EXCEL 2002 (XP)

FOCUS ON: PIVOT TABLES

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FOCUS ON: PIVOT TABLES

LESSON 1 - CREATING/REVISING PIVOTTABLES

In this lesson, you will learn how to:

- Create a PivotTable report

- Add PivotTable report fields

- Select a page field item

- Refresh a PivotTable report

- Change the summary function

- Add new fields to a PivotTable report

- Move PivotTable report fields

- Hide/Unhide PivotTable report items

- Delete PivotTable report fields

- Create a page field report

- Format a PivotTable report

- Create a PivotChart report

- Publish PivotTable reports to the Web

- Add fields to a PivotTable - browser

- Use a PivotTable list
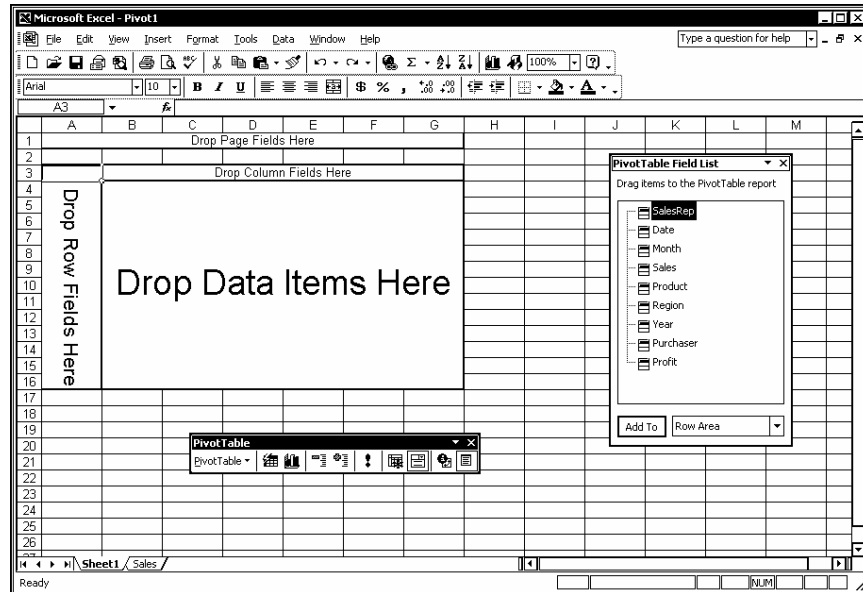
CREATING A PIVOTTABLE REPORT

Discussion

A PivotTable report can summarize large amounts of data quickly. PivotTable reports allow you to manipulate row and column headings around the central data so that you can view the data in different ways.

PivotTable reports are organized into fields and items. Fields are the rows or columns of data; items are the specific entries within a field. For example, if you want to summarize data by month, each month becomes an item in the **Month** field. Data fields contain the numbers you want to summarize or analyze, such as sales or volume.

You can filter PivotTable report items using a page field. A page field displays only the data for the selected page field item. For example, if you have a **Quarter** page field, you can view the summarized data for all quarters or only for a single quarter.

Excel has a PivotTable and PivotChart Wizard to step you through the process of creating a PivotTable report. First, you select the source of the original data, such as a list or database in an Excel worksheet or in an external database. Next, you select the range of data you want to use. The final step of the PivotTable and PivotChart Wizard is to select the worksheet location for the PivotTable report.

The field layout of the PivotTable report is where you specify the row, column, and page fields, as well as the data you want to summarize. This step can be performed in a window in the PivotTable and PivotChart Wizard or directly in the worksheet. If the source data is an Excel workbook, it is easier to lay out the PivotTable report directly in the worksheet. If the source data is an external database or an extremely large database, it may be easier to use the Layout window in the PivotTable and PivotChart Wizard.

A blank PivotTable report

> 📖   You can also use a PivotTable report to analyze data created in an external data source, such as Access. Worksheet data can also be imported into Access.

