

Resource Metadata

Level	Undergraduate
Duration	6 practicals (approx. 1.5–2 hours each)
Software Required	Microsoft Excel

Learning Outcome

Through these practical exercises, learners will gain the ability to create and choose appropriate chart types in Excel for various datasets. They will also learn how to customize chart elements and styles for improved clarity and visual appeal, manipulate chart data, and effectively reposition charts. Finally, learners will be able to apply best practices for designing clear and impactful graphical representations.

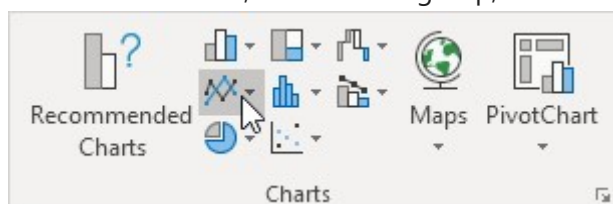
Practical 16 - Create a chart

To create a line chart, execute the following steps.

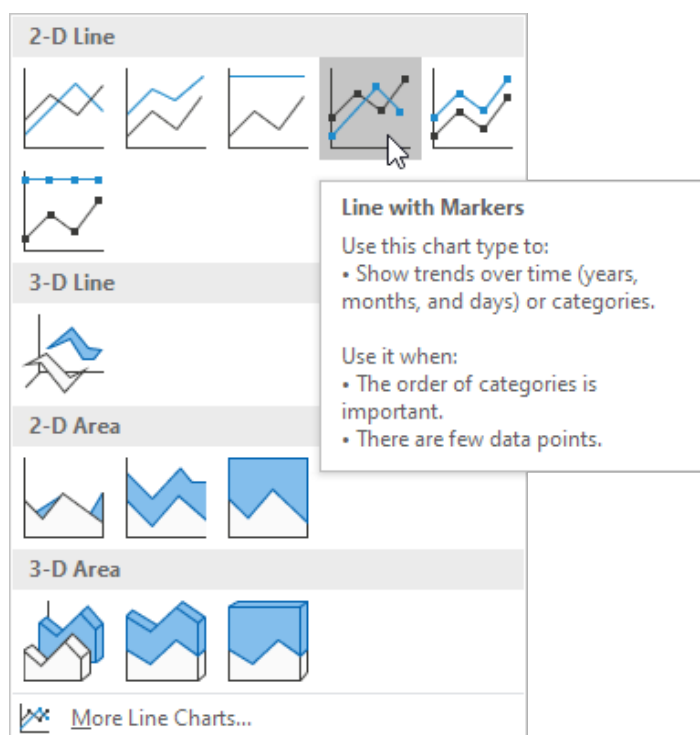
1. Select the range A1:D7.

	A	B	C	D	E
1	Month	Bears	Dolphins	Whales	
2	Jan	8	150	80	
3	Feb	54	77	54	
4	Mar	93	32	100	
5	Apr	116	11	76	
6	May	137	6	93	
7	Jun	184	1	72	
8					

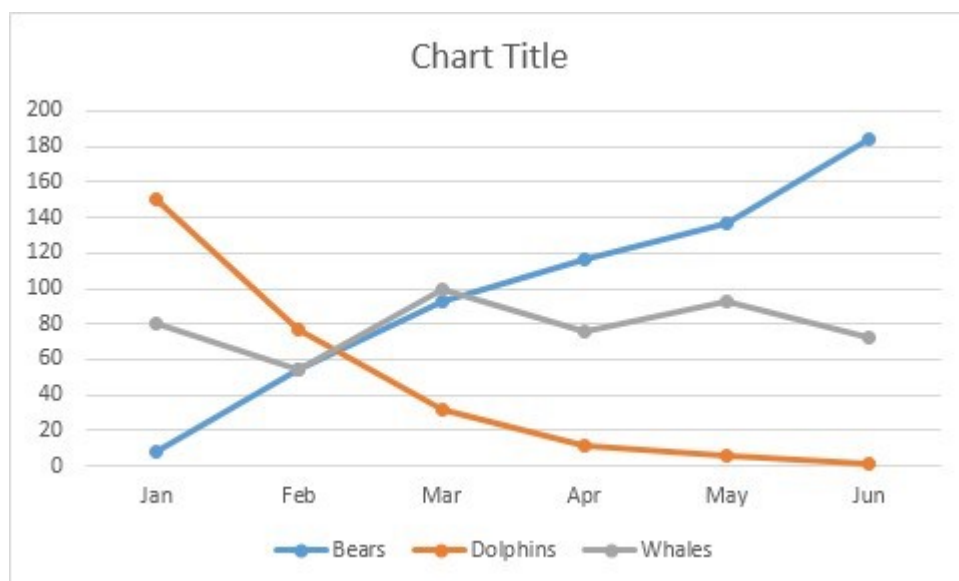
2. On the Insert tab, in the Charts group, click the Line symbol.



