

4

More On Excel 2016

Learning Outcomes

- Advantages of Chart
- Components of Chart
- Types of Chart
- Creating a Chart
- Sorting Data
- Filtering Data

In the previous chapter, you learnt how to edit a worksheet in Excel 2016. In your worksheet, there are data of students' marks, customer data, sales data, employees' payroll data, or any other data. These data may be useful for performing complex computations or analyses. But if you want to generate a report or represent similar data in pictorial form, you can use the charts in Excel or graph in Excel.

"Charts are graphical or pictorial representation of data."

Advantages Of Chart

Charts offer the following advantages:

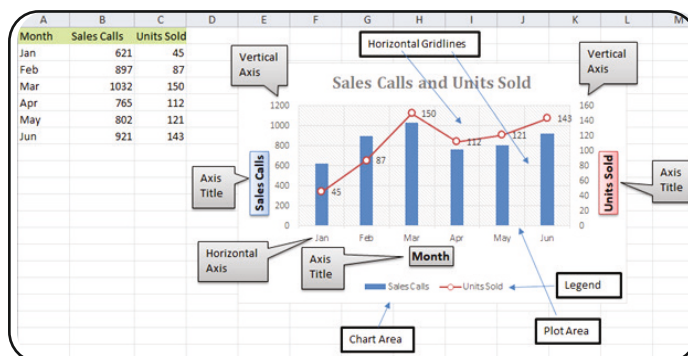
- Provides visualization
- Proper understanding
- The flow of data explanation
- Makes your data more attractive and presentable
- Increases User's engagement
- Help see the relationship between data

Components Of Chart

Chart components give more descriptions to your charts, thus making your data more meaningful and visually appealing.

The following chart components are available –

1. Axes
2. Axis titles
3. Chart titles
4. Data labels
5. Data table
6. Error bars
7. Gridlines
8. Legend
9. Trendline



Components of Chart



Axes

This chart has a horizontal axis. The horizontal axis is known as the category axis. This axis holds the Month column information.

It has two vertical axes. Vertical axes are known as value axes. Each axis has a different scale. The left axis holds the Sales Calls data series, and the axis on the right side holds the Units Sold data series.

Legend

Using Legend, we identify the data series or data points in the chart. In this chart example, the legend appears on the bottom of the chart.

Data Labels

In this chart Data Labels(45, 87, 150, and so on) are showed only for **Units Sold** data series. Data Labels for Sales Calls are not showed in this chart.

Chart Title

In our chart, the **Chart title** is **Sales Calls and Units Sold** showed in the top-middle of the chart area.

Horizontal Gridlines

Horizontal Gridlines are extensions of the value axis. Horizontal grid lines make it easier for the chart reader to determine the magnitude of the data points.

Chart Area and Plot Area

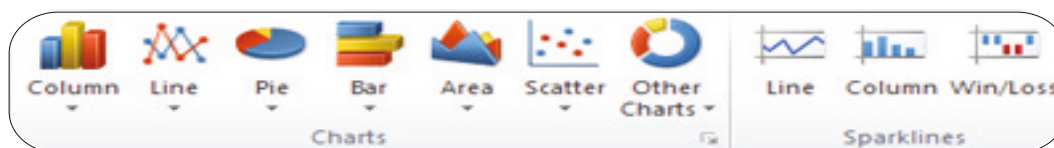
The entire background of the chart is Chart Area, only the actual chart area is called Plot area. These two are marked in the above chart. The plot area has a different color in the above image, not necessarily that all plot areas will have a different color.

Some charts may have more elements than discussed above, and some may have fewer elements. For example:

- A pie chart has slices but no axis
- A 3-D chart have walls and floor

Types Of Chart

MS-Excel 2016 offers several types of charts. These types of charts you will see when you click on the Insert tab in MS-Excel from the charts group. Observe in the following screen:



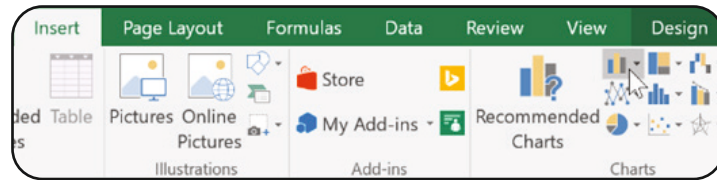
Types of Chart

This chart group provides the following chart types, as marked by the group with numbers.