✅ **Procedures**

1. Open a worksheet containing a database.

2. Select any cell in the database.

3. Select the **Data** menu.

4. Select the **PivotTable and PivotChart Report** command.

5. Select the data source you want to analyze.

6. Select the kind of report you want to create.

7. Select **Next >**.

8. If necessary, select the database range and then select **Next >**.

9. Select where you want the PivotTable report to appear.

10. Select **Finish**.

ADDING PIVOTTABLE REPORT FIELDS

Discussion

The fields in a PivotTable report can be laid out directly in the worksheet. The four areas of the PivotTable are row fields, column fields, page fields, and data items. Each area of the PivotTable displays placeholder text (such as **Drop Column Fields Here**).

When a PivotTable report is active, the available database fields appear in the PivotTable Field List window. If necessary, you can open the PivotTable Field List window by clicking the **Show/Hide Field List** button on the **PivotTable** toolbar.

You lay out the PivotTable report by dragging fields directly into the desired area of the PivotTable report. For example, if you want to arrange the data by displaying the months at the beginning of each row, you can drag the **Month** field to the **Drop Row Fields Here** area. Likewise, to display the product names at the top of each column, you can drag the **Product** field to the **Drop Column Fields Here** area.

The **Drop Data Items Here** area contains items to be calculated. Consequently, fields dragged to this area are usually, but not limited to, numerical fields. For example, for a **Month** by **Product** report, you can drag the **Sales** field to the **Drop Data Items Here** area; your PivotTable report will then display the total sales per product by month.

Page fields are often used to filter information in large databases. They can break a large report down into smaller, more manageable reports. If the database includes a **Region** field, this field can be used to summarize the sales in a specific region.

Each area of a PivotTable report has its own identifying symbol that appears when you add a new field to the report. As the field is dragged across the different areas of the PivotTable report, its identifying symbol changes accordingly.

A completed PivotTable report

📖   The PivotTable report area must be selected for the PivotTable Field List window to open.

📖   You can dock the PivotTable Field List window to the left or right side of the Excel window.

✅ **Procedures**

1. Display the **PivotTable** toolbar.

2. Select any cell in the PivotTable report to activate the report and open the PivotTable Field List window.

3. Drag the desired field from the PivotTable Field List window to the **Drop Row Fields Here** area.

4. Drag the desired field from the PivotTable Field List window to the **Drop Column Fields Here** area.

5. Drag the desired field from the PivotTable Field List window to the **Drop Page Fields Here** area.

6. Drag the desired field from the PivotTable Field List window to the **Drop Data Items Here** area.

SELECTING A PAGE FIELD ITEM

Discussion

Page fields allow you to filter the PivotTable report by displaying only the data for a specific field item; you can drag any field to the page field area. The page field list then displays all the items in the page field.

When you select an item from the page field list, only the data relating to that single item appears in the PivotTable report. For example, if items in the **Region** page field include **Northeast**, **Northwest**, **Southeast**, etc., and you select the **Northeast** item, only the data for the **Northeast** region appears in the PivotTable report.
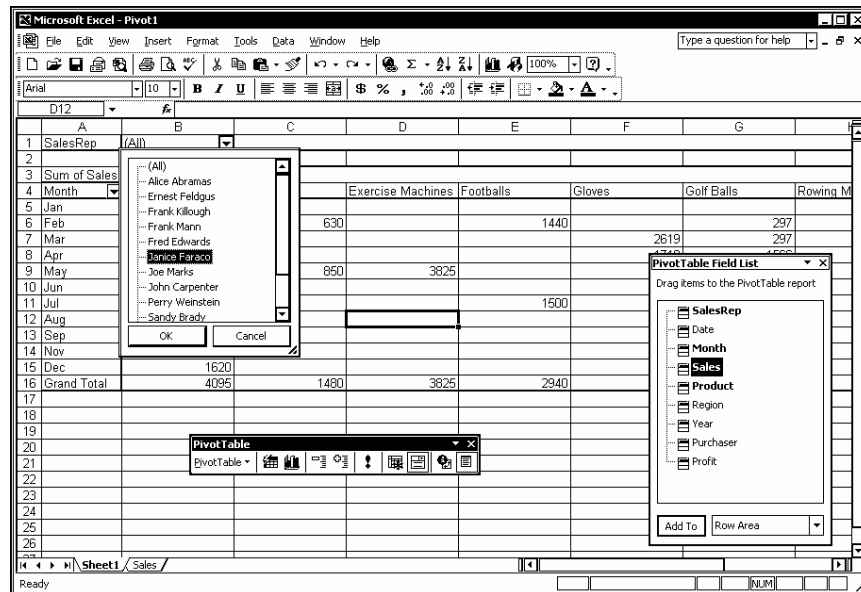
Using a page field item to filter data

