

Sort Data



Excel 2021

Sorting

Sorting in Excel is one of those deceptively simple features that becomes incredibly powerful once you understand how it preserves data integrity and interacts with clean datasets.

Key Points About Sorting

- **Purpose:** Reorders data based on criteria (alphabetical, numeric, date/time, cell color, or conditional formatting).
- **Scope:** Can sort by **row** or **column**, though column sorting is most common.
- **Integrity:** Sorting doesn't change the raw data—it only changes the order of rows. Each row's data stays intact.
- **Multiple Sorts:** You can apply layered sorts (e.g., sort by department, then by salary).
- **Persistence:** Sorts are saved with the workbook. Undo must be used before saving if you want to revert.

Unsorted data

	A	B	C	D	E
1	Last Name	First Name	Hire Date	Department	Ext.
2	Burke	Steven	10/30/2011	IT	4005
3	Howell	Stanley	8/12/1994	Engineering	4168
4	Mcguire	Pamela	3/25/2003	Development	4302
5	Quinn	Sophie	2/4/2003	Facilities	4904
6	Hawkins	Alvin	8/23/1994	Accounting	4299
7	Redd	Randal	7/12/1998	Human Resources	4127
8	Dandridge	Ray	8/12/2007	Accounting	4224
9	Gearheart	Darrell	3/25/2015	Finance	4165
10	Pellham	Marlon	6/20/2009	Management	4529
11	Czapla	Cornell	1/29/2004	Development	4464
12	Rundle	Ruben	6/11/2011	Customer Service	4503
13	Maines	Mac	3/16/2003	Engineering	4987
14	Burke	Theo	5/3/2001	Accounting	4939
15	Carnegie	Filiberto	5/17/1994	Training	4430

Sorted by column A

	A	B	C	D	E
1	Last Name	First Name	Hire Date	Department	Ext.
2	Bierman	Tommie	9/28/2007	Finance	4660
3	Burke	Steven	10/30/2011	IT	4005
4	Burke	Theo	5/3/2001	Accounting	4939
5	Burke	Reva	11/3/1995	Accounting	4447
6	Carnegie	Filiberto	5/17/1994	Training	4430
7	Carreiro	Harlan	12/27/2015	Engineering	4325
8	Charlesworth	Rena	9/1/2007	Human Resources	4716
9	Charon	Jacques	1/14/2003	IT	4459
10	Coutu	Crystle	8/28/2013	Management	4628
11	Czapla	Cornell	1/29/2004	Development	4464
12	Dahl	Julius	1/27/1997	Marketing	4132
13	Dandridge	Ray	8/12/2007	Accounting	4224
14	Gearheart	Darrell	3/25/2015	Finance	4165
15	Hawkins	Alvin	8/23/1994	Accounting	4299

Multiple Column/Row Sorting

When you sort on multiple columns or rows, it's important to consider that all of the columns or rows on which you're sorting, except for the last one you sort on, should contain some duplicate entries. Otherwise, the sort is of no value. Consider the simple example in the following figure.

In this example, the dataset is sorted in ascending order in three different columns. First, it is sorted by Department, then by Office Location, and then by Extension. This sort can provide some analytical value because there are multiple entries with duplicate values in the first two columns

Data sorted first on column D, then on column E, and then on column F

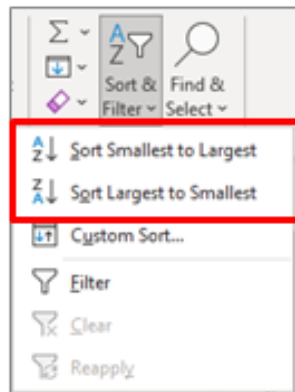
	A	B	C	D	E	F
1	Last Name	First Name	Hire Date	Department	Office Location	Extension
2	Dandridge	Ray	8/12/2007	Accounting	PB4	4224
3	Hawkins	Alvin	8/23/1994	Accounting	PB4	4299
4	Burke	Reva	11/3/1995	Accounting	PB4	4447
5	Sandifer	Catheryn	12/23/2006	Accounting	PB4	4931
6	Burke	Theo	5/3/2001	Accounting	TS3	4939
7	Lipscomb	Phebe	3/28/1999	Customer Service	CC1	4124
8	Rundle	Ruben	6/11/2011	Customer Service	CC1	4503
9	Seibel	Lianne	5/5/2013	Development	CC1	4243
10	Mcguire	Pamela	3/25/2003	Development	CC1	4302
11	Czapla	Cornell	1/29/2004	Development	CC1	4464
12	Ridgley	Jodee	11/6/2010	Development	CC1	4747
13	Howell	Jackeline	11/5/1997	Engineering	CC1	4550
14	Howell	Stanley	8/12/1994	Engineering	PB2	4168
15	Mcguire	Conrad	2/21/2015	Engineering	PB2	4307

Quick Sorts

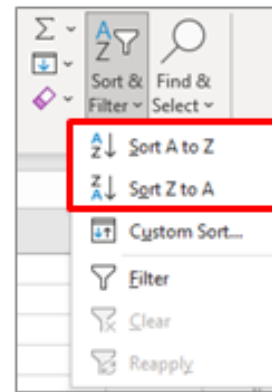
Quick sorts enable you to easily sort the data in a range according to a set of predefined criteria. By using quick sorts, you can sort data one column at a time, in ascending or descending order, according to the type of content stored in the column.