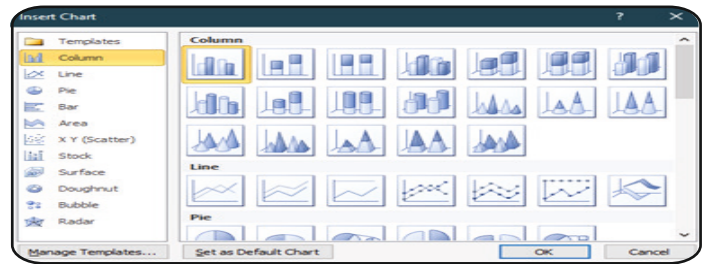
1. Column Chart
2. Line Chart
3. Pie and Doughnut Chart
4. Bar Chart
5. Area Chart
6. Scatter and Bubble Chart
7. Stock, Surface and Radar Chart
8. Combo Chart
9. Pivot Chart

Creating A Chart

Step 1. Select the cells you want to chart, including the column titles and row labels. These cells will be the source data for the chart. In our example, we'll select cells A1:F6.



Insert Chart



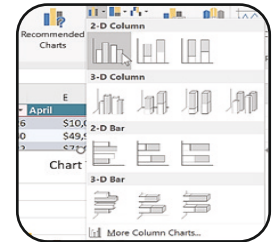
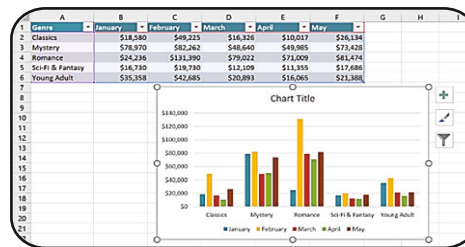
Insert Chart

Step 2. From the Insert tab, click the desired Chart command. In our example, we'll select Column.

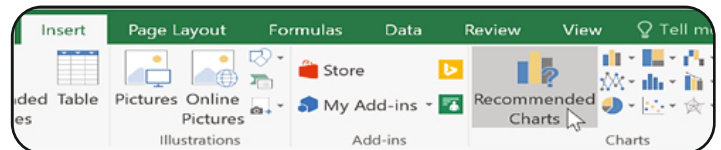
Step 3. Choose the desired chart type from the drop-down menu.

Step 4. The Selected chart will be inserted into the worksheet.

Genre	January	February	March	April	May
Classics	\$18,580	\$49,225	\$16,326	\$10,017	\$26,134
Mystery	\$78,970	\$82,262	\$48,640	\$49,985	\$73,420
Romance	\$24,236	\$131,390	\$79,022	\$71,009	\$81,474
Sci-Fi & Fantasy	\$16,730	\$19,730	\$12,109	\$11,355	\$17,686
Young Adult	\$35,358	\$42,685	\$20,893	\$16,065	\$52,388



If you're not sure which type of chart to use, the Recommended Charts command will suggest several different charts based on the source data.



Sorting Data

As you add more content to a worksheet, organizing this information becomes especially important. You can quickly reorganize a worksheet by sorting your data. For example, you could organize a list of contact information by last name. Content can be sorted alphabetically, numerically, and in many other ways.

Types of sorting

When sorting data, it's important to first decide if you want the sort to apply to the entire worksheet or just a cell range

Sort sheet: Organizes all of the data in your worksheet by one column. Related information across each row is kept together when the sort is applied. In the example below, the Contact Name column (column A) has been sorted to display the names in alphabetical order.