Procedures

1. Click the page field list.

2. Select the desired item.

3. Select **OK**.

REFRESHING A PIVOTTABLE REPORT

Discussion

If the source data changes, a PivotTable report does not automatically update. If you change the existing data, delete records or fields, or add records or fields to the original database range, you need to refresh the PivotTable report.

If you add records below the last row or add fields to the right of the last column in a database, you will have to open the PivotTable and PivotChart Wizard to expand the data source range to include the new rows and/or columns.

> You can open the PivotTable and PivotChart Wizard by clicking in an existing PivotTable report, and selecting the **PivotTable** menu on the **PivotTable** toolbar and the **Wizard** command.

Procedures

1. Select any cell in a PivotTable report to activate it.

2. Click the **Refresh Data** button on the **PivotTable** toolbar.

CHANGING THE SUMMARY FUNCTION

Discussion

By default, an Excel PivotTable report sums fields that contain numeric data and counts fields that contain text. The PivotTable report can provide summary information using other mathematical calculations as well. A PivotTable report can average data, provide the minimum and maximum values, or yield the standard deviation or variance. A PivotTable report can also contain multiple summaries for the same field.
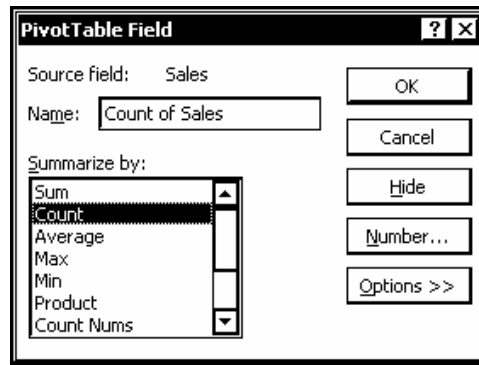
The PivotTable Field dialog box

> 📖   When a PivotTable report contains multiple data fields, you
> can change the summary function for a field by selecting any
> cell in the row of the data field you want to change.

✔ Procedures

1. Display the **PivotTable** toolbar.

2. Select any cell in the PivotTable report data area.

3. Click the **Field Settings** button on the **PivotTable** toolbar.

4. Select the desired summary function from the **Summarize by** list
    box.

5. Select **OK**.

ADDING NEW FIELDS TO A PIVOTTABLE REPORT

🔍 Discussion

PivotTable reports can display multiple fields in the row, column, page, or data areas.
Multiple fields can add more detail to your PivotTable report. If a PivotTable report
contains the **Month** row field and the **Product** column field, you can add a **Purchaser**
row field to be able to display monthly sales by customer as well.

New fields can be added to a PivotTable report by dragging them from the PivotTable
Field List window to the desired PivotTable report area. The new field can be
positioned before or after any existing fields. The position of the field determines how

the data will be summarized. You can display the purchasers for each month by placing the **Month** field before the **Purchaser** field, or you can reverse the field order to display the purchaser first, followed by the month.

As you drag new fields into a PivotTable report, guidelines indicate the position of the field in relation to existing fields. When positioning a field in the row area, the guideline is a thick, gray vertical bar, which appears to the left or right of an existing row field. When positioning a field in the column area, the guideline is a horizontal bar, which appears above or below existing field items. When the guideline appears to the left of a field in the row area, or above the field items in the column area, the new field will be placed before the existing field.

Adding a field to a PivotTable report

> You can drag a field to a different position in the PivotTable report at any time; this feature is helpful if you accidentally position a field in the wrong area.