- For example, if the column contains text, you can sort by alphabetical order. If the cells contain numeric values, you can sort lowest to highest, or highest to lowest. If the cells contain dates, you can sort based on chronological order.

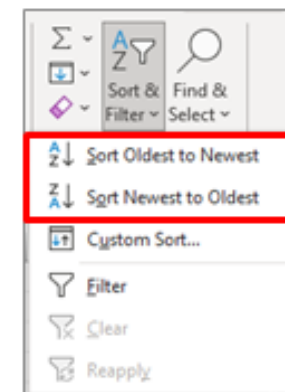
Quick sort numeric values



Quick sort text



Quick sort dates



- Ranges or lists of data that need to be sorted should have a distinct heading row so that Excel does not inadvertently sort the heading row along with the rest of the data. Formatting the heading row bold is all that is needed to avoid problems.

Custom Sorts

To sort your range data by using more highly defined criteria than is possible by using quick sorts, you can define a custom sort.

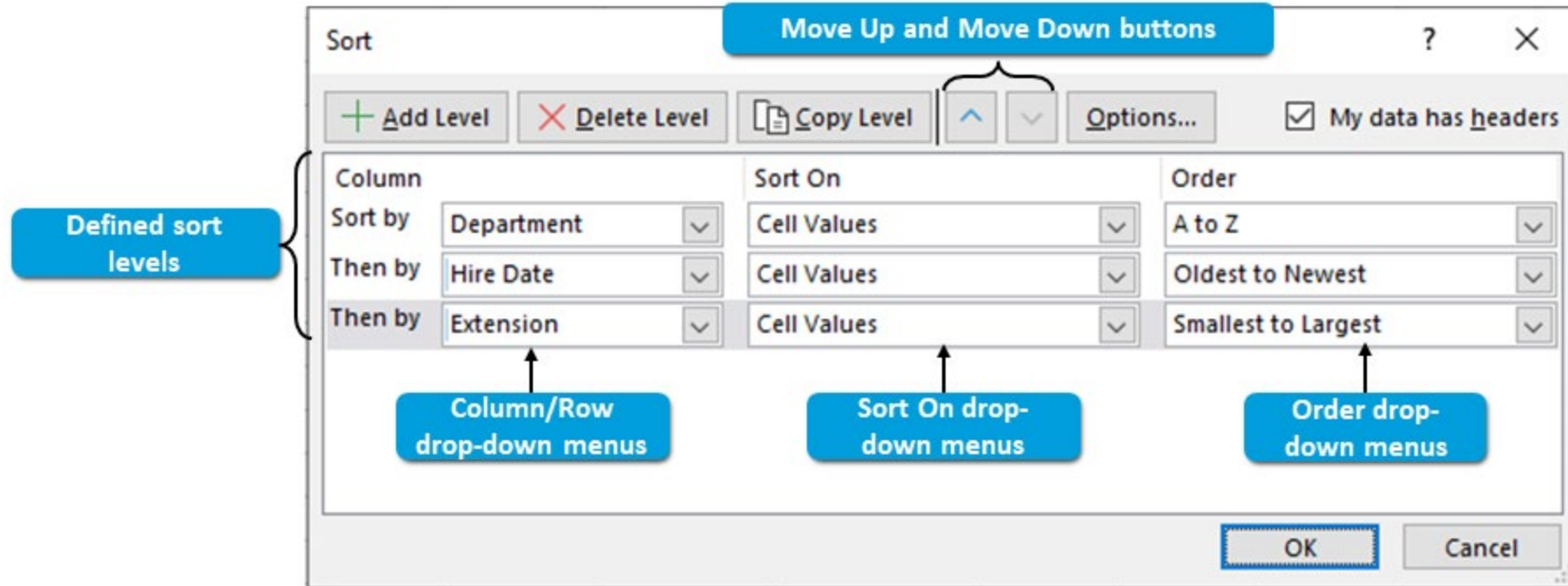
Custom sorting enables you to sort by row or column, to sort on multiple rows or columns simultaneously, and to define specific sort criteria. In addition to the sort criteria that are available by using quick sorts, custom sorts enable you to sort based on cell and font colour, and based on conditional formatting icons.

Each specific criterion you assign to a custom sort is called a level. Excel evaluates and sorts your data based on the order in which you assign sort levels to the data. You can add, delete, edit, and reorder sort levels. Custom sorting is only possible by using ribbon commands.

- You cannot apply both column and row sorting to the same data range.

