



Microsoft®

Excel 2016 Advanced Quick Reference Card



PivotTable Elements

Active PivotTable

PivotTable Fields Pane

Search PivotTable Fields

Fields Pane Options

Tools Menu

Field List

PivotTable Field Areas

| Row Labels | Boston | Cancun | Chicago |
|--------------------|-----------|-----------|-----------|
| Jan | 8 | 6 | 6 |
| Feb | 1 | 7 | 8 |
| Mar | 5 | 8 | 9 |
| Grand Total | 14 | 21 | 23 |

PivotTable Layout

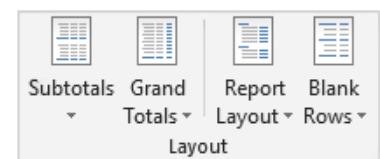
PivotTable Fields Pane

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 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 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, use the options on the Design tab to adjust the PivotTable styles and style options.

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. Both the PivotTable and PivotChart update instantaneously.

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 the 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**.

Macro Naming Rules:

- The first character must be a letter.
- Only letters, numbers, and underscores are accepted.
- Spaces, periods, and special characters are not allowed.
- The name can't exceed 255 characters; it's best practice to keep it under 25.

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.

Troubleshoot Formulas

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 to evaluate. Click the **Formulas** tab on the ribbon and click the **Evaluate Formula** button. Click the **Evaluate** button as many times as required to locate the error.

Advanced Formatting

Customize Conditional Formatting: Click the **Conditional Formatting** button on the Home tab and select **New Rule** in the menu. 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**.

International Number Formats: Select the cell(s) you want to format. Click the **Number** group's dialog box launcher on the Home tab. Select **Currency** or **Accounting** and modify the symbol. Or, select **Date** or **Time** and update the Locale. Click **OK**.

Customize Workbook Themes: Click the **Page Layout** tab. Apply the desired theme colors, fonts, and effects. Click the **Themes** button and select **Save Current Theme**. Enter a name for the custom theme and click **Save**.

Insert Form Controls: Click the **Developer** tab on the ribbon. Click the **Insert** button in the Controls group and select a form control. Click and drag to place the form control. Right-click the form control and select **Format Control**. Modify the form control settings and click **OK**.

Advanced Formulas

Formula Calculation Options: Click the **Formulas** tab on the ribbon. Click the **Calculation Options** button in the Calculation group and select a calculation option:

- **Automatic:** Calculates a formula instantly when entered in a sheet.
- **Automatic Except for Data Tables:** Calculates a formula in a sheet instantly. Data tables are only calculated when a change is made.
- **Manual:** Only calculates a formula when manually prompted.

Advanced Formulas

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

=IF(D2>AVERAGE(B2:B10),"Yes","No")
Initial Nested Result Result
Function Function If 'True' If 'False'

The Vlookup Function: The Vlookup function =VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup]) looks for a value you specify in the first column of data and then returns a value in the same row from a column you specify.

| Agent ID | First | Last | Packages | Sales |
|----------|----------|--------|----------|--------|
| 1 | Joel | Nelson | 6 | 6,602 |
| 2 | Louis | Hay | 7 | 8,246 |
| 3 | Anton | Baril | 11 | 13,683 |
| 4 | Caroline | Jolie | 12 | 14,108 |
| 5 | Daniel | Ruiz | 6 | 7,367 |

Logical Functions: Use a logical function such as And, Or, or Not when you want to carry out more than one comparison in a formula.

The Sumif and Averageif Functions: Use the Sumif and Averageif functions when you only want to find a sum or average if a certain condition is met. A different result will be generated if the condition is not met.

The Index and Match Functions: The Index and Max functions combine to form a function more powerful than Vlookup. They allow you to return any value in a range based on vertical and horizontal criteria. The syntax looks like this: =INDEX(range, MATCH(lookup_value, lookup_range, match_type)).

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**.

Scenario Manger: Click the **Data** tab on the ribbon. Click the **What-If Analysis** button and select **Scenario Manager**. Click the **Add** button. Give the scenario a name and specify which cells can change to reach the desired result. Click **OK**. If desired, add additional scenarios to view other possible results.

Consolidate Data: Select a cell in the spreadsheet where you want to place the consolidated data. Click the **Data** tab on the ribbon and click the **Consolidate Data** button. Select the function you want to perform on the consolidated data using the Function list. Type a cell range into the Reference field for a set of cells to include in the consolidation. Click **Add**. Include additional references for all the data ranges you wish to consolidate. Click **OK**.

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