✔ **Procedures**

1. Select any cell in the PivotTable report to activate it and open the PivotTable Field List window.

2. Drag the field you want to add to the PivotTable report from the PivotTable Field List window to the desired PivotTable report area and position.

MOVING PIVOTTABLE REPORT FIELDS

Discussion

You can change the layout of the PivotTable report by moving fields from one area to another. By moving the fields, you can experiment with the best way to display your data.

As you move fields in the PivotTable report, thick, gray bars indicate the placement of the field. Vertical bars represent row area placement and horizontal bars represent column and page area placement.

> You can also move a field from one area to another by dragging the desired field from the PivotTable Field List window to the desired area; the field is removed from its previous area and appears only in the destination area.

Procedures

1. Drag any field to move it from one area of the PivotTable report to another.

HIDING/UNHIDING PIVOTTABLE REPORT ITEMS

Discussion

You do not have to display all the field items in a PivotTable report. You can hide selected items, such as some of the products in a **Product** field. You can hide everything except the data you need to view.

You can also unhide items at any time. To unhide items, you follow the same procedure as you do when hiding items; you simply select the items you want to view in the field item list or select **(Show All)** to view all the field items.

✅ **Procedures**

1.   Select the field item list containing the items you want to hide.

2.   Deselect the items you want to hide.

3.   Select **OK**.

DELETING PIVOTTABLE REPORT FIELDS

📖 **Discussion**

If you no longer want to view a field in your PivotTable report, you can remove it from the report. A field can be removed by dragging it away from the PivotTable report into the worksheet.

✅ **Procedures**

1.   Drag the field you want to remove away from the PivotTable report.

CREATING A PAGE FIELD REPORT

📖 **Discussion**

You can use the **Show Pages** command on the **PivotTable** menu to create a separate PivotTable report for each item in a page field. The **Show Pages** feature creates a copy of the PivotTable report in a new worksheet for each page field item. For example, if you have a **Region** page field, and you select the **Show Pages** feature, a separate worksheet is created for each region in the **Region** page field list.

Page field reports are inserted before the original PivotTable report worksheet.

📖	You cannot undo the **Show Pages** feature. To remove a page field report, you must delete the worksheet on which it appears.

📖	You can double-click any data field item to display its details on a separate worksheet.

✔️ **Procedures**

1. Display the **PivotTable** toolbar.

2. Select any cell in the PivotTable report to activate it.

3. Select the **PivotTable** menu on the **PivotTable** toolbar.

4. Select the **Show Pages** command.

5. Select the page field for which you want to create page field reports.

6. Select **OK**.

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FORMATTING A PIVOTTABLE REPORT

🔍 **Discussion**

You can use the **AutoFormat** feature to give a PivotTable report a more professional look. AutoFormat provides many formats, which include cell shading, font style and color, and borders.

There are two main format styles for PivotTables: reports and tables. A table style retains the original row/column (cross-tabulated) arrangement. A report style rearranges the data into an indented layout, arranging the fields in a hierarchical column arrangement. A report AutoFormat makes it easier to read complex PivotTable reports.

If you are not satisfied with AutoFormat, you can undo it. AutoFormat does not format page fields.

You can manually change the format of text and numbers using normal Excel formatting commands.
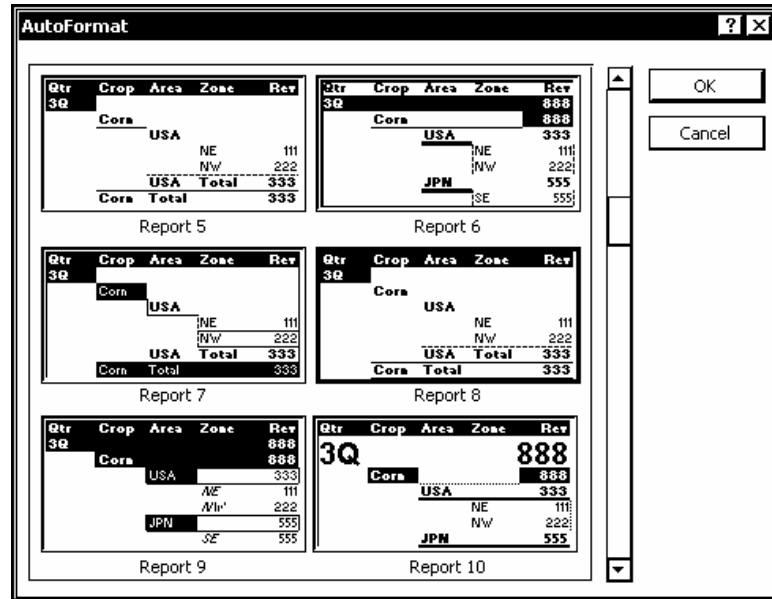
Formatting a PivotTable report