The Sort Dialog Box

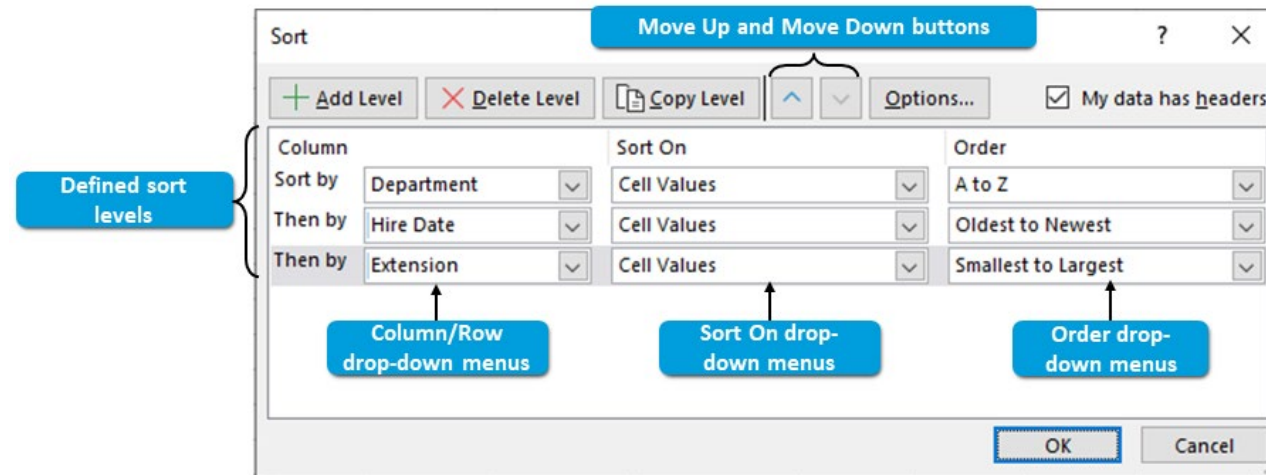
You use the **Sort** dialog box to define and manage your custom sorts. You can access it by selecting **Data → Sort**.



- Because sorting is such a useful function, you can also access the **Sort** dialog box by selecting **Home → Sort & Filter → Custom Sort**

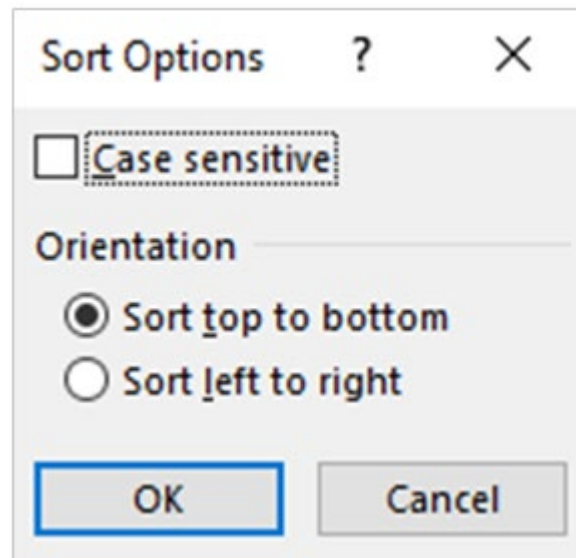
The Sort Dialog Box

Sort Dialog Box Element	Description
Add Level button	Adds new blank sort levels to a custom sort.
Delete Level button	Removes the currently selected sort level from a custom sort.
Copy Level button	Creates a copy of the currently selected sort level and places it immediately after the selected level.
Move Up/Move Down buttons	Enables you to reorder the sort levels in a custom sort.
Options button	Opens the Sort Options dialog box.
Column/Row drop-down menu	Use this to select the column or the row upon which to sort your data. Setting your sort options determines whether you sort by row or column.
Sort On drop-down menu	Use this to select the criteria by which you want to sort your data.
Order drop-down menu	Use this to determine the order in which Excel will display sorted data (for example, alphabetical or oldest to newest). The options that the Order drop-down menu displays depend on the selections you make in the Column/Row drop-down menus and the Sort On drop-down menus.
Defined sort levels	The sort levels appear in the order in which Excel will evaluate and apply data sorting.



The Sort Options Dialog Box

- Use the **Sort Options** dialog box to determine whether Excel will sort by column or row and to define the precedence Excel applies to capitalization while sorting.
- When the **Case sensitive** check box is unchecked, Excel gives precedence to capital letters. When it is checked, it gives precedence to lowercase letters.
- The **Orientation** section has two options. The default, **Sort top to bottom**, sorts by column, and the **Sort left to right** option sorts by row.
- You can access the dialog box by selecting the **Options** button in the **Sort** dialog box.



Activity 13. Sorting Data

Filter Data



Excel 2021

Filtering

- **Purpose:** Filtering temporarily hides rows that don't meet specified criteria, making data easier to work with.
- **Effect on data:** It doesn't change or delete entries, only alters how they are displayed.
- **Scope:** Filtering applies to entire rows and works only by column, not by row.
- **Combination with sorting:** Best practice is to filter first, then sort the filtered results.
- **Toggle:** Filtering can be turned on/off via the Data tab or Home → Sort & Filter → Filter.
- **Clearing:** Filters can be cleared anytime to restore all rows.
- **Functions and searches:** When applied, Excel functions and searches operate only on visible (filtered) data. Clearing filters re-applies them to the full dataset.
- **Cut/Copy caution:** Copying or pasting filtered data may behave differently because hidden rows are excluded.

