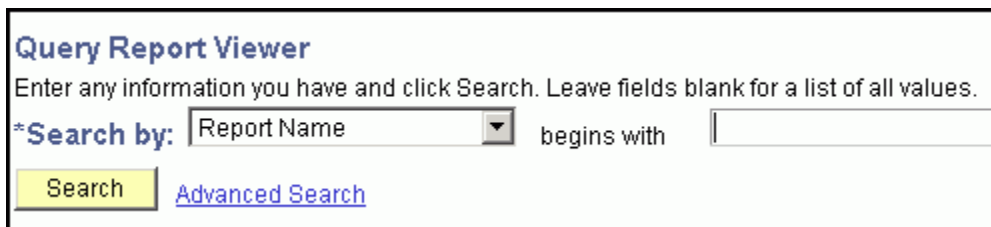
(💾 Save)

CHAPTER 7 – RUN AND VIEW THE BI PUBLISHER REPORT

1. From the left navigation bar in PeopleSoft Applications, select **Reporting Tools > XML Publisher > Query Report Viewer**.
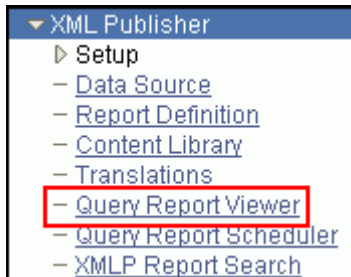
2. On the **Query Report Viewe**r page, click the **Search** button.

3. From the list of reports, select **PERSONAL_PAY** and then click **View Report**.

4. While the report is being processed, the word **Processing** appears at the top. After processing is complete, a three-page PDF report is displayed with charts and a table.

Departmental Salary Report

% Department Salary

Salary by Department

ADMIN

Emp ID	Job Code	Annual Salary Rate
KU0001	700005	$260,000
KU0209	700005	$41,600
Total		$301,600
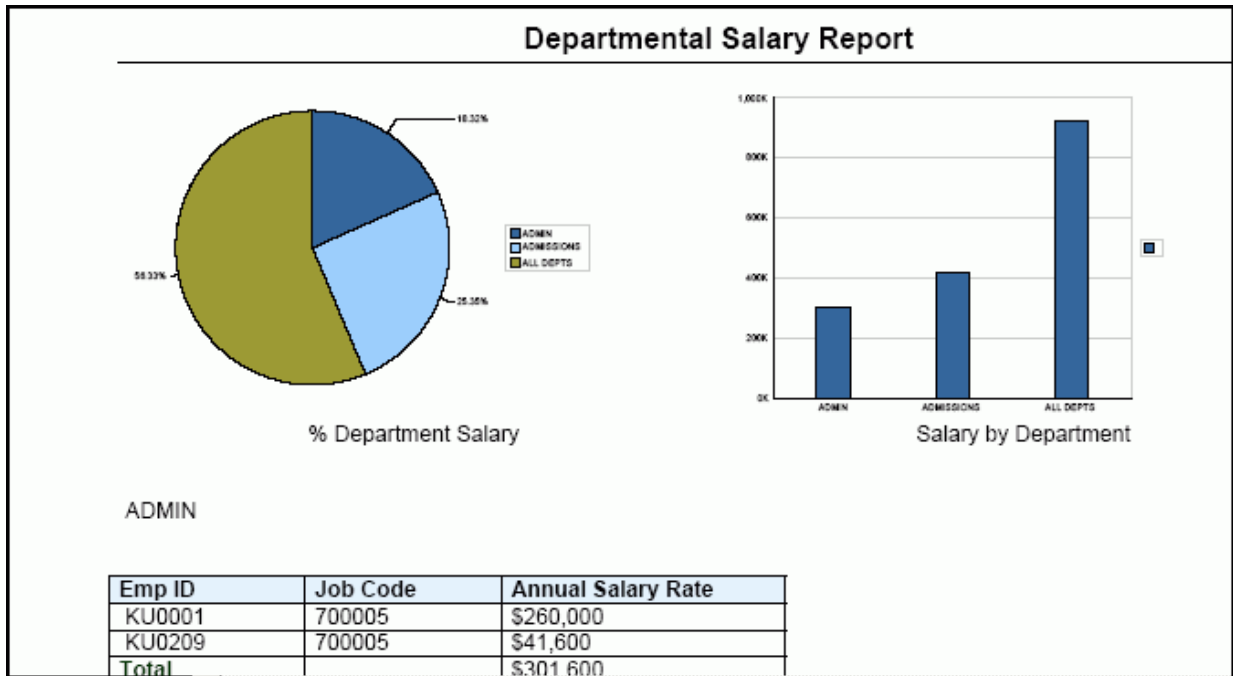
Congratulations! You just created a report in PeopleSoft Applications using XML Publisher!