📖   If you create page field reports from a formatted PivotTable report, each page field report will be formatted the same as the PivotTable report.

📖   You can rename fields in a PivotTable report by double-clicking the label you want to rename and typing the desired name into the PivotTable Field dialog box.

📖   Selecting **None** from the **AutoFormat** list removes all formatting from a PivotTable report.

✅ **Procedures**

1. Display the **PivotTable** toolbar.

2. Select any cell in the PivotTable report to activate it.

3. Click the **Format Report** button on the **PivotTable** toolbar.

4. Select the desired format.

5. Select **OK**.
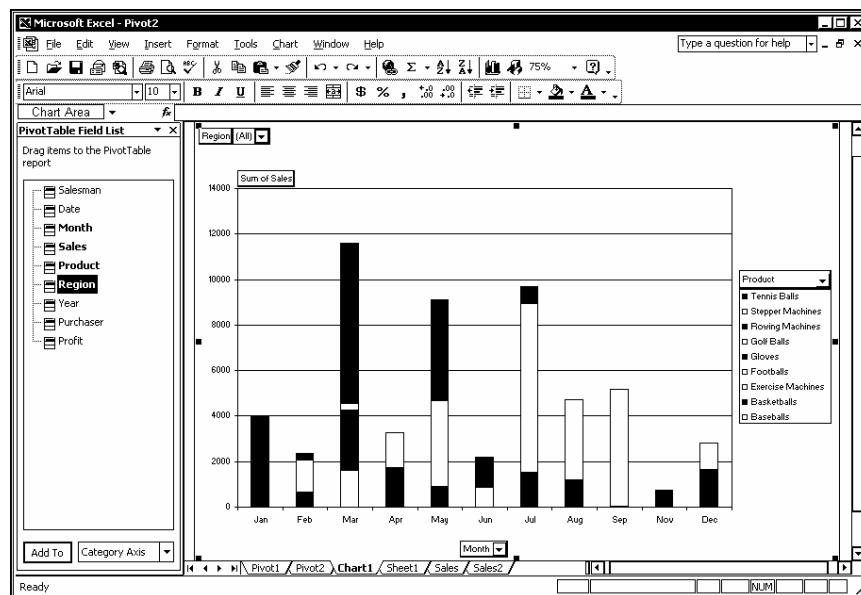
CREATING A PIVOTCHART REPORT

Discussion

A PivotChart report allows you to manipulate large amounts of data in a graphical environment.

PivotChart reports can be created from a database or an Excel list, or from an existing PivotTable report. Both methods yield the same result, a chart with a layout you can change to view different levels of detail and data. When you create a PivotChart report, Excel automatically creates an accompanying PivotTable report on a separate worksheet.

Creating a PivotChart report is similar to creating a PivotTable report. The chart layout is created by dragging fields from the PivotTable Field List window to the desired area of the PivotChart report. The chart layout, however, is slightly different than the report layout.

A PivotChart report

> 📖 You can use the **Chart Wizard** button on the **PivotTable** toolbar to create a PivotChart report from an existing PivotTable.

> 📖 You may need to move the PivotTable Field List window, the **PivotTable** toolbar, and the **Chart** toolbar to view the various areas of a PivotChart report.