Unfiltered data

	A	B	C	D	E
1	Last Name	First Name	Hire Date	Department	Ext.
2	Burke	Steven	10/30/2011	IT	4005
3	Howell	Stanley	8/12/1994	Engineering	4168
4	Mcguire	Pamela	3/25/2003	Development	4302
5	Quinn	Sophie	2/4/2003	Facilities	4904
6	Hawkins	Alvin	8/23/1994	Accounting	4299
7	Redd	Randal	7/12/1998	Human Resources	4127
8	Dandridge	Ray	8/12/2007	Accounting	4224
9	Gearheart	Darrell	3/25/2015	Finance	4165
10	Pellham	Marlon	6/20/2009	Management	4529
11	Czapla	Cornell	1/29/2004	Development	4464
12	Rundle	Ruben	6/11/2011	Customer Service	4503
13	Maines	Mac	3/16/2003	Engineering	4987
14	Burke	Theo	5/3/2001	Accounting	4939
15	Carnegie	Filiberto	5/17/1994	Training	4430

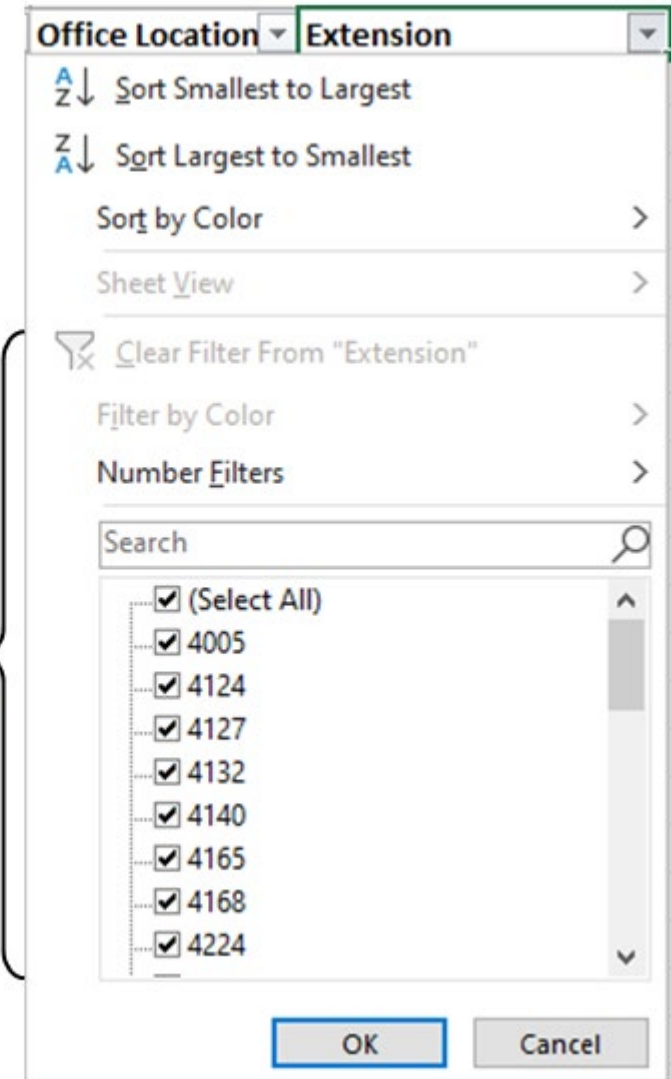
Filtered data with suppressed rows

	A	B	C	D	E
1	Last Name	First Name	Hire Date	Department	Ext.
3	Howell	Stanley	8/12/1994	Engineering	4168
13	Maines	Mac	3/16/2003	Engineering	4987
17	Howell	Jackeline	11/5/1997	Engineering	4550
27	Carreiro	Harlan	12/27/2015	Engineering	4325
31	Mcguire	Conrad	2/21/2015	Engineering	4307

AutoFilters

- **Purpose:** AutoFilters allow quick filtering of data ranges or tables based on cell values or formatting.
- **Interface:** Options appear in header row drop-down menus once filtering is enabled.
- **Check boxes:** You can select or deselect values to show or hide them in the dataset.
- **Search box:** Dynamic search narrows down filter options as you type, making it easy to locate specific entries.
- **Flexibility:** Multiple entries can be checked or unchecked, and filters can be applied across multiple columns.