Notes

Notes

Note
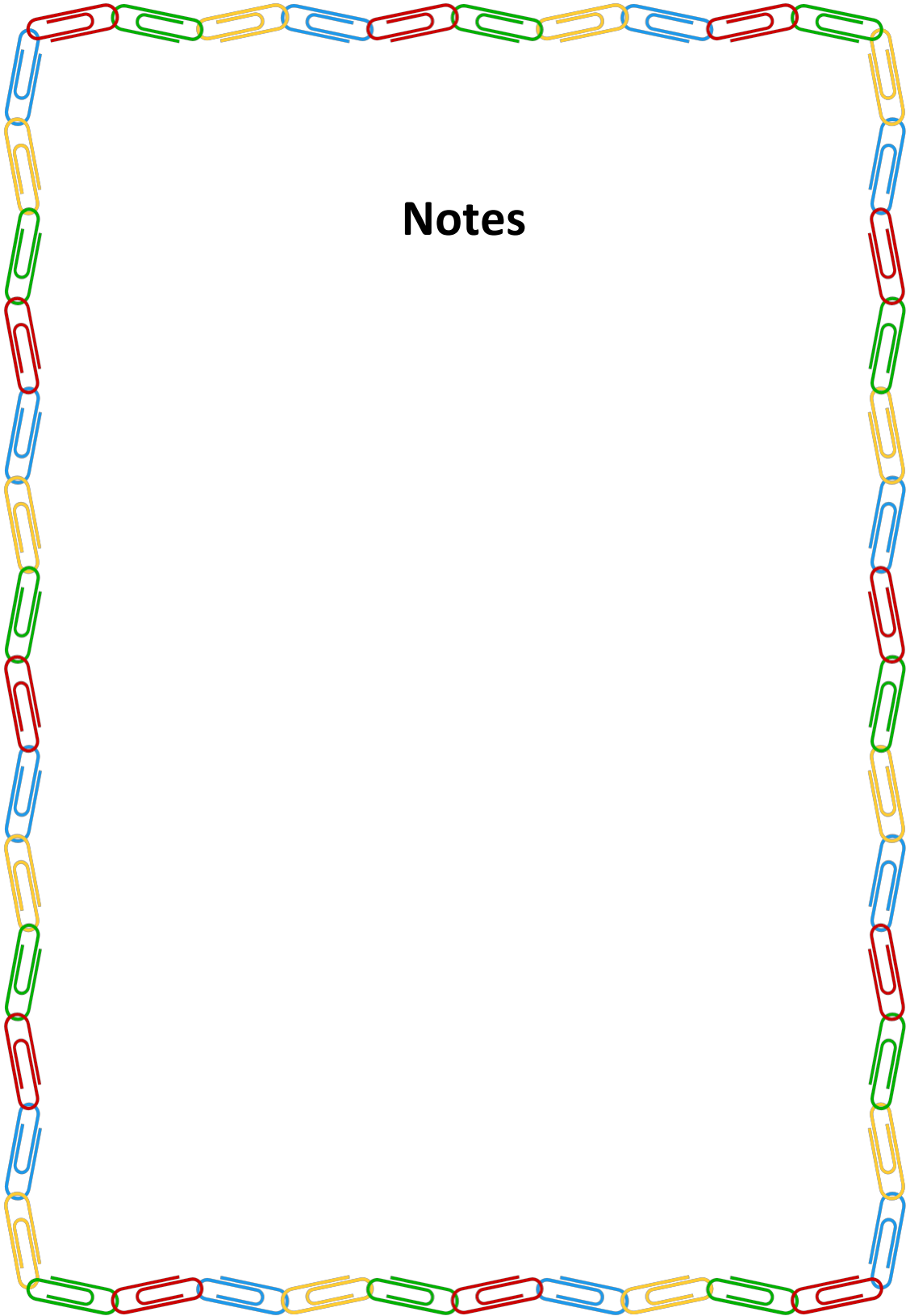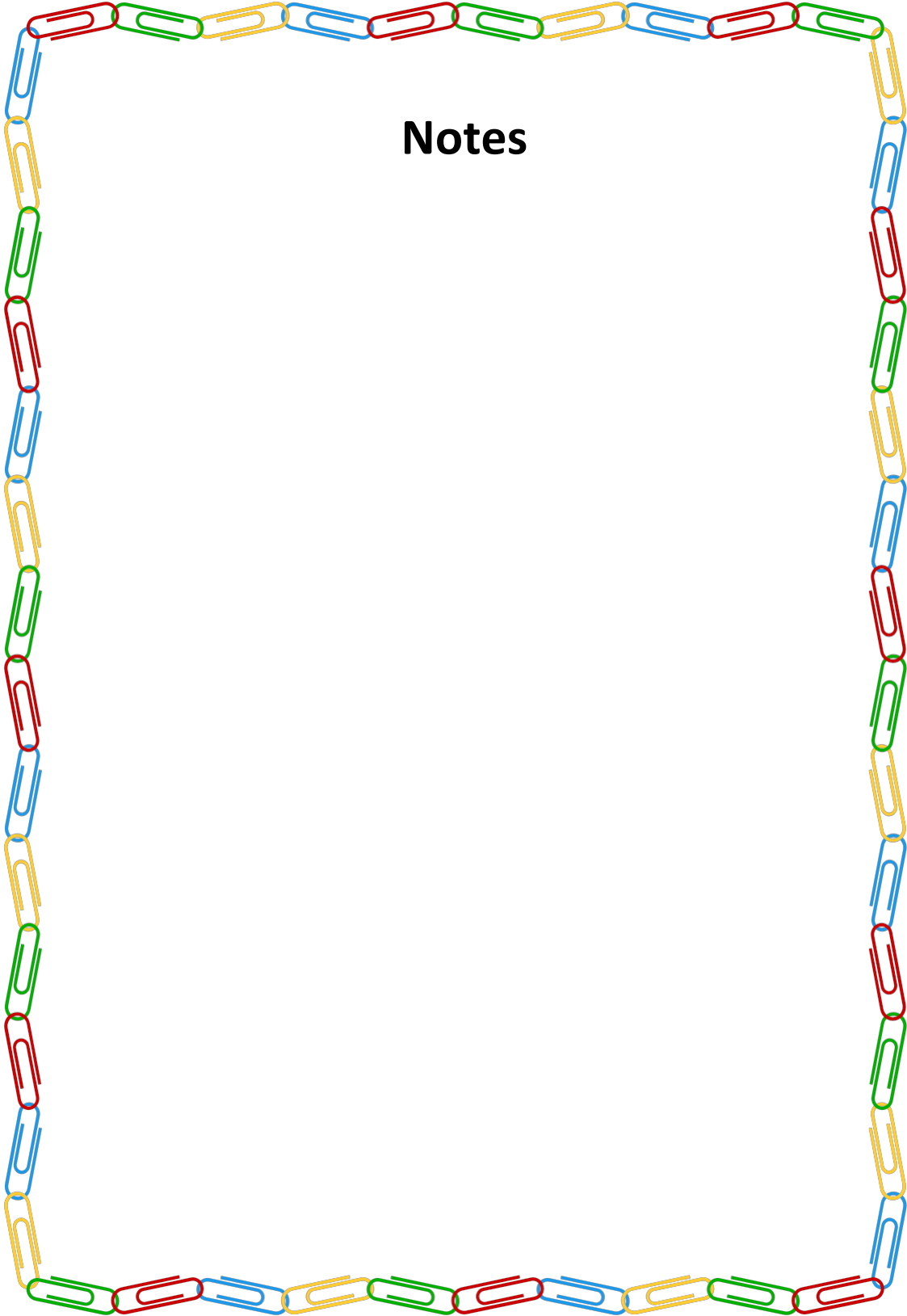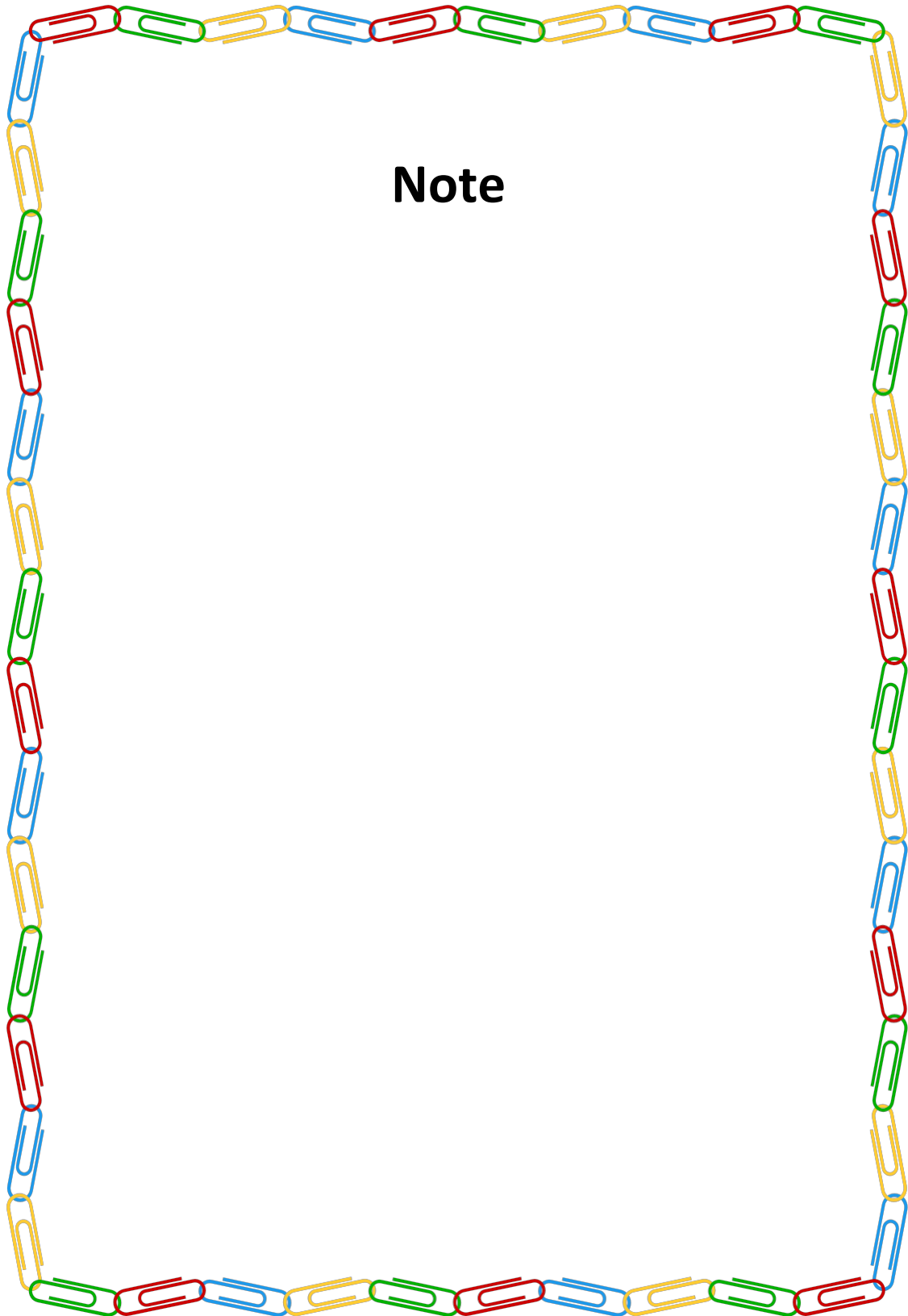
Appendix A - Incorporating Sub-Templates

Understanding Sub-Templates

You may have text, images, or logic in your templates that you want to reuse across many report templates. Examples include company headquarter address information or standard legal language. Rather than replicate this text, code in every template, or both, you can store sub-template files that include the reusable content. These sub-template files are referenced with standard XSL commands in the primary template file. Sub-template functionality is available for use only with primary RTF and XSL templates.