✔ **Procedures**

1. Open a worksheet containing a database.

2. Select any cell in the database.

3. Select the **Data** menu.

4. Select the **PivotTable and PivotChart Report** command.

5. Select the data source you want to analyze.

6. Select the kind of report you want to create.

7. Select **Next >**.

8. If necessary, select the database range and then select **Next >**.

9. Select **Yes** or **No** to base your PivotChart report on an existing PivotTable report, if applicable.

10. Select the PivotTable report on which you want to base your PivotChart report, if applicable.

11. Select **Next >**.

12. Select where you want to place the PivotTable report.

13. Select **Finish**.

14. Drag the desired fields from the PivotTable Field List window to the **Drop Category Fields Here** area of the PivotChart report.

15 Drag the desired fields from the PivotTable Field List window to the **Drop Data Items Here** area.

16. Drag the desired fields from the PivotTable Field List window to the **Drop Series Fields Here** area.

17. Drag the desired fields from the PivotTable Field List window to the **Drop Page Fields Here** area.
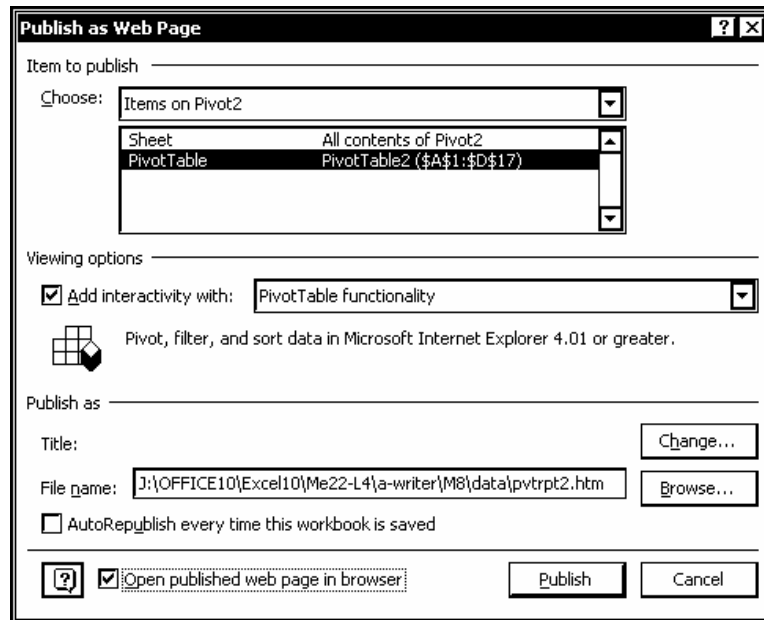
PUBLISHING PIVOTTABLE REPORTS TO THE WEB

👤 **Discussion**

Excel 2002 allows you to publish PivotTable reports as web pages. If you want others to be able to make changes, you can add interactivity to the published file. With

interactivity, anyone can change the layout of the PivotTable report while viewing it in a web browser.

When a PivotTable report is published with interactivity, it is known as a PivotTable list. Not all web browser viewers are able to use a PivotTable list. The user must be using Internet Explorer 4.01 or greater as a web browser and must also have Microsoft Office Web Components installed. Users of a different browser can view the PivotTable report, but cannot use its interactive features.

Publishing a PivotTable report to the Web

> 📖 Although you can include symbols such as number signs (**#**) or periods (**.**) in field names in a PivotTable report, you should not do so if you intend to publish the report as an interactive PivotTable list. Field names in a PivotTable list, however, can include spaces.

> 📖 You can also publish interactive PivotChart reports to the Web. If you include interactivity, the PivotChart and PivotTable reports are published on the same web page.

✔️ **Procedures**

1. Open a workbook containing a PivotTable report you want to publish to the Web.

2. Select the worksheet containing the PivotTable report you want to publish.

3. Select the **File** menu.

4. Select the **Save as Web Page** command.

5. Type the desired file name in the **File name** box.

6. Select the **Save in** list.

7. Select the drive where you want to save the HTML file.

8. Open the folder where you want to save the HTML file.

9. Select **Publish**.

10. Under **Item to publish**, select **PivotTable**.

11. Under **Viewing options**, select the **Add interactivity with** option.

12. Select the **Open published web page in browser** option.

13. Select **Publish**.

ADDING FIELDS TO A PIVOTTABLE - BROWSER

🔎 **Discussion**

PivotTable lists are interactive PivotTable reports that can be manipulated in a web browser. Users can change the layout and fields of a PivotTable list in their web browser. In order to use PivotTable lists, the web browser must be Internet Explorer version 4.01 or greater, and the Microsoft Office Web Components must be installed.