AutoFilter options



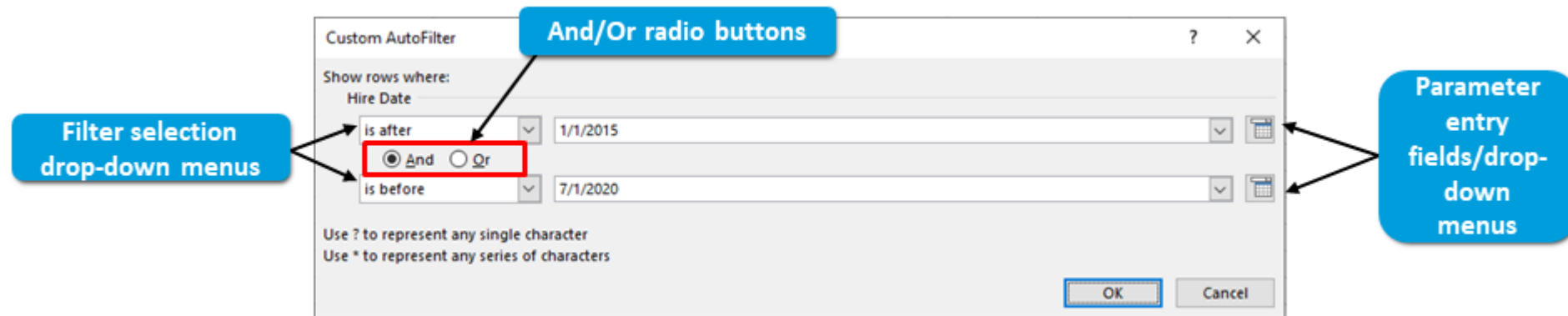
Custom AutoFilters

- **Purpose:** Custom AutoFilters allow you to filter datasets based on specific criteria beyond the default check boxes.
- **Types:** Options depend on the data type in the column:
 - **Text Filters** → filter by conditions like “begins with,” “contains,” or “equals.”
 - **Number Filters** → filter by ranges, top/bottom values, or specific comparisons.
 - **Date Filters** → filter by before/after dates, specific months, or relative time periods.
- **Interface:** Accessed from the header row drop-down menu when filtering is enabled.
- **Secondary menu:** Selecting a filter type opens additional options. Some apply instantly (e.g., top 10%), while others open the **Custom AutoFilter dialog box** for configuration.
- In short, Custom AutoFilters give you precise control over how data is displayed, letting you tailor filters to match text patterns, numeric ranges, or date conditions.

The Custom AutoFilter Dialog Box

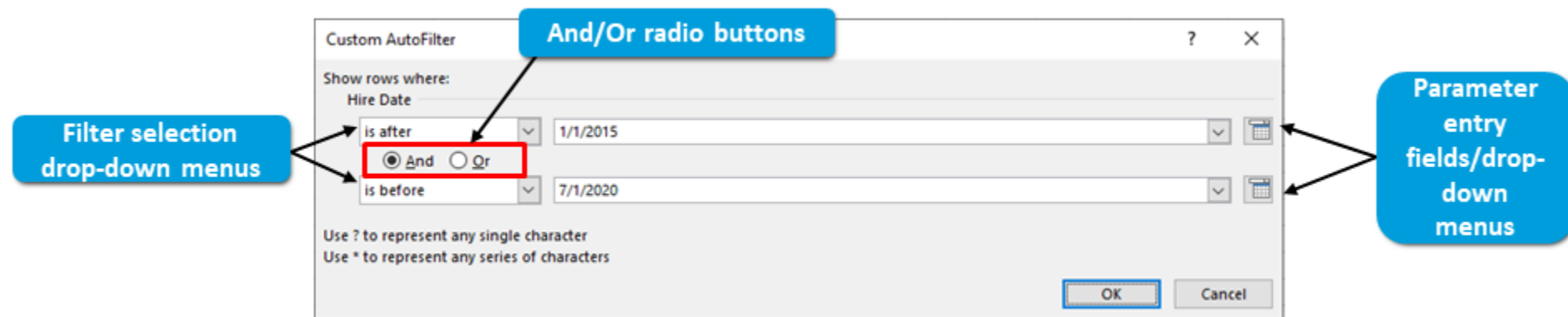
Use the **Custom AutoFilter** dialog box to configure the parameters for some of Excel's custom AutoFilters. The options available in the dialog box vary depending on the type of data in the column. You can set one or two parameters. For example, if you'd like to filter for a certain range of numerical values, you would enter the top and bottom values of the desired range.

- You can also select whether Excel should filter data based on entries that meet both defined criteria or based on meeting only one of the two criteria. If you don't enter a value in the lower fields, Excel ignores them.



The Custom AutoFilter Dialog Box

Custom AutoFilter Dialog Box Element	Allows You To
Filter selection drop-down menus	Select the specific custom AutoFilters you wish to apply to your dataset. Typically, Excel automatically populates the top menu with the filter you selected to open the Custom AutoFilter dialog box.
And/Or radio buttons	Choose between requiring both filter parameters or applying the filter to entries matching either one or the other. Choosing And will narrow the results, and choosing Or will expand the results.
Parameter entry text fields/drop-down menus	Define the specific criteria for the search. You can manually type the entries or select them from the drop-down menu, which is populated with the column's data entries.