Sub-templates are secondary RTF or XSL templates that are imported by primary RTF or XSL report templates. The primary template accesses the sub-template through the XSL import style sheet feature. You can import any XSL style sheets or other RTF or XSL templates using standard XSL import and call functions. PeopleTools simplified sub-template syntax is also supported.

Primary templates calling nonexistent or inactive sub-templates causes an error message to be issued indicating the reason for the problem. This error information is incorporated into Process Scheduler error handling as well as into online viewing or previewing of the report.

The sub-template files are independently stored and are not registered in association with a data source or primary template. This being the case, if any form fields exist inside the sub-template, the report in which the sub-template is placed must have a related data source that supplies those fields, or the data must be passed in as runtime parameters.

The Content Library is a component provided for the registration of reusable sub-template files. The metadata is similar to that of primary template files and includes the sub-template ID, sub-template description, language, object owner ID, report category, effective date, and status. As with Report Definition security, sub-template editor registration security is applied through report categories. Because Report Category secures the data in the component, you can assign select users read-only access for a report category. These users can browse, view, and download sub-template files but not add them. This facilitates the offline design of primary templates for users who can access the library of existing sub-templates but who can't alter them.

Sub-template names are not exposed to the end user at either report design time or runtime. The complete template (primary and sub-templates) is systematically assembled by the XML Publisher engine during report generation. The same occurs

during online previewing as long as the sub-template file exists.

When designing a template, you can incorporate one or more sub-templates into your primary template.

You must use specific syntax to:

- Create sub-templates.
- Import sub-templates.
- Call sub-templates.

Creating Sub-Templates

Within a single sub-template file, multiple sub-template components can be available. Start and end template indicators must exist to distinguish these various components.

```
<?template:component_name?>
<?end template?>
```

For example, syntax of a sub-template file containing two components could be:

```
<?template:peoplesoft?>
Pleasanton Campus
500 Oracle Lane
Pleasanton, CA  94488
<?end template?>


<?template:logo2x.5?>
 Oracle_Logo
<?end template?>
```

where `<?template:peoplesoft?>` is the start template indicator of the component *peoplesoft* and `<?template:logo2x.5?>` is the start template indicator of the component *logo2x.5.* Each `<?end`

`template?>` tag indicates the end of its respective component.

Importing Sub-Templates

To import a sub-template file that is stored in the Content Library, place the following syntax at the top of the primary template file:

```
<?import:psxmlp://sub-template_NAME?>
```

where `sub-template_NAME` is the registered sub-template ID in the Content Library, for example: `<?import:psxmlp://STDHEADER?>`. This syntax must be in `Normal` text.

Calling Sub-Templates

Place the following syntax in the primary template file in the location where the desired text or XSL instructions from the sub-template file should appear:

```
<?call-template:peoplesoft?>
```

In the preceding sample code `peoplesoft` is the name of the component that you want to use in the sub-template file.

Testing a Sub-Template in Microsoft Word

You should test your template and sub-template using Template Builder before uploading to PeopleTools to make your sub-template is accessible to your template on the file system.

Use the following syntax when importing:

`<?import:file:C:///Template_Directory/subtemplate_file.rtf?>`

Notice the triple slashes and the use of the actual file name instead of template ID.

When your design is complete, you can change the import statement back to make the sub-template available to the main template in PeopleTools environment:

`<?import:file:C:///Template_Directory/subtemplate_file.rtf?>`

Appendix B: Including Images

BI Publisher supports a number of methods for including images in your reports:

- Inserting images.
- Importing images.

Inserting Images

To directly insert a .jpg, .gif, or .png image file into a template:

1. Select Insert, Picture, From File while the template is open in Microsoft Word.

2. Select the desired .jpg, .gif, or .png file to insert into the template.

3. Save the template.

Importing Images

To import an image from a sub-template file:

1. Embed the .jpg, .gif, or .png into the sub-template file.

   For example,

   ```
   <?template:logo2x.5?>
    Oracle_Logo
   <?end template?>
   ```

   where `Oracle_Logo` is the actual .jpg, .gif, or .png.

2. Import the sub-template file that includes the image by including the following syntax at the top of the primary template file:

   ```
   <?import:psxmlp://sub-template_NAME?>
   ```

   In this code sample, `sub-template_NAME` is the registered sub-template ID in the Content Library.

3. Add the calling details in the primary template at the appropriate location using the following syntax:

   ```
   <?call-template:logo2x.5?>
   ```

   In this code sample, `logo2x.5` is the name of the component that contains the image in the sub-template file.

Appendix C: Changing Default Template Font

The output report from RTF template uses template-level default fonts for empty report spaces and empty table cells. If the default font size does not match the font height used in a template, a final report could look different from user expectations. In this case, the user can change the template default font either in design time or runtime:

- Design time

- Set the xdo.cfg for the font. For example, set the default font for a specific report to be Helvetica, size 8: `<property`

  `name="rtf-output-default-font">Helvetica:8</property>`

- Runtime

  Use PeopleCode to set the font. For example, set the default font for a specific report to be Times New Roman with height 10:

  ```
  &asPropName = CreateArrayRept("", 0);
  &asPropValue = CreateArrayRept("", 0);
  &asPropName.Push(""rtf-output-default-font");
  &asPropValue.Push(""Times New Roman:10");
  &oRptDefn.SetRuntimeProperties(&asPropName, &asPropValue);
  ```

Appendix D: Using Drilling URL in RTF Template

Drilling URLs are supported in XML Publisher reports with a data source of PS Query or Connected Query.

To use a drilling URL in a XML Publisher report:

1. Create the query with the drilling URL defined as a field.

2. Create an RTF template.

3. In the RTF template map one or more fields to the fields that contain drilling URL.

   - Highlight the field where you want to place the drilling URL.

   - Select Insert (from the Word menu), Hyperlink or use Ctrl+K.

   - In the Insert Hyperlink dialog box, enter the URL link in Address field.

     Each URL link should be defined as {URL_FIELD}, where URL_FIELD is the unique field name for the expression that contains a specific drilling URL.
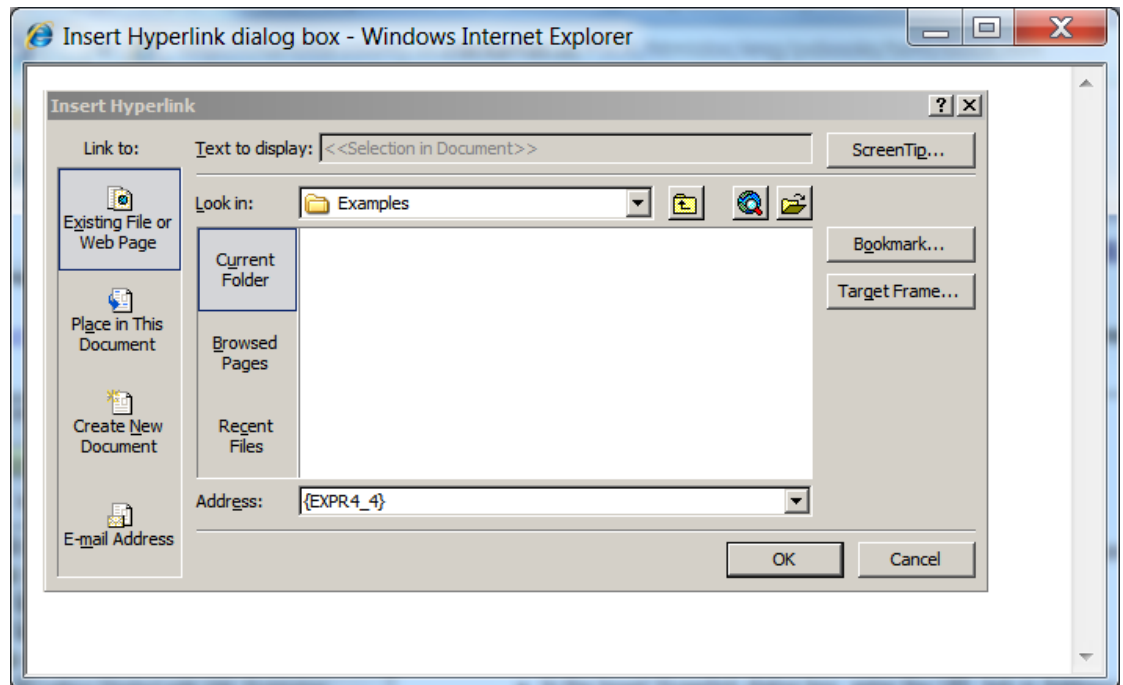
   - Use the Target Frame push button to select how this URL link will be opened, either in the same window or in the new window