3. Click Line with Markers.



Result:

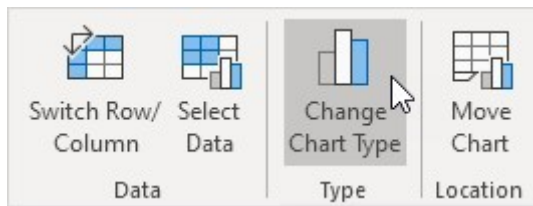


Note: enter a title by clicking on Chart Title. For example, Wildlife Population.

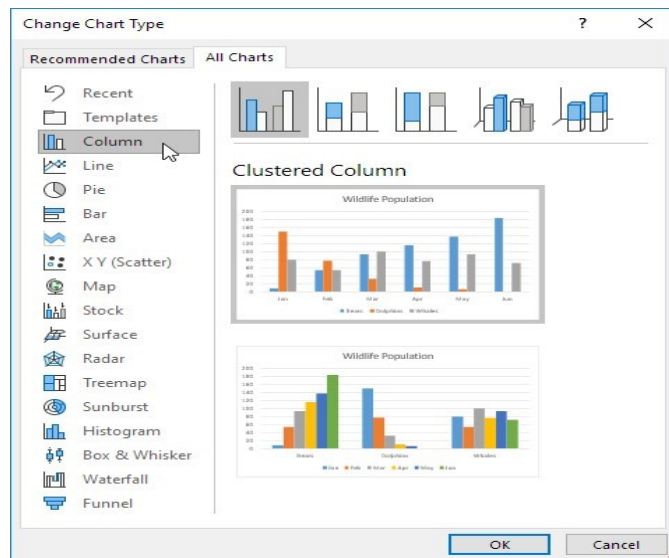
Change Chart Type

You can easily change to a different type of chart at any time.