Advanced Filtering

Purpose: Advanced filters allow you to apply complex criteria that go beyond the default AutoFilter options.

Criteria entry: You define filter conditions directly on the worksheet, using operators similar to Excel's comparison operators.

Access: Available via Data → Advanced.

Flexibility: You can filter the dataset in place or copy the filtered results to another location, giving both filtered and unfiltered views simultaneously.

Use case: Ideal when you need multi-condition or formula-based filtering that AutoFilters cannot handle.

Filter operators

	A	B	C	D	E	F	G	H
1	ID	First Name	Last Name	State	Phone	Office/Field	Title	Level
2				FL				>=2
3								
4	ID	First Name	Last Name	State	Phone	Office/Field	Title	Level
27	23	Gerald	Adams	FL	(555) 081-5931	Field	Mechanical Engineer	3
41	37	Donna	Brooks	FL	(555) 180-1334	Field	Mechanical Engineer	3
72	68	Harold	Thomas	FL	(555) 364-1198	Field	Structural Engineer	2
75	71	John	Chapman	FL	(555) 881-0862	Office	Structural Engineer	3
80	76	Donald	Bailey	FL	(555) 990-5938	Field	Mechanical Engineer	3
86	82	Patricia	Cooper	FL	(555) 779-1628	Field	Structural Engineer	3
94	90	Robin	Cole	FL	(555) 248-1009	Field	Structural Engineer	3
115	111	Dennis	Campbell	FL	(555) 651-9742	Office	Mechanical Engineer	2
118	114	Roger	Cooper	FL	(555) 033-8458	Office	Mechanical Engineer	3
129	125	Brian	Cook	FL	(555) 393-6631	Field	Mechanical Engineer	2
136	132	Bruce	Spencer	FL	(555) 513-4909	Field	Structural Engineer	2

Criteria range

Filtered dataset

The Criteria Range

Location: Best practice is to place the criteria range directly above the dataset.

Headings: Must use the same column headings as the dataset.

AND logic: Criteria entered in the same row are combined with the AND operator (all conditions must be met).

OR logic: Criteria entered in different rows are combined with the OR operator (any condition can be met).

Multiple operators: You can use more than one filter operator in the same column; not all columns need criteria.

Blank row: At least one blank row must separate the criteria range from the dataset.

	A	B	C	D	E	F	G	H
1	ID	First Name	Last Name	State	Phone	Office/Field	Title	Level
2				FL				>=2
3				TN				1
4								
5	ID	First Name	Last Name	State	Phone	Office/Field	Title	Level

Filter Operators

Filter Operator	What It Does
=	Filters data based on an exact content match. As Excel interprets the equal sign as the beginning of a formula or function, you must enclose the = operator in a set of double quotation marks (" "). So, if you want to filter for all entries that include the text "NY", you must enter the filter criteria as " =NY ". To filter for an exact numerical match, you can simply enter the numerical value.
<	Filters for numerical or date and time values that are less than the defined criteria.
>	Filters for numerical or date and time values that are greater than the defined criteria.
<=	Filters for numerical or date and time values that are less than or equal to the defined criteria.
>=	Filters for numerical or date and time values that are greater than or equal to the defined criteria.
<>	Filters for numerical, textual, or date and time values that are not equal to the defined criteria.
?	Serves as a wildcard character for a single character in the same position as the question mark. So, if you want to filter a list of employee numbers that begin with "100" but can have any number as the last digit, you could type 100? as the filter criterion.
*	Serves as a wildcard character for multiple characters in the same position as the asterisk. So, if you want to filter a list of product names for entries that begin with the letter S and end with the letter L, you could enter " =S*L " as the criterion. In this case, both "sail" and "stool" would appear in the filtered dataset.

Activity 14. Filtering Data

Query Data with Database Functions

 Microsoft



Excel 2021

Database Functions

- **Purpose:** Database functions let you perform calculations on specific portions of a dataset based on defined criteria, similar to querying a database.
- **Functionality:** They combine the power of standard Excel functions with advanced filter logic, enabling focused calculations.
- **Criteria rules:** Database functions use the same operators and criteria setup as advanced filters, requiring a properly defined criteria range.
- **Structure:**
 - A dataset in Excel can be treated as a flat file database.
 - Columns = fields.
 - Rows = entries or records.
- **Use case:** Ideal for drilling down into large datasets to calculate values (like sums, averages, counts) only for records that meet specific conditions

	A	B	C	D	E	F	G
1	Company	Product Name	Quantity	Unit Price	Total Sales		
2			>=100	>5			
3							
4	Company	Product Name	Quantity	Unit Price	Total Sales		Average Sales
5	Affiliated Grocers	Beer	100	14.00	\$ 1,400.00		\$5,479.29
6	Affiliated Grocers	Dried Plums	30	3.50	\$ 105.00		
7	Associated Markets	Dried Pears	10	30.00	\$ 300.00		
8	Associated Markets	Dried Apples	10	53.00	\$ 530.00		
9	Associated Markets	Dried Plums	10	3.50	\$ 35.00		
10	Central Market Cooperative	Chai	15	18.00	\$ 270.00		
11	Central Market Cooperative	Coffee	20	46.00	\$ 920.00		
12	Value Grocers	Chocolate Biscuits Mix	30	9.20	\$ 276.00		
13	Associated Markets	Chocolate Biscuits Mix	20	9.20	\$ 184.00		
14	Go Shop Markets	Chocolate	10	15.00	\$ 150.00		