A PivotTable list can be changed using the toolbar buttons that appear at the top of the list. You can add fields to the row, column, filter, data, or detail areas using the **Field List** button on the toolbar above the PivotTable list. The row, column, and data areas are identical to those in a PivotTable report. The page area in a PivotTable report in a worksheet, however, is known as the filter area in a PivotTable list. The detail area is a collapsed field in the data area.

You can drag fields to rearrange or remove them from the PivotTable list.

An interactive PivotTable list

📖   Users viewing the PivotTable list in a different browser will be able to view the PivotTable list, but not use its interactive features.

📖   You will not be able to view the details for a PivotTable list if it is based upon an OLAP (On-Line Analytical Processing) database; only summarized data is available for OLAP databases. OLAP databases are used to create queries and reports for large databases. Non-OLAP data, such as Access databases and Excel lists, display all available data.

✅ Procedures

1. Open an HTML file containing an interactive PivotTable list in Internet Explorer 4.01 or greater.

2. Click the **Field List** button 📄 on the toolbar above the PivotTable list.

3. Select the field you want to add from the PivotTable Field List window.

4.   Select the list to the right of **Add to**.

5.   Select the area to which you want to add the field.

6.   Select **Add to**.

USING A PIVOTTABLE LIST

Discussion

PivotTable lists can be changed using objects available in the Internet Explorer window. Although PivotTable reports in worksheets display only the fields you select, PivotTable lists in a web browser contain all the underlying details from the source data. You can show or hide individual field or item details as desired by clicking the plus and minus buttons adjacent to each field and item. Drop-down lists for row, column, and page fields can be used to customize the PivotTable list by showing or hiding the data for specific items within a field.

The toolbar above the PivotTable list provides buttons for copying and sorting fields, enabling and disabling filters, calculating fields, and displaying and refreshing data.

The **Show Top/Bottom Items** button allows you to filter a field to display a specific number or a specified percent of top or bottom items. For example, you can display the five top salespeople in the **Salesman** field. Once a filter has been applied, you can use the **AutoFilter** button to enable or disable the filter.

You can change the type of calculated data displayed in the filter area. You can use the **AutoCalc** button to add calculated fields and the **Calculated Totals and Fields** button to create custom calculations. In addition, the **Show As** button can be used to change the data display in the filter area to percents.

The **Export to Excel** button exports the PivotTable list to an Excel worksheet.

The **Command and Options** button is used to format fields as well as show and hide elements of the PivotTable list. The Commands and Options dialog box is context-sensitive; the pages and options available depend upon what is selected in the PivotTable list.

> The **Show Details** and **Hide Details** buttons on the toolbar above the PivotTable list perform the same functions as selecting the plus or minus buttons adjacent to each field. If an item is selected, only that item will collapse or expand; if no items are selected, all items in the PivotTable list will collapse or expand.

> 📖 When you point to a data item, details about that item appear in a ScreenTip.

> 📖 You can hide the interactive PivotTable list toolbar by right-clicking the toolbar and deselecting the **Toolbar** command or by deselecting the **Toolbar** option on the **Behavior** page in the Command and Options dialog box.

✔ Procedures

1. Open a PivotTable list in Explorer 4.01 or greater.

2. Click the field name of the row or column with the subtotal you want to hide or display.

3. Click the **Subtotal** button on the toolbar above the PivotTable list.

4. Click the field name of a row or column you want to expand.

5. Click the **Expand** button on the toolbar above the PivotTable list.

6. Click the plus button adjacent to any item you want to expand.

7. Click the minus button adjacent to any item you want to collapse.

8. Select the arrow to the right of the field you want to customize.

9. Select or deselect the field items you want to hide or display, respectively.

10. Select **OK**.

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