1. Select the chart.
2. On the Design tab, in the Type group, click Change Chart Type.

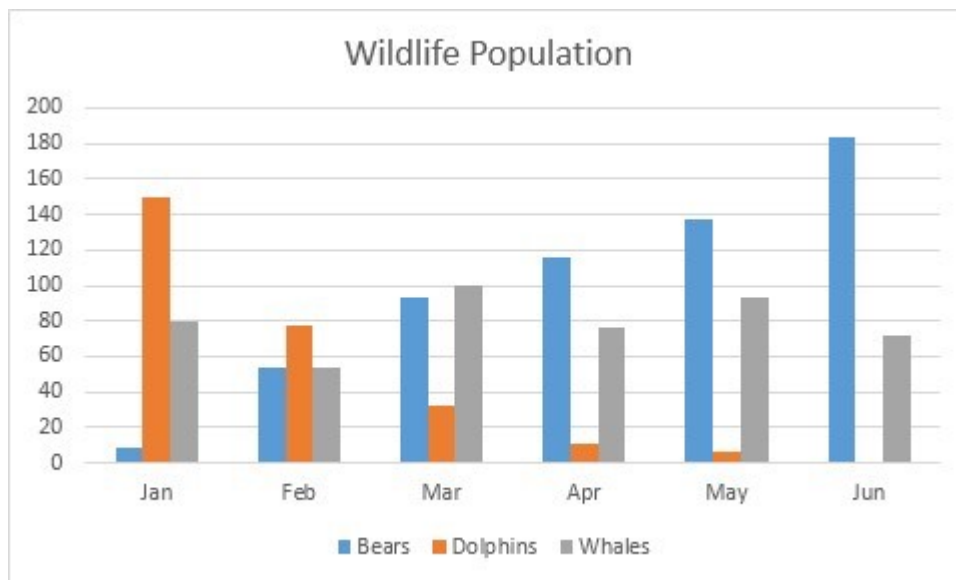


3. On the left side, click Column.



4. Click OK.

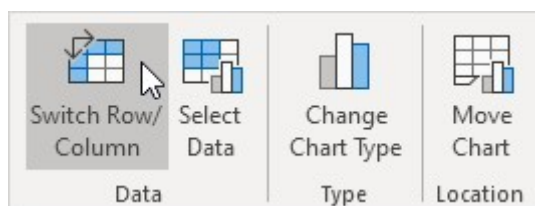
Result:



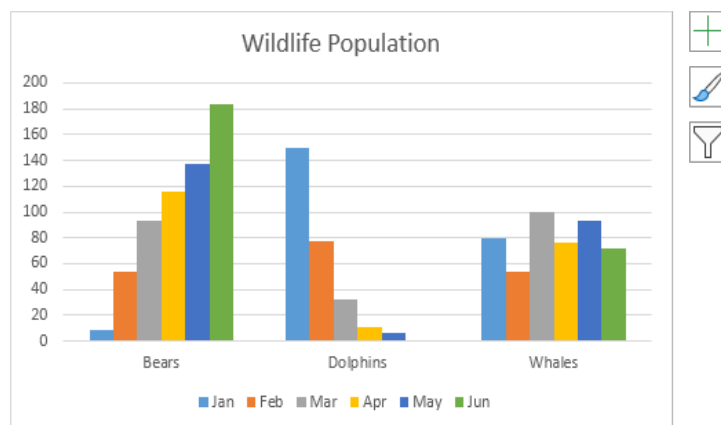
Switch Row/Column

If you want to display the animals (instead of the months) on the horizontal axis, execute the following steps.

1. Select the chart.
2. On the Design tab, in the Data group, click Switch Row/Column.



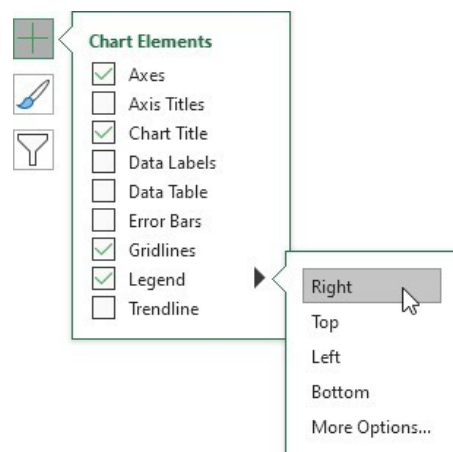
Result:



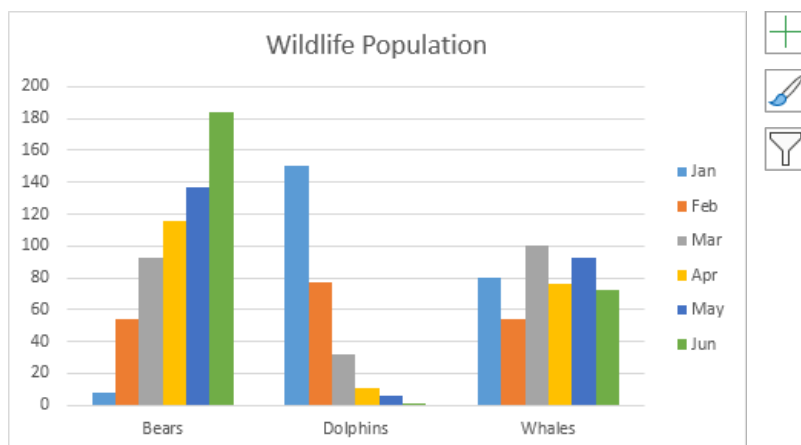
Legend Position

To move the legend to the right side of the chart, execute the following steps.