Database Functions

Function Name	Function Definition
DAVERAGE	Averages the values in a column in a list or database that match your criteria.
DCOUNT	Counts the cells containing numbers in the field (column) in the database that match your criteria.
DCOUNTA	Counts nonblank cells in the field (column) in the database that match your criteria.
DGET	Extracts from a database a single record that matches your criteria.
DMAX	Returns the largest number in the field (column) in the database that matches your criteria.
DMIN	Returns the smallest number in the field (column) in the database that matches your criteria.
DPRODUCT	Multiplies the values in the field (column) in the database that match your criteria.
DSTDEV	Estimates the standard deviation based on a sample from selected database entries.
DSTDEVP	Calculates the standard deviation based on the entire population of selected database entries.
DSUM	Adds the numbers in the field (column) in the database that match your criteria.
DVAR	Estimates the variance based on a sample from the selected database entries.
DVARP	Calculates variance based on the entire population of selected database entries.

Database Function Syntax

- **Naming convention:** All database functions begin with “D” (e.g., DSUM, DAVERAGE).
 - **Purpose:** They perform calculations (sum, average, count, etc.) on records that meet specific criteria, combining standard function logic with advanced filter rules.
 - **Arguments (all required):**
 - database → the full dataset range, including headers (can also be a named range).
 - field → the column to calculate on, specified by:
 - Column label in quotes (e.g., "Total Sales").
 - Cell reference containing the column label.
 - Column number in the dataset (e.g., 3 for the third column).
 - criteria → the criteria range, including headers and conditions (follows advanced filter rules).
 - **How They Work**
 - Database functions apply the criteria to filter records, then perform the calculation only on those matching entries.
 - Criteria can use AND (same row) or OR (different rows) logic, just like advanced filters.
- In short, database functions give Excel query-like power, letting you calculate values on targeted subsets of data without altering the dataset itself.

Activity 15.Using Database Functions

Outline and Subtotal Data



Excel 2021

Outlines

- **Purpose:** Outlining groups rows or columns into a hierarchy, letting you expand or collapse levels of detail.
- **Levels:** Up to eight levels of detail are supported, each nested within the previous.
- **Controls:**
 - Level buttons at the top of the Outline panel let you switch between summary and detailed views.
 - Plus/minus brackets beside grouped data subsets allow collapsing or expanding sections.
- **Use cases:**
 - Expand all levels to analyze detailed entries.
 - Collapse levels to show only subtotals or summaries (e.g., per region).
- **Access:** Commands to manually create outlines are found on the Data tab → Outline group.a

	A	B	C	D	E	F
1	Quarter	Region	Product Name	Quantity	Price	Total Sales
2	Q1	Midwest	Cameras	163	\$278	\$45,314
3	Q1	Midwest	Desktops	118	\$468	\$55,224
4	Q1	Midwest	Laptops	146	\$778	\$113,588
5	Q1	Midwest	Printers	174	\$261	\$45,414
6	Q1	Northeast	Cameras	192	\$281	\$53,952
7	Q1	Northeast	Desktops	468	\$459	\$214,812
8	Q1	Northeast	Laptops	427	\$527	\$225,029
9	Q1	Northeast	Printers	231	\$235	\$54,285
10	Q1	Southeast	Cameras	431	\$295	\$127,145
11	Q1	Southeast	Desktops	162	\$434	\$70,308
12	Q1	Southeast	Laptops	201	\$640	\$128,640
13	Q1	Southeast	Printers	325	\$241	\$78,325
14	Q1	Southwest	Cameras	166	\$285	\$47,310
15	Q1	Southwest	Desktops	460	\$439	\$201,940
16	Q1	Southwest	Laptops	206	\$525	\$108,150
17	Q1	Southwest	Printers	471	\$228	\$107,388
18	Q1	West	Cameras	333	\$292	\$97,236
19	Q1	West	Desktops	460	\$502	\$230,920
20	Q1	West	Laptops	369	\$646	\$238,374
21	Q1	West	Printers	107	\$248	\$26,536
22	Q1 Total					\$2,269,890
43	Q2 Total					\$5,132,670
64	Q3 Total					\$2,763,799
85	Q4 Total					\$2,244,216
86	Grand Total					\$12,410,575

The SUBTOTAL Function

- **Purpose:** Performs calculations (SUM, AVERAGE, MAX, MIN, etc.) on subsets of data, often used with outlines or filtered lists.
- **Syntax:** =SUBTOTALArgumentsAL(function_num, ref1, [ref2], ... [ref254])
- **Arguments:**
 - function_num → numeric code (1–11 or 101–111) that specifies which calculation to perform.
 - 1–11 → includes hidden values.
 - 101–111 → ignores hidden values.
 - ref1, ref2... → ranges of data to calculate on.
- **Functionality:** SUBTOTAL is a single function that calls one of several built-in functions depending on the function_num argument.
- **Usage:** Commonly applied through ribbon commands and UI features rather than manual entry, but understanding syntax helps in customizing calculations.