	A	B	C	D
	CONTACT NAME	BILLING ADDRESS	PHONE	EMAIL ADDRESS
3	Chaturvedi, Rick	2428 S Redding St #2 B	360-555-5422	info@newhaventraders.com
4	Dean, Hank	3034 Foggy Wharf Loo	308-555-1050	hdean@venturebrewing.com
5	Figgis, Mallory	3520 Sleepy Hearth Dr	425-555-5370	malloryf@archerproperties.com
6	Finn, Jake	1407 Dusty Fawn Ln So	605-555-6435	jake@adventureoutfitters.com
7	Kinkade, Chris	1028 Quiet Dale Rd Hoi	443-555-4942	chris.kinkade@placervilleins.com
8	Lawson, Miranda	5316 Colonial Pkwy Est	575-555-9255	mlawson@massairlines.com
9	Reyes, Felicia	8544 Lazy Bluff Ave Wh	316-555-3256	felicia@everlypublishing.com
10	Sebastian, Lil	9060 Easy Evening Ln V	207-555-7225	lil@knopeequestrian.com
11	Silva, Vivica	8595 Thunder Brook C	360-555-4289	vivica@rileygardensupply.com
12	Stark, Katie	971 Cinder Butterfly St	603-555-2460	katie.stark@ariarealestate.com
13	Torrance, Jill	3160 Amber Gate Rd R	605-555-4495	jtorrance@overlookinn.com
14	Yuen, Phillip	5108 Crystal Gate Blvd	913-555-5928	yuenp@corepharmaceuticals.com

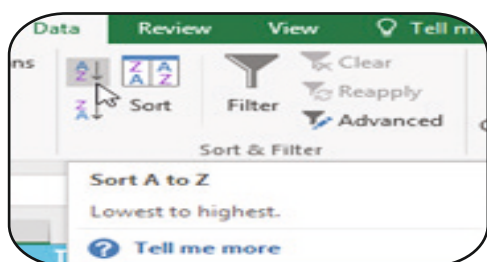
Sort Sheet

	A	B	C	D	E
1					
2	EXERCISES	SET 1	SET 2		
3		REPS	WEIGHT (lbs)	REPS	WEIGHT (lbs)
4	Bench Press	14	65	12	75
5	Bench Press (Decline)	10	60	8	70
6	Triceps Extension	15	35	20	35
7	Average	13.9	50.5	12.5	54
8					
9					
10		Running Log			
11		Date	Distance (miles)	Time (hrs:mins)	
12		25-Jun	2.8	0:45	
13		26-Jun	3	0:44	
14		27-Jun	2.75	0:42	
15		29-Jun	3.25	0:44	
16		30-Jun	3.25	0:45	
17		2-Jul	2.5	0:44	
18		3-Jul	3	0:30	
19		Total	20.55		

Sort Range

To Sort a Sheet:

In our example, we'll sort a T-shirt order form alphabetically by **Last Name** (column C).



Sort Range

Step 3. The worksheet will be **sorted** by the selected column. In our example, the worksheet is now sorted by **last name**.

Custom sorting

Sometimes you may find that the default sorting options can't sort data in the order you need.

Fortunately, Excel allows you to create a custom list to define your own sorting order.

To use custom Sorting, follow following steps:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2	Roll No.	Name	Hindi/Mathematics	Computer Sc.	English/Science	Total Marks Obtained	Marks %age								
3	1	Sunidhi Jain	78	79	89	82	88	416	83%						
4	2	Himanshu Desai	89	95	76	75	87	422	84%						
5	3	Arnav Joshi	86	88	81	78	79	412	82%						
6	4	Vivek Singh	92	96	90	94	95	467	93%						

Custom Sorting

Sort range: Sorts the data in a range of cells, which can be helpful when working with a sheet that contains several tables. Sorting a range will not affect other content on the worksheet.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
2	105	Christiana	Chen	Medium	Check Bounced
3	105	Derek	MacDonald	Large	Cash
4	105	Esther	Yaron	Small	Pending
5	105	Melissa	White	Small	Debit Card
6	105	Nathan	Albee	Medium	Check
7	105	Sidney	Kelly	Medium	Check
8	110	Gabriel	Del Toro	Medium	Cash
9	110	Kris	Ackerman	Large	Money Order

Sort a Sheet

Step 1. Select a **cell** in the column you want to sort by. In our example, we'll select cell **C2**.

