Create a PivotTable to analyze worksheet data

*Applies To: Excel 2016 Excel 2013 Excel 2010 Excel 2007 Excel 2016 for Mac**More...*

Being able to quickly analyze data can help you make better business decisions. But sometimes it’s hard to know where to start, especially when you have a lot of data. PivotTables are a great way to summarize, analyze, explore, and present your data, and you can create them with just a few clicks. PivotTables are highly flexible and can be quickly adjusted depending on how you need to display your results. You can also create PivotCharts based on PivotTables that will automatically update when your PivotTables do.

For example, here's a simple list of household expenses, and a PivotTable based on it:

|  |  |
| --- | --- |
| **Household expense data** | **Corresponding PivotTable** |
| ample household expense data to create a PivotTable with Months, Categories and Amounts | ample PivotTable with Categories in the Rows section and Months in the columns section |

Next, here's a PivotChart:



**NOTE:** The screen shots in this article were taken in Excel 2016. If you have a different version your view might be slightly different, but unless otherwise noted, the functionality is the same.

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Before you get started

* Your data should be organized in a tabular format, and not have any blank rows or columns. Ideally, you can use an [Excel table](https://support.office.com/en-GB/article/Excel-table-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c) like in our example above.
* Tables are a great PivotTable data source, because rows added to a table are automatically included in the PivotTable when you refresh the data, and any new columns will be included in the **PivotTable Fields**List. Otherwise, you need to either [manually update the data source range](https://support.office.com/en-GB/article/manually-update-the-data-source-range-ad8ed968-ada1-4dde-9f72-30e07782dccd), or use a [dynamic named range formula](https://support.microsoft.com/en-us/kb/830287%22%20%5Ct%20%22_blank).
* Data types in columns should be the same. For example, you shouldn't mix dates and text in the same column.
* PivotTables work on a snapshot of your data, called the cache, so your actual data doesn't get altered in any way.

Create a PivotTable

If you have limited experience with PivotTables, or are not sure how to get started, a **Recommended PivotTable** is a good choice. When you use this feature, Excel determines a meaningful layout by matching the data with the most suitable areas in the PivotTable. This helps give you a starting point for additional experimentation. After a recommended PivotTable is created, you can explore different orientations and rearrange fields to achieve your specific results. The Recommended PivotTables feature was added in Excel 2013, so if you have an earlier version, follow the instructions below for how to manually create a PivotTable instead.

|  |  |
| --- | --- |
| **Recommended PivotTable** | **Manually create a PivotTable** |
| 1. Click a cell in the source data or table range.
2. Go to **Insert** > **Tables** > **Recommended PivotTable**.

o to Insert > Recommended PivotTables to have Excel create a PivotTable for you1. Excel analyzes your data and presents you with several options, like in this example using the household expense data.

xcel Recommended PivotTables dialog1. Select the PivotTable that looks best to you and press **OK**. Excel will create a PivotTable on a new sheet, and display the **PivotTable Fields**List.
 | 1. Click a cell in the source data or table range.
2. Go to **Insert** > **Tables** > **PivotTable**.

o to Insert > PivotTable to insert a blank PivotTableIf you're using Excel for Mac 2011 and earlier, the PivotTable button is on the **Data** tab in the **Analysis** group.ata tab, Analysis group1. Excel will display the **Create PivotTable** dialog with your range or table name selected. In this case, we're using a table called "tbl\_HouseholdExpenses".

xcel Create PivotTable dialog1. In the **Choose where you want the PivotTable report to be placed** section, select **New Worksheet**, or **Existing Worksheet**. For **Existing Worksheet**, you'll need to select both the worksheet and the cell where you want the PivotTable placed.
2. If you want to include multiple tables or data sources in your PivotTable, click the **Add this data to the Data Model**check box.
3. Click **OK**, and Excel will create a blank PivotTable, and display the **PivotTable Fields** list.
 |

Working with the PivotTable Fields list

In the **Field Name** area at the top, select the check box for any field you want to add to your PivotTable. By default, non-numeric fields are added to the **Row** area, date and time fields are added to the **Column** area, and numeric fields are added to the **Values** area. You can also manually drag-and-drop any available item into any of the PivotTable fields, or if you no longer want an item in your PivotTable, simply drag it out of the Fields list or uncheck it. Being able to rearrange Field items is one of the PivotTable features that makes it so easy to quickly change its appearance.

|  |  |
| --- | --- |
| **PivotTable Fields list** | **Corresponding fields in a PivotTable** |
| xample of the Excel PivotTable Fields list dialog | xample of a PivotTable and how the Fields correlate to the Fields list. |

PivotTable Values

* **Summarize Values By**

By default, PivotTable fields that are placed in the **Values** area will be displayed as a **SUM**. If Excel interprets your data as text, it will be displayed as a **COUNT**. This is why it's so important to make sure you don't mix data types for value fields. You can change the default calculation by first clicking on the arrow to the right of the field name, then select the **Value Field Settings** option.



Next, change the calculation in the **Summarize Values By** section. Note that when you change the calculation method, Excel will automatically append it in the **Custom Name** section, like "Sum of FieldName", but you can change it. If you click the **Number Format** button, you can change the number format for the entire field.



**TIP:** Since the changing the calculation in the **Summarize Values By** section will change the PivotTable field name, it's best not to rename your PivotTable fields until you're done setting up your PivotTable. One trick is to use **Find & Replace**(**Ctrl+H**) >**Find what** > "**Sum of**", then **Replace with** > leave blank to replace everything at once instead of manually retyping.

* **Show Values As**

Instead of using a calculation to summarize the data, you can also display it as a percentage of a field. In the following example, we changed our household expense amounts to display as a **% of Grand Total**instead of the sum of the values.



Once you've opened the **Value Field Setting** dialog, you can make your selections from the **Show Values As** tab.



* **Display a value as both a calculation and percentage.**

Simply drag the item into the **Values** section twice, then set the **Summarize Values By** and **Show Values As** options for each one.

Refreshing PivotTables

If you add new data to your PivotTable data source, any PivotTables that were built on that data source need to be refreshed. To refresh just one PivotTable you can **right-click** anywhere in the PivotTable range, then select **Refresh**. If you have multiple PivotTables, first select any cell in any PivotTable, then on the **Ribbon** go to **PivotTable Tools** > **Analyze** > **Data** > **Click** the arrow under the **Refresh** button and select **Refresh All**.



Deleting a PivotTable

If you created a PivotTable and decide you no longer want it, you can simply select the entire PivotTable range, then press **Delete**. It won't have any affect on other data or PivotTables or charts around it. If your PivotTable is on a separate sheet that has no other data you want to keep, [deleting that sheet](https://support.office.com/en-GB/article/deleting-that-sheet-d29f9c85-27a6-4571-be40-9ea9f6ac7c13) is a fast way to remove the PivotTable.