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Excel 2016 Advanced
Quick Reference Guide

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PivotTable Elements

PivotTable Fields Pane

Active PivotTable   Search PivotTable Fields   Fields Pane Options

Tools Menu

Field List

PivotTable Field Areas
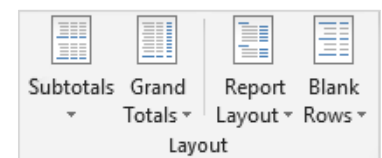
PivotTable Layout

PivotTable Fields Pane

The PivotTable Fields pane controls how data is represented in the PivotTable. Click anywhere in the PivotTable to activate the pane. It includes a Search field, a scrolling list of fields (these are the column headings in the data range used to create the PivotTable), and four areas in which fields are placed. These four areas include:

Filters: If a field is placed in the Filters area, a menu appears above the PivotTable. Each unique value from the field is an item in the menu, which can be used to filter PivotTable data.

Column Labels: The unique values for the fields placed in the Columns area appear as column headings along the top of the PivotTable.

Row Labels: The unique values for the fields placed in the Rows area appear as row headings along the left side of the PivotTable.

Values: The values are the "meat" of the PivotTable, or the actual data that's calculated for the fields placed in the rows and/or columns area. Values are most often numeric calculations.

Not all PivotTables will have a field in each area, and sometimes there will be multiple fields in a single area.

The Layout Group

Subtotals: Show or hide subtotals and specify their location in the PivotTable.

Grand Totals: Add or remove grand total rows for columns and/or rows.

Report Layout: Adjust the report layout to show in compact, outline, or tabular form.

Blank Rows: Emphasize groups of data by manually adding blank rows between grouped items.

PivotTables

Create a PivotTable: Select the data range to be used by the PivotTable. Click the **Insert** tab on the ribbon and click the **PivotTable** button in the Tables group. Verify the range and then click **OK**.

Add Multiple PivotTable Fields: Click a field in the field list and drag it to one of the four PivotTable areas that contains one or more fields.

Filter PivotTables: Click and drag a field from the field list into the Filters area. Click the field's list arrow above the PivotTable and select the value(s) you want to filter.

Group PivotTable Values: Select a cell in the PivotTable that contains a value you want to group by. Click the **Analyze** tab on the ribbon and click the **Group Field** button. Specify how the PivotTable should be grouped and then click **OK**.

Refresh a PivotTable: With the PivotTable selected, click the **Analyze** tab on the ribbon. Click the **Refresh** button in the Data group.

Format a PivotTable: With the PivotTable selected, click the **Design** tab. Then, select the desired formatting options from the PivotTable Options group and the PivotTable Styles group.

PivotCharts

Create a PivotChart: Click any cell in a PivotTable and click the **Analyze** tab on the ribbon. Click the **PivotChart** button in the Tools group. Select a PivotChart type and click **OK**.

Modify PivotChart Data: Drag fields into and out of the field areas in the task pane.

Refresh a PivotChart: With the PivotChart selected, click the **Analyze** tab on the ribbon. Click the **Refresh** button in the Data group.

Modify PivotChart Elements: With the PivotChart selected, click the **Design** tab on the ribbon. Click the **Add Chart Element** button in the Chart Elements group and select the item(s) you want to add to the chart.

Apply a PivotChart Style: Select the PivotChart and click the **Design** tab on the ribbon. Select a style from the gallery in the Chart Styles group.

Update Chart Type: With the PivotChart selected, click the **Design** tab on the ribbon. Click the **Change Chart Type** button in the Type group. Select a new chart type and click **OK**.

Enable PivotChart Drill Down: Click the **Analyze** tab. Click the **Field Buttons** list arrow in the Show/Hide group and select **Show Expand/Collapse Entire Field Buttons**.

Macros

Enable the Developer Tab: Click the **File** tab and select **Options**. Select **Customize Ribbon** at the left. Check the **Developer** check box and click **OK**.

Record a Macro: Click the **Developer** tab on the ribbon and click the **Record Macro** button. Type a name, description and specify where to save it. Click **OK**. Complete the steps to be recorded. Click the **Stop Recording** button on the Developer tab.

Run a Macro: Click the **Developer** tab on the ribbon and click the **Macros** button. Select the macro and click **Run**.

Edit a Macro: Click the **Developer** tab on the ribbon and click the **Macros** button. Select a macro and click the **Edit** button. Make the necessary changes to the Visual Basic code and click the **Save** button.

Delete a Macro: Click the **Developer** tab on the ribbon and click the **Macros** button. Select a macro and click the **Delete** button.

Macro Security: Click the **Developer** tab on the ribbon and click the **Macro Security** button. Select a security level and click **OK**.

Troubleshoot Formulas

Common Formula Errors:

- **######** - The column isn't wide enough to display all cell data.
- **#NAME?** - The text in the formula isn't recognized.
- **#VALUE!** - There is an error with one or more formula arguments.
- **#DIV/0** - The formula is trying to divide a value by 0.
- **#REF!** - The formula references a cell that no longer exists.