Step 2. Select the **Data** tab on the **Ribbon**, then click the **A-Z** command to sort A to Z, or the **Z-A** command to sort Z to A. In our example, we'll sort **A to Z**.

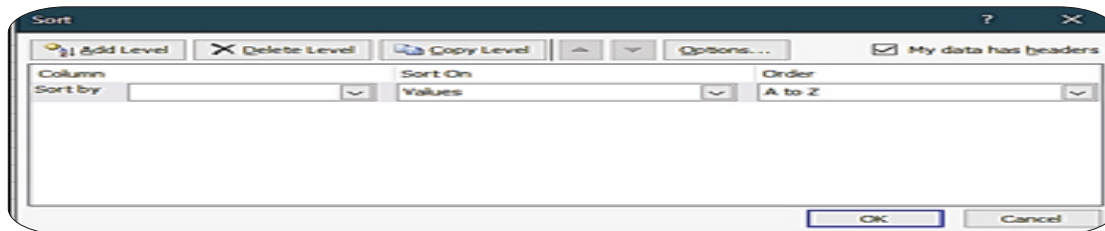
	A	B	C	D	E
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
2	110	Kris	Ackerman	Large	Money Order
3	105	Nathan	Albee	Medium	Check
4	220-B	Samantha	Bell	Medium	Check
5	110	Matt	Benson	Medium	Money Order
6	105	Christiana	Chen	Medium	Check Bounced
7	110	Gabriel	Del Toro	Medium	Cash
8	220-A	Brigid	Ellison	Small	Cash
9	220-A	Juan	Flores	X-Large	Pending

Sorted Range

Step 1. Select the range of the column to be sorted.

Step 2. Click on the **Sort & Filter** command from the **Editing** group under **Home** tab. A drop-down list appears.

Step 3. Click on the **Custom Sort** option from the drop-down list. The **Sort** dialog box opens:



Sort Dialog

Step 4. Click on the **Sort by** box and select the column header according to which you want to sort the data.

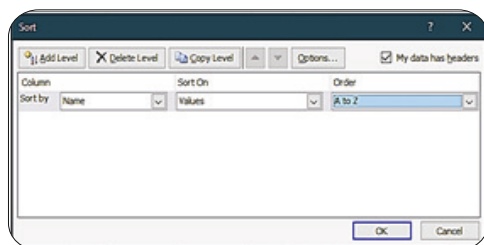
In this case, we have selected **Name** header.

Step 5. Click on the **sort on** box and select **cell values** option.

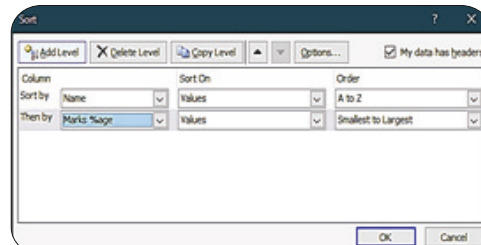
Step 6. Click on **Order** box and select **A to Z** or **Z to A** option. In this case, we have selected **A to Z** option.

Step 7. Click on the **Add Level** at the top of the **Sort** dialog box to add another column to sort. In this case, we have added **Marks %age** column.

Step 8. Click on the **Ok** button.



Sort Dialog



Sort Dialog

Filtering Data

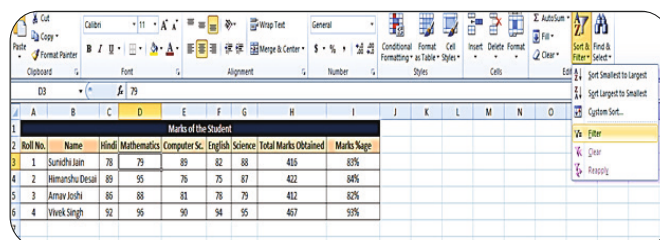
You must have studied about filtration process which is used to separate unwanted material from a mixture.

Excel allows you to filter unwanted data from a set of data. To apply filters, follow these steps:

Step 1. Select the range of columns to be filtered.

