

Office 2016– Excel Basics 23

Video/Class Project #35

Excel Basics 23: More Data Analysis Features: Sort, Filter, Flash Fill

Goal in video # 23: Learn about how to use the Data Analysis features: Sort, Filter and Flash Fill.

Topics Covered in Video:

- 1) Data Analysis:
 - i. Converting Raw Data into Useful Information

- 2) So far in the class we have studied these Data Analysis tools in Excel:
 - i. PivotTables
 - ii. Excel Table feature
 - iii. Relationships and the Data Model
 - iv. Formulas like SUMIFS

- 3) We will learn about these Excel Data Analysis features in this video:
 - i. Sort
 - ii. Filter
 - iii. Flash Fill

- 4) Proper Data Set:
 - i. Field Names / Column Headers in first row
 - Always add a formatting to the Field Names, like Bold, Fill Color, or Font Color. This will insure that the Data Analysis features like Sort, Table feature and other features know that they are field names and not a record in the data set.
 - ii. Records in each row (sales transactions, employee records and so on)
 - iii. Empty cells all around data set (or Excel row or column headers)

5) Sort

- i. What does Sorting do?
 - Organizes a Proper Data Set (Table) or a single column in alphabetical or numeric or color order.
 - If you sort a single Field/Column in a Proper Data Set, the records are sorted. Said a different way: If you sort just one Field/Column in a Proper Data Set, the entire Proper Data Set is sorted so that records remain intact.
- ii. How to Sort:
 - Click in one cell in the column that you want to sort and use the Sorting feature.
 - The Sorting feature can be found:
 - i. Sort buttons:
 1. Editing group in Home Ribbon
 2. Sort and Filter group in Data Ribbon
 - ii. Sort dialog box:
 1. Gives you more options like “Sort by Color”
 - iii. Right-click menu
 - iv. The Excel Table feature has sort buttons in the drop-down arrows at the top of each Field
- iii. Sorting options:
 - A to Z (Small to Big, Ascending).
 - Z to A (Big to Small, Descending).
 - Sort by Color.
- iv. If you have mixed data, an A to Z sort would sort like:
 - Numbers
 - Text/words (including Null Text Strings)
 - FALSE
 - TRUE
 - Errors (in the order they occur)
 - Empty Cells (Empty Cells are always sorted to the bottom whether or not you do A to Z or Z to A).
- v. If you want to sort upon more than 1 column:
 - Buttons: Major Sort is last
 - Sort dialog box, Major Sort on top.
- vi. Sorting can be done on a list that does not have a field name. Be sure to highlight the whole list and make sure to uncheck the “My data set has headers” checkbox.

6) Filter

- i. What does Filtering do?
 - For a Proper Data Set, the Filter feature allows you to specify conditions/criteria to display only the records that match the given conditions/criteria, while hiding the records that do not match.
 - Once you filter a proper data set to show only the records that you want, you can copy the whole table and paste it in a new sheet or in a new workbook.
- ii. Turn on the Filter feature to show Filter Drop-Down Arrows to each Field in a Proper Data Set:
 - Filter Button:
 - i. Editing group in Home Ribbon Tab
 - ii. Sort and Filter group in Data Ribbon Tab
 - Keyboard for Filter:
 - i. **Ctrl + Shift + L**
 - If you Convert the Proper Data Set to an Excel table, Filter drop-down arrows appear.
- iii. Filter dropdown arrows allow you to filter based on:
 - Check boxes for each item in the **unique list of items** from the field.
 - Special Data Type Filters:
 - i. Date Filter
 - ii. Number Filter
 - iii. Text Filter
 - Search textbox
 - Different Logical Constructs For Applying Criteria:
 - i. **OR Logical Test (using OR Criteria):**
 1. You can have two or more criteria for an OR Logical Test.
 2. If we select the check the boxes for “Alma” and “Rina” in the Sales Rep Field:
 - i. For each record we are asking two questions:
 1. “Is the Sales Rep **Alma**?”
 - OR**
 2. “Is the Sales Rep **Rina**?”
 - ii. For each Record we can get these possible answers:
 1. TRUE, FALSE
 2. FALSE, TRUE
 3. FALSE, FALSE.
 3. For an OR Logical Test you must get "**At Least 1 TRUE**", in order for the record to be included in the filtered data set.
 4. For Filtering, when we are asking the OR Criteria Question, we are often asking the question of only ONE Column.
 - ii. **AND Logical Test (using AND Criteria):**
 1. You can have two or more criteria for an AND Logical Test.
 2. If we select the check the boxes for “Alma” on the Sales Rep Field and “Chevy” on the Auto Field:
 - i. For each record we are asking two questions:
 1. “Is the Sales Rep **Alma**?”
 - AND**
 2. “Is the Auto sold **Chevy**?”
 - ii. For each Record we can get these possible answers:
 1. TRUE, FALSE
 2. FALSE, TRUE
 3. FALSE, FALSE
 4. TRUE, TRUE.
 3. For an AND Logical Test you must get "**All Are TRUE**", in order for the record to be included in the filtered data set.

- iii. BETWEEN Logical Test is a form of AND Logical Test that has an upper and lower limit:
 1. Only items that are between the upper and lower limit are included.
 2. Example: Date Filters that only want records that are between January 1, 2016 and Jan 5, 2016.
- Turn Off Filter
 - i. To Remove a Filter Single Column Filter:
 1. Click on Filter dropdown at the top of the column and select "Clear Filter"
 - ii. To Remove all Filters:
 1. Use "Clear" button in Sort & Filter group in Data Ribbon Tab
 2. Keyboard: Ctrl + Shift + L, L

7) Flash Fill

- i. What does Flash Fill do?
 - Flash Fill is a fast way to "clean" a column of data, like combining first and last name or extracting the State Abbreviation from a description.
- ii. What does "Cleaning Data" mean?
 - You convert non-useful data into useful data.
 - Examples:
 - i. Combine First and Last Name
 - ii. Extract State Abbreviation from a description
- iii. How does Flash Fill work?
 - Type enough examples to illustrate the pattern for the "cleaned data" to the right of your column and when you see the "Ghost List", hit Enter.
 - i. You give Excel one or more examples to the right of your data, and it tries to figure out what you want.
 - ii. If Excel can see your "Pattern", it will perform the action for the whole column
 1. Actions include:
 - i. Combine, Extract, Insert, Reverse
- iv. Keyboard to run Flash Fill: Ctrl + E
- v. Flash Fill is in the Data Tools group in the Data Ribbon Tab
- vi. Microsoft calls it "Program by example" because you give it an example and behind the scenes it creates a program that does what you want.
- vii. When to use Formulas?
 - When you want the solution to update when source data changes.
- viii. When to use Flash Fill?
 - When it is a one-time data cleaning task, when you know the pattern of your data, and you can provide enough examples for Flash Fill to understand what you want.

8) New Keyboard Shortcut:

- i. Flash Fill → Ctrl + E
- ii. Insert New Sheet → Ctrl + F11
- iii. Esc → Turns off "Dancing Ants"
- iv. Remove All Filters → Keyboard: Ctrl + Shift + L, L