The SUBTOTAL Function

The following table outlines the functions each value in the **function_num** argument calls.

function_num Argument (Includes Hidden Values)	function_num Argument (Ignores Hidden Values)	Called Function
1	101	AVERAGE
2	102	COUNT
3	103	COUNTA
4	104	MAX
5	105	MIN
6	106	PRODUCT
7	107	STDEV
8	108	STDEVP
9	109	SUM
10	110	VAR
11	111	VARP

The Subtotals Feature

- **Purpose:** Automates the use of the SUBTOTAL function to calculate grouped totals within a dataset.
- **Functionality:** Adds subtotal rows when data is sorted by a specific column (e.g., region, quarter, financial period).
- **Efficiency:** Saves time compared to manually inserting SUM or other functions, especially in large datasets.
- **Limitations:** Works only on ranges, not on Excel tables.
- **Requirements for best results:**
 - Dataset must include **column headers**.
 - Data must be **sorted** by the criteria column before applying Subtotals.
- **Operation:** The feature detects changes in one column and calculates subtotals for corresponding values in another column.

Column sorted by Quarter

Automatically entered SUBTOTAL function

	A	B	C	D	E	F
1	Quarter	Region	Product Name	Quantity	Price	Total Sales
2	Q1	Midwest	Cameras	163	\$278	\$45,314
3	Q1	Midwest	Desktops	118	\$468	\$55,224
4	Q1	Midwest	Laptops	146	\$778	\$113,588
5	Q1	Midwest	Printers	174	\$261	\$45,414
6	Q1	Northeast	Cameras	192	\$281	\$53,952
7	Q1	Northeast	Desktops	468	\$459	\$214,812
8	Q1	Northeast	Laptops	427	\$527	\$225,029
9	Q1	Northeast	Printers	231	\$235	\$54,285
10	Q1	Southeast	Cameras	431	\$295	\$127,145
11	Q1	Southeast	Desktops	162	\$434	\$70,308
12	Q1	Southeast	Laptops	201	\$640	\$128,640
13	Q1	Southeast	Printers	325	\$241	\$78,325
14	Q1	Southwest	Cameras	166	\$285	\$47,310
15	Q1	Southwest	Desktops	460	\$439	\$201,940
16	Q1	Southwest	Laptops	206	\$525	\$108,150
17	Q1	Southwest	Printers	471	\$228	\$107,388
18	Q1	West	Cameras	333	\$292	\$97,236
19	Q1	West	Desktops	460	\$502	\$230,920
20	Q1	West	Laptops	369	\$646	\$238,374
21	Q1	West	Printers	107	\$248	\$26,536
22	Q1 Total					\$2,269,890
43	Q2 Total					\$5,132,670
64	Q3 Total					\$2,763,799
85	Q4 Total					\$2,244,216
86	Grand Total					\$12,410,575

Quarterly subtotals

The Subtotal Dialog Box

You can use the **Subtotal** dialog box to perform SUBTOTAL function calculations on data ranges without having to manually enter the desired SUBTOTAL function. From here, you specify the criteria by which Excel will organize subsets of data, select the desired function, and select the column on which the calculation will be performed. The **Subtotal** dialog box also includes several options for configuring the display of subtotals. You can access the **Subtotal** dialog box by selecting **Data → Subtotal**.

Subtotal ? X

At each change in:
Quarter

Use function:
Sum

Add subtotal to:

- Quarter
- Region
- Product Name
- Quantity
- Price
- Total Sales

Replace current subtotals
 Page break between groups
 Summary below data

Remove All OK Cancel

The Subtotal Dialog Box

Subtotal Dialog Box Element	Enables You To
At each change in drop-down menu	Select the criteria by which to organize subsets of data. You do this by selecting the column that contains the desired entries. For example, you can tell Excel to perform subtotal calculations on data entries based on a particular region, department, or product. Remember to first sort your data on the column you will select in the At each change in drop-down menu , and then apply the subtotal calculation.
Use function drop-down menu	Select the desired SUBTOTAL function.
Add subtotal to menu	Select the column on which you wish to perform the calculation. Like the At each change in drop-down menu , this drop-down menu is populated with the column headers in the selected dataset.
Replace current subtotals check box	Decide between replacing existing subtotals with new subtotal calculations and including multiple subtotals in your dataset.
Page break between groups check box	Place a page break after each subtotal so you can print each subset of data separately.
Summary below data check box	Include a summary row at the bottom of the dataset. This will include the grand total from all of the individual subtotals.
Remove All button	Clear all subtotals and subsets from the original dataset.

Activity 16.Using Subtotals to Summarize Data