4. If the XML Publisher report is run in Process Scheduler using an application engine program, you will need to add additional code to identify the process instance for the application engine program before processing the report. The process instance can be retrieved from the state record PSXPQRYRPT_AET. This call is needed to set a drilling URL during Query or Connected Query execution.

```
5.  &ProcessInstance=PSXPQRYRPT_AET.PROCESS_INSTANCE
6.  &oRptDefn.ProcessInstance = &ProcessInstance;
    &oRptDefn.ProcessReport("", "", %Date, "");
```

7. When you click the drilling URL in the report depending on the drilling URL type, one of the following occurs:

   - For Query URL, the Query results are displayed.

- For Component URL, the appropriate PeopleSoft page is opened.

- For External URL, the external page is opened.

Appendix E: Template Builder Template Options

Inserting a Field

This dialog allows you to select data elements defined in the data source (that is, the XML file) and insert them into the template. From the **Insert** menu select **Field...** to open the Field dialog.

The dialog shows the structure of your loaded data source in a tree view, as shown in the following figure:
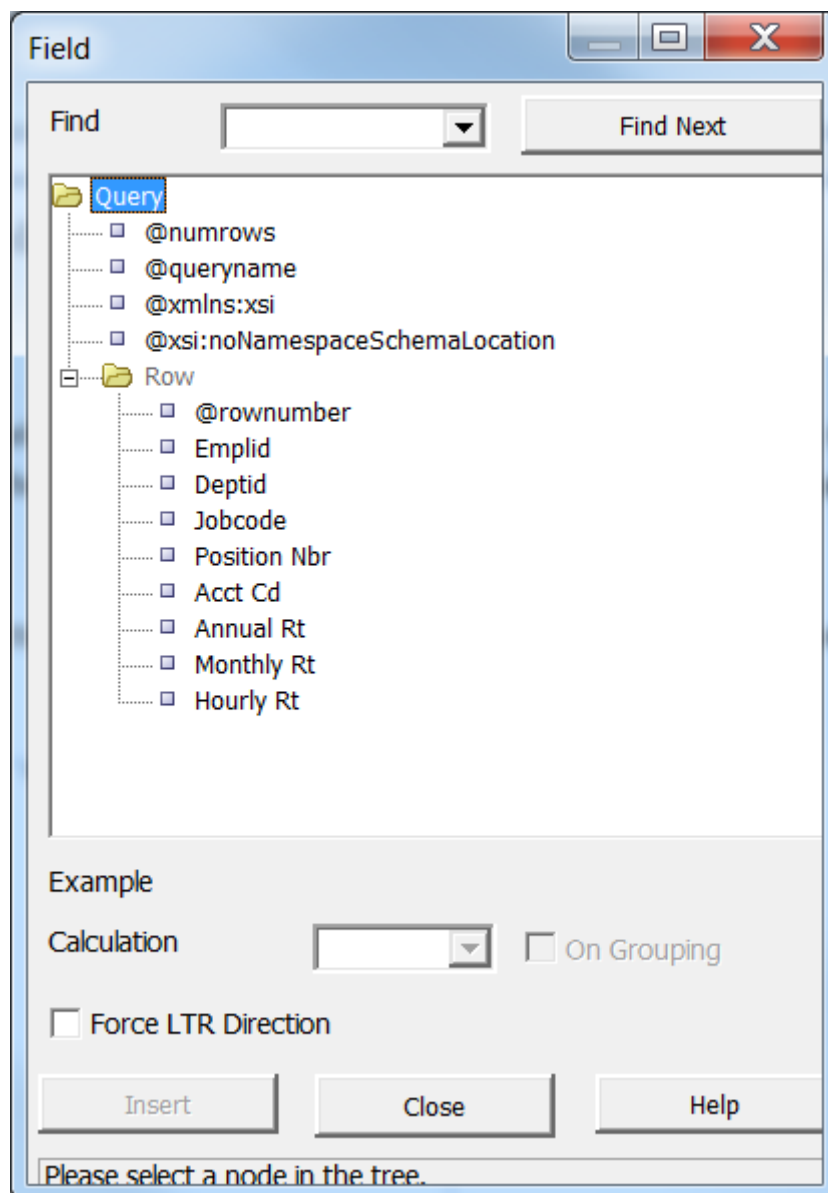
Select a field that represents a single data field (a leaf node of the tree) and select **Insert** (you can also insert the field by dragging and dropping it into your document, or by double-clicking the field). A text form field with hidden BI Publisher commands (in the help text of the form field) is inserted at the cursor position in the template. You may either select and

insert additional data fields or close the dialog by clicking the **Close** button.

Example

When you select a field name in the tree view, an example value for this field is shown.

Find

For an XML document with a large and complicated structure, use the find functionality to find a specific field. Enter a partial string of the field name you are searching into the **Find** field and select **Find Next**. The next occurrence of a data element that includes your search expression will be selected. Click the **Find Next** button again to see the next occurrence.

Force LTR (Left-to-Right) Direction

This checkbox is only needed if you are using the template in a language that prints the characters from right to left, such as Arabic or Hebrew. In these languages you still may want to force left-to-right printing for fields such as phone numbers, addresses, postal/zip codes, or bank account numbers.

Calculation

This feature enables you to perform aggregation functions on data fields, such as sum, average, count, minimum, and maximum.

For example, if you select sum for a data field, the field will show the sum of all occurring values for this data field, depending on the grouping.

It is important to understand the grouping context (marked by G and E form fields) to know exactly which fields are accumulated. If you insert a data field with an accumulation function into a repeating section (marked by G and E processing instruction form fields), you must select **On Grouping** to accumulate the data for the occurrences within the group. If you do not want the accumulation to be restricted to the group, you must place the accumulation field outside the group.

For example:

Also note that the data field must be a valid XSL number for the accumulation functions to work. Formatted numbers cannot be processed by BI Publisher (for example a number using a thousands separator: 10,000,000.00 cannot be processed).

Insert Table Wizard

The Insert Table Wizard enables you to create standard reports. On the **Insert** menu select **Table Wizard**.

Step 1: Select Report Format

You start by selecting the basic report format. You can choose from Table, Form or Free Form. The following example shows how the each selection will appear in the report.

Table

Last Name	First Name	Phone
Doe	John	(123) 456-7890

Form

Last Name	John
First	Doe
Phone	(123) 456-7890

Freeform

John

Doe

(123) 456-7890

Step 2: Select Table Data

An XML document can maintain many different datasets. For example, a purchase order XML document may contain header level information, lines, shipments and contacts. In this step, you select the data group that contains the data you would like to see in your table.

For example, in the Balance Letter sample RTF template (found in your Template Builder installed files under Oracle\BI Publisher\BI Publisher Desktop\samples\RTF Templates), the sample XML file contains three data groups as follows:

- ARXCOBLX/G_CUSTOMER
- ARXCOBLX/G_CUSTOMER/G_CURRENCY
- ARXCOBLX/G_CUSTOMER/G_CURRENCY/G_INVOICES

The Table Wizard presents a list of the available data groups in your loaded XML data file. Choose the group that contains the data fields you wish to include in your table. To build a table to list the invoices contained in the data, you would select ARXCOBLX/G_CUSTOMER/G_CURRENCY/G_INVOICES as your data set.