Trace Precedents: Click the cell containing the value you want to trace and click the **Formulas** tab on the ribbon. Click the **Trace Precedents** button to see which cells affect the value in the selected cell.

Jan	Feb	Total
6,010	7,010	13,020

Error Checking: Select a cell containing an error. Click the **Formulas** tab on the ribbon and click the **Error Checking** button in the Formula Auditing group. Use the dialog to locate and fix the error.

The Watch Window: Select the cell you want to watch. Click the **Formulas** tab on the ribbon and click the **Watch Window** button. Click the **Add Watch** button. Ensure the correct cell is identified and click **Add**.

Evaluate a Formula: Select a cell with a formula. Click the **Formulas** tab on the ribbon and click the **Evaluate Formula** button.

Advanced Formatting

Customize Conditional Formatting: Click the **Conditional Formatting** button on the Home tab and select **New Rule**. Select a rule type and then edit the styles and values. Click **OK**.

Edit a Conditional Formatting Rule: Click the **Conditional Formatting** button on the Home tab and select **Manage Rules**. Select the rule you want to edit and click **Edit Rule**. Make your changes to the rule. Click **OK**.

Change the Order of Conditional Formatting Rules: Click the **Conditional Formatting** button on the Home tab and select **Manage Rules**. Select the rule you want to re-sequence. Click the **Move Up** or **Move Down** arrow until the rule is positioned correctly. Click **OK**.

Analyze Data

Goal Seek: Click the **Data** tab on the ribbon. Click the **What-If Analysis** button and select **Goal Seek**. Specify the desired value for the given cell and which cell can be changed to reach the desired result. Click **OK**.

Advanced Formulas

Nested Functions: A nested function is when one function is tucked inside another function as one of its arguments, like this:

$$=IF(D2>AVERAGE(B2:B10),1,0)$$

Initial Function | **Nested Function**

IF: Performs a logical test to return one value for a true result, and another for a false result.

$$=IF(B2>69,"True","False")$$

logical_test that can be evaluated as true or false | **value_if_true** value to return when the test is true | **value_if_false** value to return when the test is false

AND, OR, NOT: Often used with IF to support multiple conditions.

- **AND** requires multiple conditions.
- **OR** accepts several different conditions.
- **NOT** returns the opposite of the condition.

$$=OR(B5="MN",B5="WI")$$

logical1 the first condition to evaluate | **logical2** the second condition to evaluate

SUMIF and AVERAGEIF: Calculates cells that meet a condition.

- **SUMIF** finds the total.
- **AVERAGEIF** finds the average.

$$=SUMIF(C6:C10,"MN",D6:D10)$$

range of cells you want to apply criteria against | **criteria** used to determine what cells to sum or average | **calc_range** to calculate, if different than the range

Advanced Formulas

VLOOKUP: Looks for and retrieves data from a specific column in a table.

	A	B	C	D	E
1				Agent Sales	
2				5	7367
3					
4	Agent ID	First	Last	Packages	Sales
5	1	Joel	Nelson	6	6,602
6	2	Louis	Hay	7	8,246
7	3	Anton	Baril	11	13,683
8	4	Caroline	Jolie	12	14,108
9	5	Daniel	Ruiz	5	7,367

$$=VLOOKUP(D2,A4:E10,5)$$

value to look for in the first column of the table | **table** from which to retrieve a value | **col_index** the column number in the table from which to retrieve a value

HLOOKUP: Looks for and retrieves data from a specific row in a table.

$$=HLOOKUP(B5,B2:I3,3)$$

value to look for in the first row of the table | **table** from which to retrieve a value | **row_index** the row number in the table from which to retrieve a value

UPPER, LOWER, and PROPER: Changes how text is capitalized.

UPPER Case | lower case | Proper Case

$$=UPPER(B4)$$

text to change case or capitalization

LEFT and RIGHT: Extracts a given number of characters from the left or right.

$$=LEFT(B5,3)$$

text from which to extract characters | **num_chars** to extract from the left or right side of the text

MID: Extracts a given number of characters from the middle of text; the example below would return "day".

$$=MID("Sunday",4,3)$$

text from which to extract characters | **start_num** location of the first character to extract | **num_chars** the number of characters to extract

MATCH: Locates the position of a lookup value in a row or column.

$$=MATCH("Dog",B2:B10)$$

lookup_value to match in the lookup_array | **lookup_array** range of cells

INDEX: Returns a value or the reference to a value from within a range.

$$=INDEX(A1:B5,2,2)$$

array a range of cells | **row_num** the row position | **col_num** the column position (optional)

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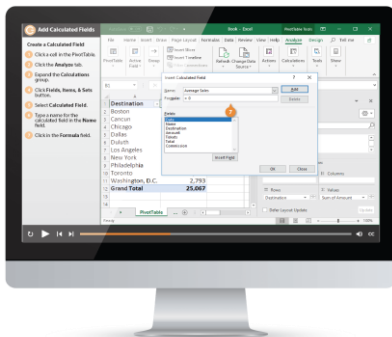
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