PivotTables and PivotCharts are powerful tools used to rearrange and present spreadsheet information. PivotTables allow you to select data fields to compare, or ‘pivot’, against each other, paring down large quantities of info into specific, useful summaries with sorting and filtering options. PivotCharts are a visual representation of PivotTable results, displaying summaries in a variety of graph formats so you can identify important trends and present data to others. New in Excel 2010 are Slicers: visual control panels used to quickly and dynamically filter PivotTables, which can be very effective in a presentation or meeting.

**Note:** Since some basic knowledge of Excel 2010 is assumed, those in need of a starter guide are referred to the *Excel 2010 Quick Reference Guide* by Nevada Learning Series.

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### Basic PivotTables

#### Creating a PivotTable

1. In an Excel spreadsheet, select the raw data that your new PivotTable will use. Remember to include the column labels, which are used to identify data, at the top in your selection.

   **Tip:** Press CTRL+A to select the contents of the entire spreadsheet.

2. Under the **Insert** tab, click **PivotTable** in the **Tables** group.

3. In the **Create PivotTable** dialog box, click **OK** to create a PivotTable in a new worksheet.

   **Note:** Alternatively, click the **Existing Worksheet** radio button and select an existing location where the PivotTable will be placed.

4. Find and display the newly-created PivotTable. If you chose default options, it will be located in a new tab in your workbook. If an error message appears, **check to make sure all columns have label headers**.

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<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum of Order Total</td>
<td>Elko</td>
<td>Megalopolis</td>
<td>Phoenix Down</td>
<td>Grand Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York City</td>
<td>1497</td>
<td>1497</td>
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</tr>
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<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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#### Populating a PivotTable

**To populate a PivotTable with fields:** In the PivotTable Field List pane, click and drag a field from the list into one of the four pane areas below (e.g. **Row Labels**, **Column Labels**). A check box indicates that a field is currently in use.

**To remove a field from a PivotTable:** Click a field and drag it back up to the field list. Alternatively, click on a field in use and select **Remove Field** from the menu.

**To remove all fields from a PivotTable:** Click anywhere in the PivotTable to select it. Under the **PivotTable Tools Options** tab, click **Clear** in the **Actions** group and choose **Clear All** from the menu.

**To display the PivotTable Field List pane:** Click anywhere in the PivotTable to select it. Under the **PivotTable Tools Options** tab, click **Field List** in the **Show** group.

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### PivotTable Field List Pane

- **Product Ordered**
- **Elko**
- **Megalopolis**
- **Phoenix Down**
- **Grand Total**

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### PivotChart

A PivotChart is a visual representation of PivotTable results, displaying summaries in a variety of graph formats so you can identify important trends and present data to others. New in Excel 2010 are Slicers: visual control panels used to quickly and dynamically filter PivotTables, which can be very effective in a presentation or meeting.

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Understanding the PivotTable Field List Pane

The best way to learn how fields interact with each other is to experiment with different field / area combinations until you get the most useful PivotTable for your purposes. Note that not all PivotTables need to have a field in each area, and some PivotTables may have multiple fields per area.

**Row Labels:** fields placed in this area will make up the horizontal (X) axis of a basic column PivotChart.

**Values:** fields placed in this area will make up the vertical (Y) axis of a basic column PivotChart.

**Column Labels:** fields placed in this area become the different types, or series, of data that are compared in a basic column PivotChart.

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**Update options**

If changes are made to the original raw data spreadsheet that a PivotTable uses, you will need to refresh the PivotTable to reflect these changes.

**Designing PivotTables**

Changing a PivotTable’s visual elements can highlight areas of particular interest or make the table more presentation-ready.

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**Grouping Sections of Data**

You can group PivotTable rows or columns to keep related subsets of data together for quick comparison or analysis.

**To group PivotTable data:** hold the CTRL key and click on either the row labels (to group by row) or column headers (to group by column) of all data sections to be grouped together. Under the PivotTable Tools Options tab, click Group Selection.

The sections will be grouped under a default name (e.g. Group1), which can be changed by selecting the group name cell, typing a new name, and pressing ENTER.

**Note:** An additional field will automatically be created and added to the PivotTable Field List to reflect the change to the PivotTable’s structure.

**To expand or collapse group view:** click the icon beside a group name to display all grouped sections. Click the icon to hide grouped sections.

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**Adding a PivotTable**

As you populate a PivotTable with fields, its appearance updates automatically by default to reflect changes. In some cases, such as with very large reports that contain many values, you may wish to manually update a PivotTable only after making numerous changes.