Step 3: Select Data Fields

The Table Wizard presents the data fields from your selected data set. Use the shuttle buttons to select the data fields to show in your table. Use the up and down arrows if you wish to reorder the fields after selecting them.

Step 4: Group Table

In this step, you can group the report by selected data fields. This is optional. This step enables you to regroup the data by a particular field. For example, if you are building a table of invoices, you may want to group all invoices of a particular type or date to be grouped together in the report.

There are two options for grouping: Group Left or Group Above. Group Left will create a nested table. The Group By field will display to the left in the outer table. Group Above will create a new table for each new value of your group by field, displaying the value of the group by field as a table title. Examples follow:

Group Left shows the result as a nested table:

Grouping Header	Grouping Header				
Grouping Field	**Header 1**	**Header 2**	**Header 3**	**Header 4**	**Header 5**
	Data 1	Data 2	Data 3	Date 4	Data 5

Example of Group Left:

Transaction Date			
02-DEC-03	**Invoice**	**Amount**	**Amount Remaining**
	234	53.35	53.35
04-DEC-03	**Invoice**	**Amount**	**Amount Remaining**
	10020402	146776.07	146776.07
	10020403	172482.45	172482.45
	10020404	147740.25	147740.25
	10020405	71577.42	71577.42
	10020406	89344.81	89344.81
	10020407	223563.03	223563.03
	10020408	176353.55	176353.55
05-DEC-03	**Invoice**	**Amount**	**Amount Remaining**
	10020487	112902.54	112902.54

Group Above shows the result as a table with a header:

Grouping Field 1

Header 1	Header 2	Header 3	Header 4	Header 5
Data 1	Data 2	Data 3	Date 4	Data 5

Example of Group Above:

02-DEC-03

Invoice	Amount	Amount Remaining
234	53.35	53.35

04-DEC-03

Invoice	Amount	Amount Remaining
10020402	146776.07	146776.07
10020403	172482.45	172482.45
10020404	147740.25	147740.25
10020405	71577.42	71577.42
10020406	89344.81	89344.81
10020407	223563.03	223563.03
10020408	176353.55	176353.55

Step 5: Sort Report

In this step, you can sort the data in the table by up to 4 different fields. Select a field and then define the sorting order (ascending or descending), and select the correct data type for the field. For example, if text is select "12" will come before "2" (alphanumerical order). If number is selected, "2" will come before "12".

Step 6: Headers/Labels

By default the column headers will display as the data field name. If you wish to change the column header labels, you can enter the labels here. Select **Finish** to create the layout and customize it in Microsoft Word.

Insert Table/Form Dialog

The Insert Table/Form dialog is the most flexible tool of the template builder. It allows you to perform the following tasks:

- Create a simple or nested table with a variable number of rows.
- Associate a group of data elements, such as a complete invoice or a purchase order line, with a form in the document that will be repeated for each occurrence of the data element.
- Select and define a layout for all the data fields in the template.
- Group or re-group the data.

On the **Insert** menu select **Table/Form** to open the dialog.

The Insert Table/Form dialog shows you two tree view panes. The left pane shows the data source structure, while the right pane shows the elements that will be copied to the template when you click the **Insert** button.

Note: This dialog is based on the **Drag & Drop** paradigm.

Selecting Data Fields

First select the data fields that you want to insert in the template and then define how to format them. Drag an XML element from the left **Data Source** pane to the right **Template** pane to select it. If the XML element has children, you will see a pop-up menu with the following options:

- Drop Single Node
- Drop All Nodes
- Cancel

Select **Drop Single Node** if you want to move only the selected node or **Drop All Nodes** if you want to move the node and all its children

If you drag an additional data field from the left **Data Source** pane to the right **Template** pane, it is either inserted at the same level (**Same Level**) or below the node (**Child**) where you release the node. The **Insert Position** box defines where the node is inserted.

Note: If you use the left mouse button for drag and drop, the node and all children are copied. However, if you use the right mouse button for dragging, a dialog pops up when you

release the mouse button. The dialog gives you the option to copy either only the selected node or the selected node and all children.

Find

For an XML document with a large and complicated structure, use the find functionality to find a specific field. Enter a partial string of the field name you are searching for into the **Find** field and click the **Find Next** button. The next occurrence of a name that includes your search string will be selected. Click the **Find Next** button again to see the next occurrence.

Example

When you select a field name in the data source view, an example value from the sample XML file for this data field is shown below the view behind **Example**.

Defining the Layout

When you select an element in the right **Template** pane, you will see its properties as well as a preview of how the node will be rendered. There are two kinds of nodes:

- Data Fields
- Data Groups

Data Field nodes (leaf nodes) do not have any child nodes. They represent simple attributes such as the total amount for an invoice or the subtotal for a purchase order line.

Data Group nodes (parent nodes) are nodes that do have child nodes. Typically, they do not represent data attributes, but groups of data – such as an invoice, a purchase order, a purchase order line or a shipment.

Data Field Properties

If a Data Field node is selected, its properties are shown in the **Properties** pane. You have the following options to describe how the Template Builder should show the field:

Calculation

You can select one of the aggregation functions for the data fields. These functions (besides count) only have an effect when there is more than one of the data fields in the context where you use the function.

Force LTR (Left-to-Right) Direction

This check box is only needed if you are using the template in a language that displays characters from right to left, such as Arabic or Hebrew. In these languages you still may want to force left-to-right printing for fields such as phone numbers, addresses,

postal/zip codes, or bank account numbers.

Data Group Properties

The order in which the data elements are shown reflects the order of the columns in the table. If you want to reorder the columns, change the **Insert Position** box from **Child** to **Same Level**. Then drag the elements into the correct order.

If a Data Group node is selected, its properties are shown in the **Properties** pane. You have the following options to describe how the Template Builder should render the group:

Style

To display the data as a horizontal table with a header, select Table. To display the fields below each other with labels in a table, use Form. If you want to insert the fields into a free-form text section that should to repeated for this element select Free Form**.**

Grouping:

Grouping is an advanced operation that allows you to group the data by a specific element in the data. For example, you may want to group all your invoices by customer. You can select a child element of the selected element as a grouping criterion.

Show Grouping Value:

This property will only be shown if you have selected a node created by the Grouping functionality. By default, the field you have selected to group the data by will be displayed in the report. If you do not want the grouping data field displayed, select No.

Sort By:

You can select an element by which the data groups are sorted.

Sort Order

If you have selected an element for **Sort By** you can select if the data should be sorted either ascending or descending.

Sort Data Type

If you have selected an element for **Sort By** the data is by default sorted as text. That means that 12 will be shown after 111. If the data is numeric, select **Number** as the sort data type

Break

This property allows you to insert a page break or a section break between every data group. If you select **New Page per Element**, then a page break will be inserted between each element after the first occurrence.

>   **Tip**: If you wish to insert a page break *before* the first occurrence of an element, use Microsoft Word's page break command.

If you select **New Section per Element**, a section break will be created for each data group. A section break has the following effects: it inserts page break, it resets the page numbers and new data can be displayed in the header and footer. You will typically use this option if you want to print multiple documents (for example invoices or purchase orders) to a single PDF file.

Inserting Tables and Forms

Once you have dragged all data fields over and defined the layout, select the Insert button to place the tables and forms at the cursor position in your document.

Grouping

You can group any Data Group node, by any of its child Data Field Nodes. For example if you have sales data for multiple quarters, you may want to show the sales data organized by quarter. In this case you would group the sales data rows by the quarter element.

Assume the following structure:

Sales Transaction

   Quarter

    Customer

   Amount

To group the child nodes of a node (Sales Transaction), you select one of the child nodes (Quarter) as the grouping property of the parent node (Sales Transaction). The Template

Builder will make this node (e.g. quarter) the parent of the other child nodes (Customer and Amount).