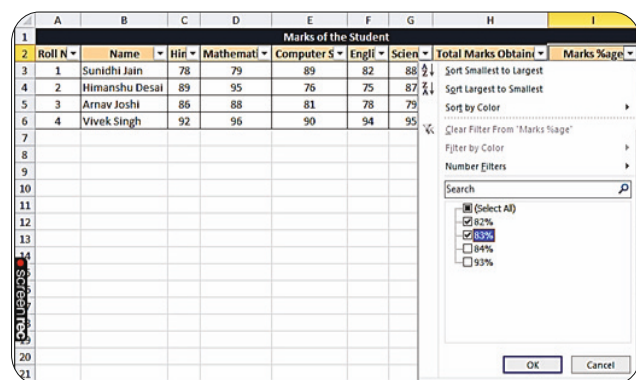
Step 2. Click on the **Sort & Filter** command from editing group under **Home** tab. A drop-down list appears.

Step 3. Click on the **Filter** option from the drop-down list.



You will notice that small arrows appear in front of all the column headers.


Filtering Data



Filtered Data

Step 4. Click on the arrow in front of the header **Marks %age**. A drop-down list appears. You will notice that all the entries in the column are present in the list with small checkboxes in the beginning. Click with some of the checkboxes to uncheck them.



 **Step 5.** Click on the **Ok** button. You will notice that the rows of unchecked data are removed from the list. You need not to worry as the data is not lost. The unchecked rows have just been hidden from the display.










A1		Marks of the Student							
	A	B	C	D	E	F	G	H	I
1	Marks of the Student								
2	Roll N	Name	Hin	Mathemati	Computer S	Engli	Scien	Total Marks Obtain	Marks %age
3	1	Sunidhi Jain	78	79	89	82	88	416	83%
5	3	Arnav Joshi	86	88	81	78	79	412	82%

Filtered Data

Quick Look



-  Charts are graphical or pictorial representation of data.
-  The entire background of the chart is Chart Area, only the actual chart area is called Plot area.
-  Sort sheet organizes all of the data in your worksheet by one column.
-  Sort range sorts the data in a range of cells, which can be helpful when working with a sheet that contains several tables.
-  A column Chart in Excel is the simplest form of a chart that can be easily created if one list of the parameter is against one set of value.
-  Line Chart is a graph that shows a series of point trends connected by the straight line in excel.
-  Pie Chart in Excel is used for showing the completion or main contribution of different segments out of 100%.



Section - I

► Objective Type Questions

A. Fill in the blanks

Category axis data explanation legend value axes organizing information

1. Chart offer the flow of _____.



2. Horizontal axis is known as _____.
3. Vertical axes are known as _____.
4. Sorting is the way of _____.
5. Using _____, we can identify the data series or data points in the chart.

B. Write 'T' for True and 'F' for False ones:

1. Horizontal grid lines make it easier for the chart reader to identify the data series or data points in the chart. ☐
2. Custom sorting is a way to create custom list to define our own sorting order. ☐
3. Ctrl + Space is the shortcut key to select entire column. ☐
4. Line Chart is a graph that shows a series of point trends connected by the straight line in excel. ☐
5. Sort sheet removes all of the unwanted data in your worksheet. ☐

C. Tick the correct options.

1. Which sheet organizes all of the data in your worksheet by one column?
a) Worksheet ☐ b) Spreadsheet ☐
c) Sort sheet ☐ d) Excel sheet ☐
2. Chart in Excel is the simplest form of a chart that can be easily created if one list of the parameter is against one set of value?
a) Pie chart ☐ b) Line chart ☐
c) Column chart ☐ d) Bar chart ☐
3. Short key to select entire column?
a) Ctrl + Space ☐ b) Ctrl + Shift ☐
c) Ctrl +Alt ☐ d) Shift + F8 ☐





4. Short key to increase font size in one step :

a) Alt +H + HG



b) Alt +H +FG



c) Alt +H + GF



d) Ctrl + K



5. Separate unwanted data from a set of data is called :

a) Sorting Data



b) Filtering Data



c) Custom Sorting



d) Creating a chart



D. Application Based Questions:

A task from class teacher has been assigned to Ayush to prepare students who have scored 80% and are eligible to fill the form of NTSE 2022.