**To manually update a PivotTable:** in the PivotTable Field List pane, check the box. The PivotTable will no longer reflect changes you make until you click .

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**Changing PivotTables**

Changing a PivotTable’s visual elements can highlight areas of particular interest or make the table more presentation-ready.

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**To change a PivotTable’s visual style:** click anywhere in the PivotTable to select it. Under the PivotTable Tools Design tab, click to open a window with more options.

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**To add a blank line between groups:** click anywhere in the PivotTable to select it. Under the PivotTable Tools Options tab, click Blank Rows in the Layout group and choose Insert Blank Line after Each Item from the menu. To remove blank lines, choose Remove Blank Line after Each Item from the menu.

**To display group subtotals:** click anywhere in the PivotTable to select it. Under the PivotTable Tools Options tab, click Subtotals in the Layout group and choose Show all Subtotals at Bottom of Group (or Show all Subtotals at Top of Group) from the menu. To hide group subtotals, choose Do Not Show Subtotals from the menu.

**To hide and icons in a PivotTable report:** click anywhere in the PivotTable to select it. Under the PivotTable Tools Options tab, click +/- Buttons in the Show group to toggle icon display on or off.

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### Sorting PivotTables

Sorting sections of data will rearrange a PivotTable report as needed. The sorting options available depend on the type of information selected: lists of names, for example, can be sorted alphabetically, while numbered sections can be sorted in ascending or descending order according to their values. Dates are sorted from oldest to newest, or vice versa.

To sort in ascending or descending order:

1. Select the row, column, or cells containing the data to be sorted.
2. Under the PivotTable Tools Options tab, click `Sort`. If the `Sort` icon is grayed out, ensure your selection does not include non-sortable cells, such as Row Label or Column Label headers.
3. In the Sort dialog box, click the `Ascending` or `Descending` radio button as needed. You can also select a field category from the drop-down list to sort by, if your initial selection contained more than one field. **Tip:** If working with a block of number values, you can choose between `Smallest to Largest` or `Largest to Smallest` instead. You can also choose between sorting from `Top to Bottom` or from `Left to Right`.
4. Click OK to update your PivotTable report.

By default, Excel will auto-sort a PivotTable whenever it is updated.

To turn off AutoSort: under the PivotTable Tools Options tab, click `Sort` and uncheck the `Sort automatically every time the report is updated` box. Click OK twice to close the Sort dialog box.

### Filtering PivotTables

Use filters to narrow the range of information displayed in a PivotTable report (e.g. to only include data from certain dates). Filtering is a good way to emphasize relevant information within a larger set of data.

To manually filter a field in a PivotTable report: click the arrow icon to the right of the header (e.g. `Column Labels`) for the field you want to add a filter to. In the pop-up menu, click to de-select the check box beside each entry you want to temporarily remove from the PivotTable display. Click OK when finished.

#### Using Report Filter Fields

PivotTable reports can also be filtered using fields or criteria that are not actively displayed or used in the PivotTable. For example, you may want to only view sales entries related to a certain city, even though the ‘City’ field is not a Row Label or a Column Label in your report.

To add a new report filter field:

1. In the PivotTable Field List pane, click and drag a field from the list into the Report Filters pane area. By default, a new filter section is added above the main PivotTable report.

2. On the worksheet, click the icon to the right of the new filter section.
3. In the pop-up menu, click the field value you want to include. Click OK to filter out all other, unrelated data from the PivotTable.

#### Slicers

Introduced in Excel 2010, slicers are a visual tool for filtering PivotTable data on-the-fly. Slicer boxes are useful in presentation situations, where you may need to quickly filter information in response to questions or explore data relationships on demand. Slicers can be moved and resized much like other Excel graphic objects.

To add a slicer:

1. Select the PivotTable the slicer will be linked to. Under the Insert tab, click `Slicer` in the Filter group.
2. In the Insert Slicers dialog box, check the box beside each data field you want to create a slicer for. Click OK to place the slicer box(es) on your worksheet.
3. In the slicer box, click a button to filter the PivotTable data. Hold CTRL or SHIFT while clicking to select multiple buttons.

#### Editing Slicer Properties

Right-click on a slicer and choose `Slicer Settings` from the menu.

To change the slicer title: check the Display header box and type a new title for the slicer box in the Caption area. Click OK.