The new structure will look like:

Sales Transaction

       Quarter

              Customer

              Amount

The grouping criterion (Quarter) now behaves like any other Data Group Node with children. That means that you can define the layout of its children using the **Create As Table, Style, Label, Grouping,** and **Show Grouping Value** properties.

Advanced Information

The Insert Table/Form Dialog creates two kinds of form fields:

- Form fields representing data elements
- Form fields with processing instructions for repeating table rows or document sections

Form fields representing data elements are replaced with the data when the template is processed. Form fields indicating repeating sections are shown as for-each and end for-each in the document. (Note: If you have selected the Abbreviated form field display option, the for-each and end for-each form fields will display as F and E.)The section of the document encapsulated by these two elements is repeated, if the associated data element is repeated in the data.

Insert Chart Dialog

The insert chart dialog allows you to insert a data driven chart into a template. To open the insert chart dialog select the **Insert** menu, then **Chart…**.

Select a data element in the **Data** pane that you would like to associate with the graph. For example, you may have multiple invoices in the single XML document. If you select the root node containing all invoices, the graph will be calculated over all invoices. However, if you select the invoice node, the graph will be calculated using the data for a single invoice.

Chart Type

BI Publisher's charting feature is based on Oracle Business Intelligence Beans and it will offer all chart types provided by that module. Currently you can choose one of the following options:

- Bar Graph – Vertical
- Bar - Vertical - Percent
- Bar - Vertical - Stacked
- Bar Graph – Horizontal
- Bar - Horizontal - Percent
- Bar - Horizontal - Stacked
- Pie Chart
- Line Graph
- Line - Percent
- Line - Stacked
- Area Graph
- Area - Percent
- Area - Stacked
- Ring Graph
- 3-D Bar Graph
- Radar Graph
- Pareto Graph
- Combination Graph
- Scatter Graph
- Bubble Graph
- Stock Graph
- Stock Graph - Candle

Values

Drag and drop the data value you want to measure to the Values field (for example, SALES). You can select multiple Value elements (measures).

Note: The Values field will change depending on the Chart Type you select:

- Combination Graph- enables three fields for the Value selections.
- Scatter Graph - a scatter graph compares pairs of values. Drag and drop the X and Y data elements to compare.
- Bubble Graph - a bubble graph compares sets of three values. Similar to the scatter chart, the third value is displayed as the size of the bubble.
- Stock Graph - drag and drop the elements that represent the Open, High, Low, Close, and Volume values for the stock graph.

Aggregation

You can choose to aggregate the Values data as a sum, a count, or an average.

Labels

Drag and drop the data element for which you want to see the Value charted (for example, Year). Select **Group Data** to group the occurrences of the label element before rendering it in the chart. For example, if you are charting Sales by Year, selecting Group Data will accumulate the values for Year, so that only one occurrence of each year will appear in the chart. If you do not select **Group Data**, then the value for every occurrence of Year in the data will be plotted separately.

Color

If you wish to add a series element to the chart, drag and drop the element to display as a series. Each value will display as a new color in the graph.

Chart is inside group

Select this box if your chart is inside a grouping and you want the chart to display data only for the occurrences of the data elements within the group.

Style

Select a color scheme and style for your chart.

Properties

The properties region enables you to change value and label display names, select color, font, and other display options for your chart. The properties list will change depending on your chart selection.

Preview

Click Preview to display the chart with the sample data you have loaded.

Grouping

You can group a data group by any of its attributes. For example, if you have invoices in multiple currencies, you can group the invoices by currencies and create a graph for each currency.

Select a data field node, which is used to group the data in the **Grouping** box. Next select an aggregation function for the **Measure**. The data will be aggregated using the aggregation function.

Inserting the Chart

After you have defined the layout, select **Insert**. BI Publisher creates a chart in the template

using the sample data.

Editing an Inserted Chart

To edit a chart that you have already inserted into your template, right-click the chart and select **BI Publisher Chart** from the menu. This will invoke the chart dialog to enable you to edit your chart.

Inserting a Crosstab

The Template Builder enables you to quickly build a crosstab within your report.

To use the Cross tab builder:

1. From the BI Publisher menu bar select Insert, then Cross Tab. The Cross Tab dialog presents your data in the left pane empty Layout panes on the right for you to drag and drop data elements. The following figure shows the Cross Tab builder dialog:
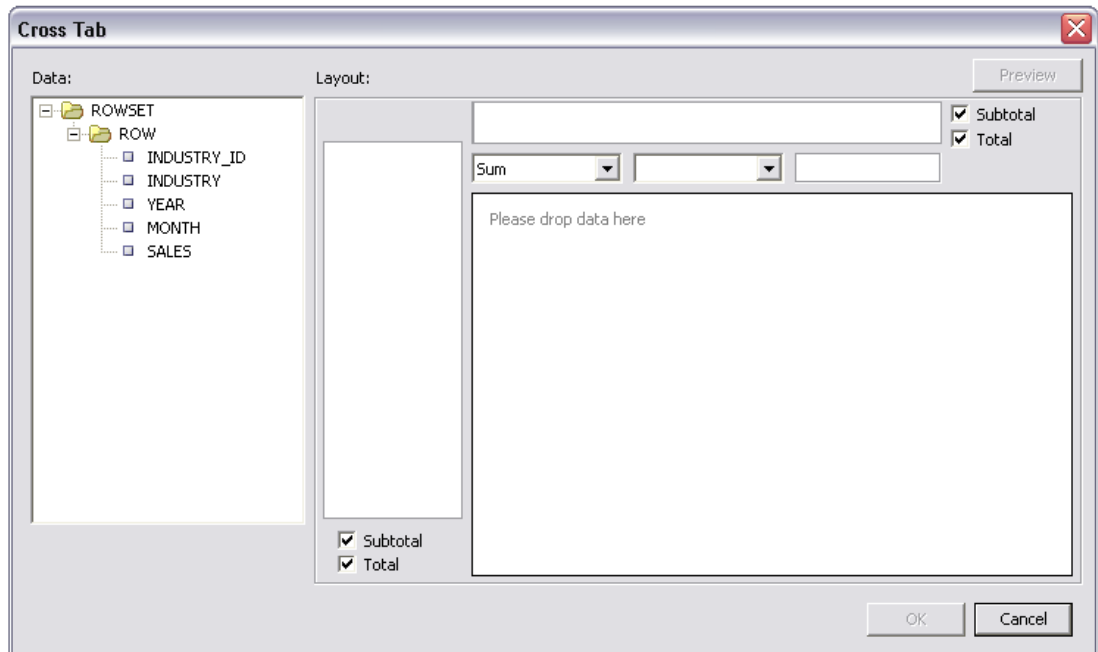
2. Drag and drop the elements from the Data pane to the Layout pane to build your crosstab structure. The following example Layout shows Sales by Industry accumulated by Year and by Month:
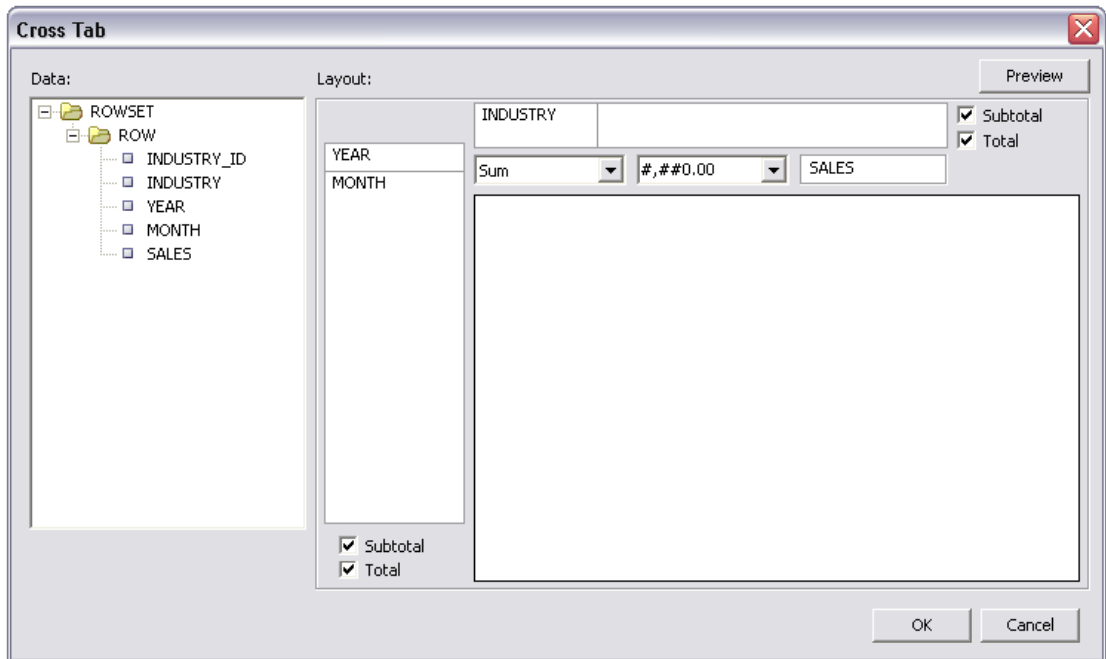
3. Use the drop down lists to select aggregation. You can choose Sum, Count, or Average. Then choose a number format mask (from the adjacent drop down list) if desired
4. You can choose whether to display subtotals and totals for the rows and columns by selecting the Subtotal and Total boxes.
5. Select Preview to see how the cross tab will appear before you insert it into your template. Click OK to insert the cross tab into your template. The sample cross tab will appear as follows in your template:

At runtime, the cross tab will generate in your report as follows:

	Motor vehicle & parts dealers	Furniture & home furnishings stores	Electronics & appliance stores	Building material & garden eq. & supplies dealers
2005	226,205.00	26,468.00	24,726.00	79,625.00
March	75,770.00	8,804.00	8,292.00	26,776.00
February	75,273.00	8,859.00	8,320.00	26,369.00
January	75,162.00	8,805.00	8,114.00	26,480.00
2004	145,022.00	17,073.00	15,472.00	48,531.00
March	73,458.00	8,655.00	7,762.00	25,385.00
February	71,564.00	8,418.00	7,710.00	23,146.00
Total	371,227.00	43,541.00	40,198.00	128,156.00

Inserting a Repeating Group

To create a repeating group:

1. Select the section of the template that contains the elements you want repeated.
2. From the Oracle BI Publisher menu, select **Insert**, then **Repeating Group**.
3. Enter the appropriate fields in the **Field Properties** dialog:
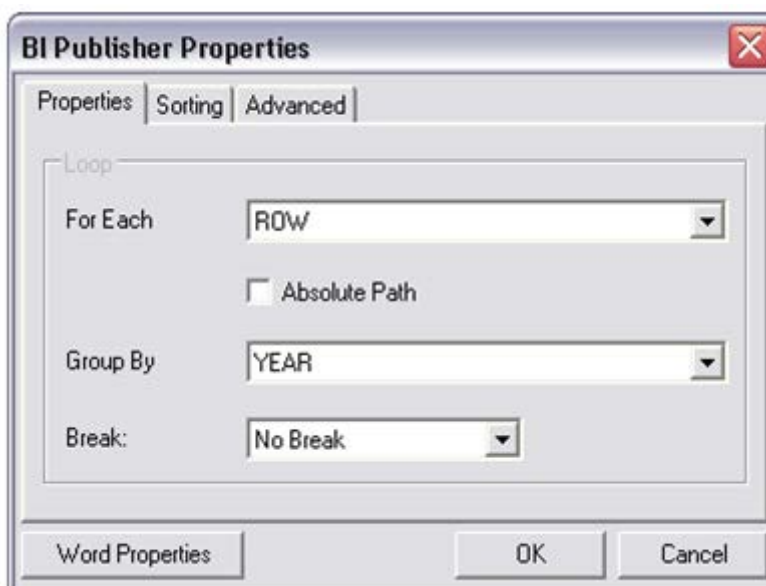
For Each - Select the element that for each occurrence of which, you want the loop to repeat. When you select the For Each data field you are telling BI Publisher that for each occurrence of the selected field in the data you want the elements and processing instructions contained within the loop to be repeated. For example, assume your data contains invoice data for customers and you want to create a

table with each customer's invoices. In this case, *for each* customer number you want the table to repeat. You would therefore select the customer number in the For Each field to create a new loop (or group) for each customer.

Note the following about creating repeating groups:

- o For loops and groupings not inside another group (that is, outer groups or loops) you must select the repeating XML element to be used. For example if the data set is flat, the only repeatable element is /DATA/ROWSET/ROW. In cases with multiple data sources or hierarchical XML you can choose the data set.
- o If you are creating nested groups (inserting a loop or group inside of another loop in the template), the For Each field is not updateable because it is already defined by the preexisting outer loop. The For Each field will display "Group Item" to inform you that an outer group is already defined.

Absolute Path - Select this check box to use the Absolute Path to the element in the XML structure. This is important if your data contains the same element name grouped under different parent elements.

Group By - Select a field from the list by which you want to group the data. If you just want to create a simple loop, do not select a group by element. Selecting a group by element will actually regroup the data into a new hierarchy based on the group by element.

Break - use this option to create either a Page break or Section break if you wish to insert a break after each occurrence of this group.

Note that a Section break can only be created on outer groups that surround the whole document. If the selected field is not an outer group, the Section break option will not be available.

Note also that when you insert a section break, the page numbering is reset, headers and footers are reset, and any running calculations will be reset for each occurrence of the the group.

4. To sort the grouped data, select the **Sorting** tab. You can select up to four sort-by fields. For each sort by field, select the following:

Sort order - select Ascending or Descending.

Data Type - Select Number or Date/Text. It is important that you select the correct data type to achieve the expected sort order.

Note that if you are sorting by four criteria and your XML data element names are long, you may exceed the character length limitation (393 characters) of the Microsoft Word form field.

5. The **Advanced** tab enables you to edit the code directly and to enter **Text to Display** for the field. The Code region displays the code and processing instructions that the Template Builder has inserted for the field. You can edit this if you wish to change the processing instructions for this field. The Text to Display field shows how this field will display in your template. You can choose to enter descriptive text to enable you to understand each field better when reading the template, or you can enter abbreviated text entries that will be less intrusive to the look and feel of the template.

Note: The default display text can be set as Descriptive or Abbreviated using the Options tab.

The following figure shows the Advanced tab of the Repeating Group Field Properties dialog:
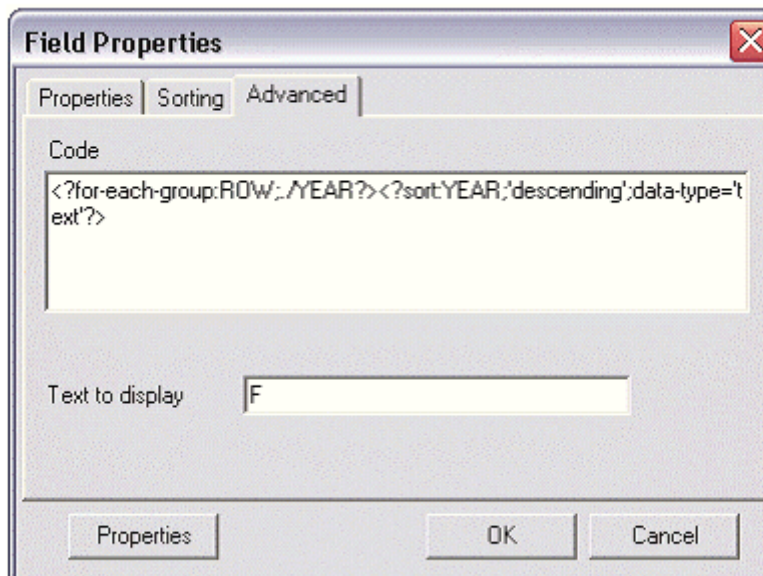
6. When you have completed the dialog options, click **OK**. This will insert the form fields in your template. By default, the beginning for-each form field will display the text "F" and will be inserted at the beginning of the selected template section. At the end of the selection, an "E" form field will be inserted to denote the end of the repeating group.