Ayush has been also suggested to show their performance in chart.

Section - II

► Descriptive Type Questions:

E. Answer the following questions:

1. What are the components of a chart? Explain each of them in short.

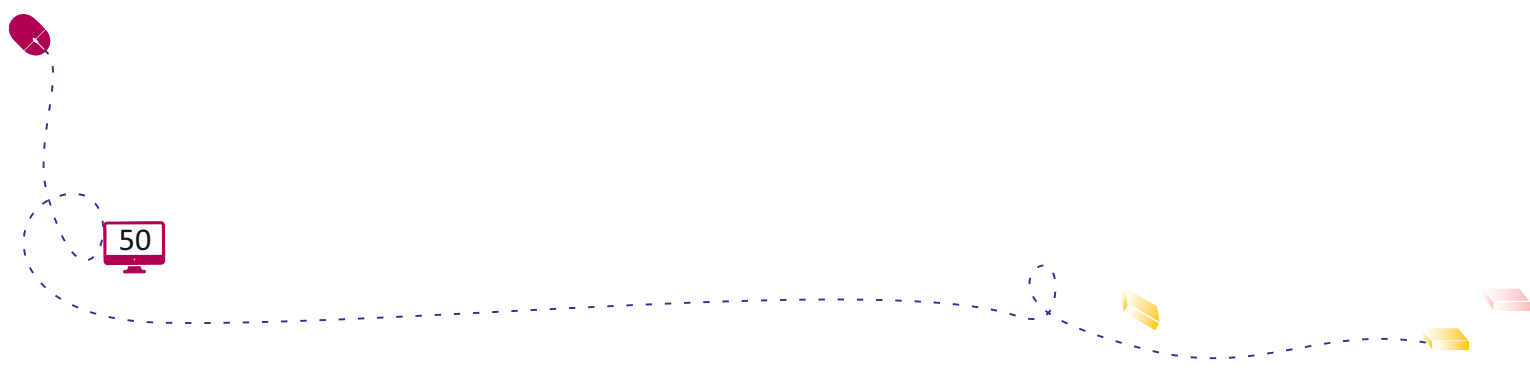
2. What are the advantages of chart?



3. Write the steps to create a chart in MS Excel 2016.

4. What is sorting of data? Explain types of data sorting.

5. How to filter data in MS Excel 2016? Explain.



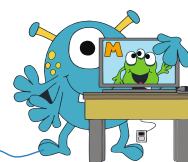


Activity

TIME

LAB ACTIVITY

Practice Makes Perfect



- Create an Excel file to maintain daily attendance record of students of your class and using sorting technique make a list of students who are absent twice in a month.
- Represent the below mentioned student marks records in column chart :-
- Mention the following in above mentioned student details:-
 - Sort the list to find out the student scored more than 85% marks in total.
 - Create a column chart to represent the class performance in one view.

S. No.	Student ID	Student Name	Class	Section	English	Hindi	Math	Science	Social Studies	Sanskrit	Computer Science
1	1011	Aakash	7	A	71	64	78	81	67	88	80
2	1012	Vivek	7	A	88	67	71	54	51	78	77
3	1013	Sanuj	7	A	71	84	76	59	68	76	73
4	1014	Aanchal	7	A	91	89	86	92	94	93	92
5	1015	Vishwajeet	7	A	99	97	100	88	83	93	95
6	1016	Shivam	7	A	64	78	83	98	83	72	67
7	1017	Atharv	7	A	87	75	89	83	84	90	91
8	1018	Gaurav	7	A	77	87	62	59	88	81	84
9	1019	Bhanu	7	A	89	82	81	76	70	61	88
10	1020	Vidyut	7	A	91	86	99	91	78	80	95

Activity Time

GROUP DISCUSSION

For Better Clarity



Divide the class into groups and discuss:

- Advantages of Chart
- Filtering Data
- Sorting Data
- Components of Chart
- Creating a Chart
- Types of Chart

ONLINE LINKS

For Searching More



- <https://edu.gcfglobal.org/>
- <https://www.montclair.edu/>