To sort item order in a slicer box: select a field category from the drop-down list to sort by, if your initial selection contained more than one field. **Tip:** More slicer options, including a style gallery, are available under the Slicer Tools Options tab, which appears on the Ribbon when a slicer is selected.
Creating a Basic PivotChart

PivotCharts provide a graphic representation of data relationships and trends, based on the way information is arranged in a PivotTable report.

To add a PivotChart: click anywhere in an existing PivotTable to select it. Under the PivotTable Tools Options tab, click PivotChart in the Tools group. In the Insert Chart dialog box, select a desired chart type (e.g. Column, Line, Pie). Click OK to insert the selected chart. When you select the PivotChart, the PivotChart Filter Pane will display by default.

Note: If you plan on often using the same kind of chart, set it as the default type by clicking [Set as Default Chart] in the Insert Chart dialog box.

Moving and Resizing PivotCharts

To move a PivotChart to its own worksheet: click anywhere in the PivotChart to select it. Under the PivotChart Tools Design tab, click Move Chart in the Location group. In the Move Chart dialog box, click the New sheet radio button and enter a name for the worksheet where the chart will be placed. Click OK.

Format individual elements of a PivotChart:
1. Click anywhere in the PivotChart to select it. Under the PivotChart Tools Layout tab, in the Current Selection group, click the arrow icon to the right of the Chart Elements box. Select the chart element you want to format (e.g. Chart Title, Legend) from the drop-down list.
   Tip: If you click to select an individual element within a PivotChart, the Chart Elements box will display the currently selected element.
2. Under the PivotChart Tools Layout tab, in the Current Selection group, click Format Selection.
3. In the Format <selection> dialog box, make changes as needed. Different options are available depending on which chart element is selected. Click to choose different format categories (e.g. Line Color, Alignment) from the left-hand list. The PivotChart will update to preview format changes.
4. Click Close to finish formatting the chart element.

Adding and Removing PivotChart Elements

While Excel 2010 provides a number of default layout styles for PivotCharts (see To change a PivotChart’s layout or visual style, left), you can customize which elements appear in a chart. Some of these options may not be available, depending on the type of chart (e.g. Stock, Bubble) being modified.

Titles and Labels

To add, remove, or modify a chart title: click anywhere in the PivotChart to select it. Under the PivotChart Tools Layout tab, click Chart Title in the Labels group, and choose an option (e.g. None, Centered Overlay Title) from the menu.
Tip: You can choose More <element> Options from the bottom of many of these menus to open a dialog box with more options.
To add, remove, or modify an axis title: click anywhere in the PivotChart to select it. Under the PivotChart Tools Layout tab, click Axes Titles in the Labels group. Select which axis you want to modify, and choose an option (e.g. None, Rotated Title) from the menu.
To add, remove, or modify a chart legend: click anywhere in the PivotChart to select it. Under the PivotChart Tools Layout tab, click Legend in the Labels group, and choose an option (e.g. None, Show Legend at Top) from the menu.
To add or remove data labels: click anywhere in the PivotChart to select it. Under the PivotChart Tools Layout tab, click Data Labels in the Labels group, and choose an option (e.g. None, Show). Data labels, when enabled, overlay values on the chart's graphical elements.

Axes and Lines

To modify a PivotChart’s axes: click anywhere in the PivotChart to select it. Under the PivotChart Tools Layout tab, click Axes in the Axes group. Select which axis you want to modify, and choose an option (e.g. Show Axes, Show Axes in Thousands) from the menu.
To modify a PivotChart’s gridlines: click anywhere in the PivotChart to select it. Under the PivotChart Tools Layout tab, click Gridlines in the Axes group. Select which axis you want to modify, and choose an option (e.g. None, Major Gridlines) from the menu.
To add or remove error bars: click anywhere in the PivotChart to select it. Under the PivotChart Tools Layout tab, click Error Bars in the Analysis group, and choose an option (e.g. None, Error Bars with Standard Deviation) from the menu. Error bars overlay established measures of error on a PivotChart.

Formatting PivotCharts

To change a PivotChart to a different chart type: click anywhere in the PivotChart to select it. Under the PivotChart Tools Design tab, click Change Chart Type in the Type group. In the Change Chart Type dialog box, select the desired new chart type and click OK.
To change a PivotChart’s layout or visual style: click anywhere in the PivotChart to select it. Under the PivotChart Tools Design tab, click on a thumbnail from the Chart Layouts gallery to choose a new layout arrangement. Click on a thumbnail from the Chart Styles gallery to choose a new visual style. Click the icon to the right of either gallery to open a window with more options.

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