Creating Grouping Fields Around an Existing Block

To create a group around an existing block of text in a template:

1. Select the block of text. For example, a table row.

    Note that if any already inserted BI Publisher tags are included in the block, you must be sure to include the beginning and ending tags. For example, if your block contains any opening **for-each**, **if**, or **for-each-group** tags, you must include the **end for-each**, **end-if**, and **end for-each-group** tags in your selection.

2. From the Oracle BI Publisher menu bar select Insert, then **Repeating Group**.
3. In the Field Properties dialog, enter the fields to define the group as described in Inserting a Repeating Group.
4. Click OK to insert the grouping fields around the block. For example, if the block is a table row, the begin field will be inserted at the beginning of the first cell and the end field will put at the end of the last field.

## Inserting and Editing Conditional Regions

A conditional region is an area that is surrounded by a conditional statement. If the statement tests true, the area is displayed in the report; if the condition tests false, the area is suppressed from the report.

For example, your data contains salary and position information for all employees. Your report contains a table that displays the employee, position, and salary. You want your report to display salary information for managers only. Using the insert conditional region functionality, you can select the region that contains the employee table and insert the condition that the position element must equal manager.

To insert a conditional region:

1. Select the region that you want to apply the condition to. For example, if you want to display a table only for a certain condition, select the region that contains the table. Note that the region must be inside a loop.
2. From the Oracle BI Publisher toolbar, select **Insert**, then **Conditional Region**. The following figure shows the Conditional Region dialog.
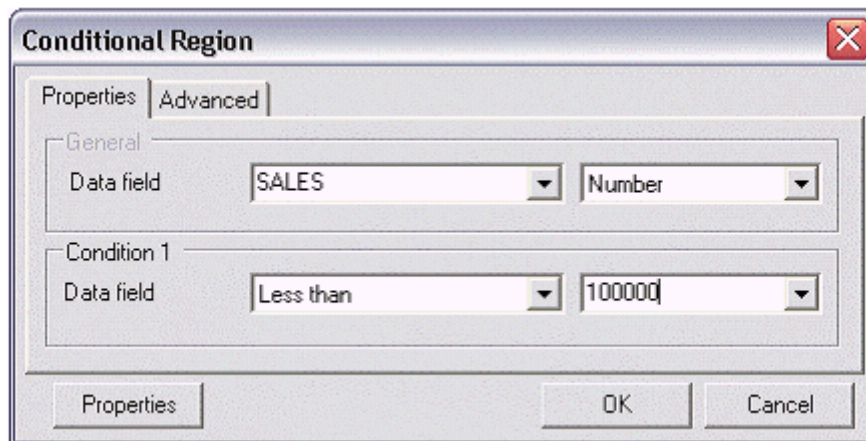
3. Enter the following fields:

   Data Field — Select the field to test for the condition.

   Select the data type of the field: Number or Date/Text.

   (Condition 1) Data field — Select the comparison operator. The options are:

   - Equal to
   - Not equal to
   - Greater than
   - Less than
   - Greater than or equal to
   - Less than or equal to

   Select the value to meet the condition. Note that you may enter an integer, enter text, or select another data element to define a comparison based on the incoming values.

4. Click OK. The form fields containing the conditional logic are inserted around the region. The beginning form field will display the text "C" and the form field closing the region will display the text "EC".
5. To edit the conditional region, double-click the inserted form field to launch the dialog for editing; or, right-click the form field and select **BI Publisher**, then **Properties**.

Inserting Conditional Formatting

Using the Advanced Form Field features, you can insert simple conditional formats to apply to table rows or cells. The dialog provides several common options that you can select and the Template Builder inserts the code automatically. The Conditional Format dialog supports two conditions per field.

Use this feature to easily construct formats such as displaying values below a certain threshold in one format, and above the threshold in another.

To insert a conditional format:

1. Place the cursor in the table cell of the data element for which you want to define the condition.
2. From the Oracle BI Publisher toolbar, select **Insert**, then **Conditional Format**. The following figure shows the Conditional Format dialog.
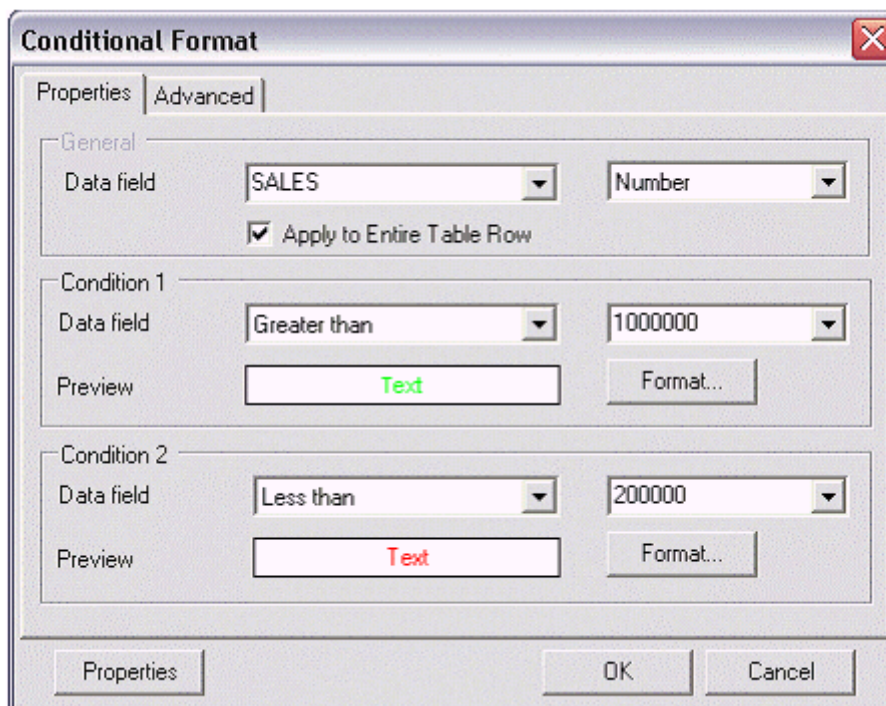
3. Enter the following in the **Conditional Format** dialog

   Data Field — Select the element to test for the condition and the data type of the element (Number or Date/Text).

   Apply to Entire Table Row — If you want the format applied to the entire table row, not just the cell of the selected element, select this box.

   **(Condition 1) Data field** — Select the comparison operator. The options are:

   o   Equal to
   o   Not equal to
   o   Greater than
   o   Less than
   o   Greater than or equal to

  o Less than or equal to

Select the value to meet the condition. Note that you may enter an integer, enter text, or select another data element to define a comparison based on the incoming values.

4. Click **Format** to define the format you want to apply when the condition is met. Options are background color, font color, and font style (regular, bold, italic, bold italic). Select the box and format of each option you want to apply. After you select the format, the Preview region will display the format chosen. The following figure shows the Format dialog from the Conditional Format dialog:
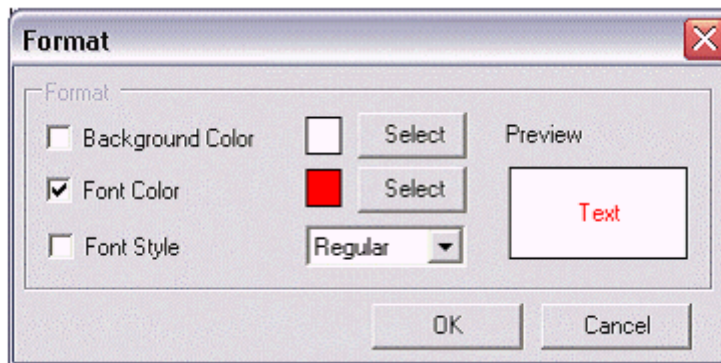
5. Define a second condition if desired.
6. Select **OK**. The conditional format field will be inserted as a form field with the display text "C".
7. To edit the conditional format, double-click the inserted form field to launch the dialog for editing; or, right-click the form field and select **BI Publisher**, then **Properties**.