1. Select the chart.
2. Click the + button on the right side of the chart, click the arrow next to Legend and click Right.



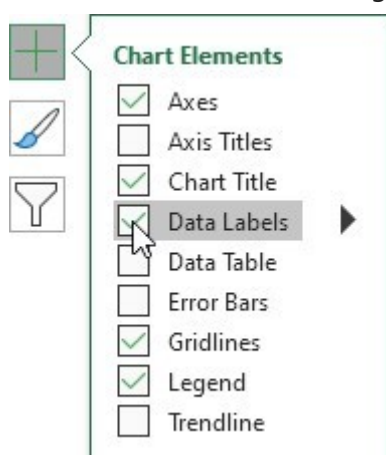
Result:



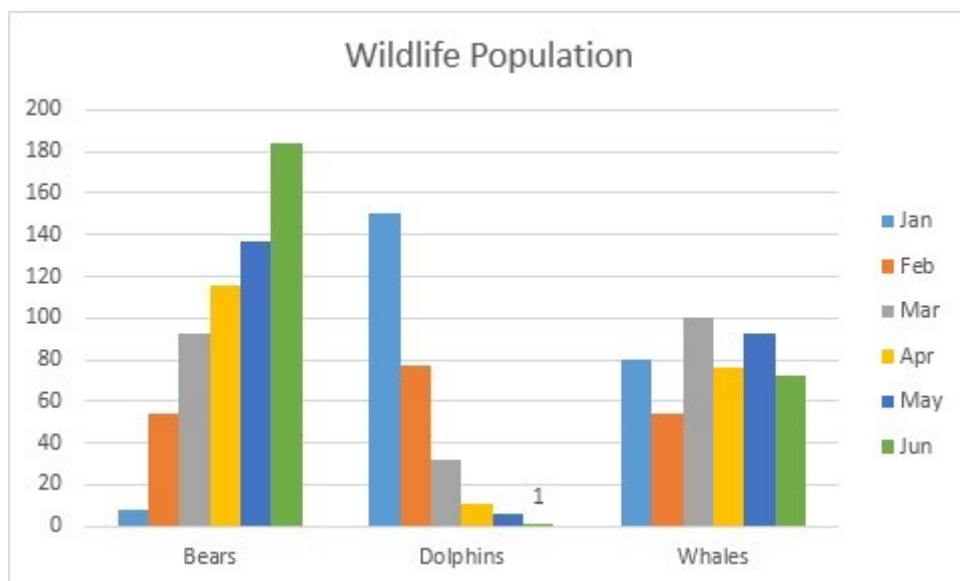
Data Labels

You can use data labels to focus your readers' attention on a single data series or data point.

1. Select the chart.
2. Click a green bar to select the Jun data series.
3. Hold down CTRL and use your arrow keys to select the population of Dolphins in June (tiny green bar).
4. Click the + button on the right side of the chart and click the check box next to Data Labels.



Result:



Practical 17 - Sparklines

Sparklines in Excel are graphs that fit in one cell. Sparklines are great for displaying trends.

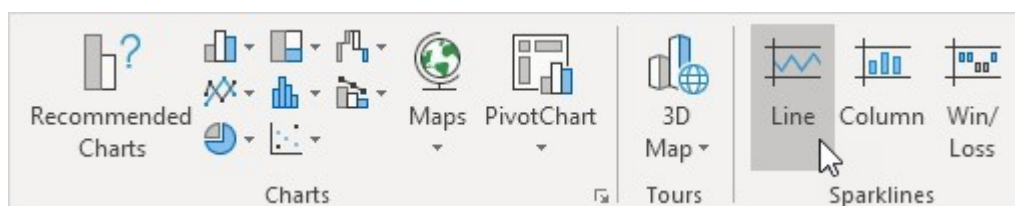
Insert Sparklines

To insert sparklines, execute the following steps.

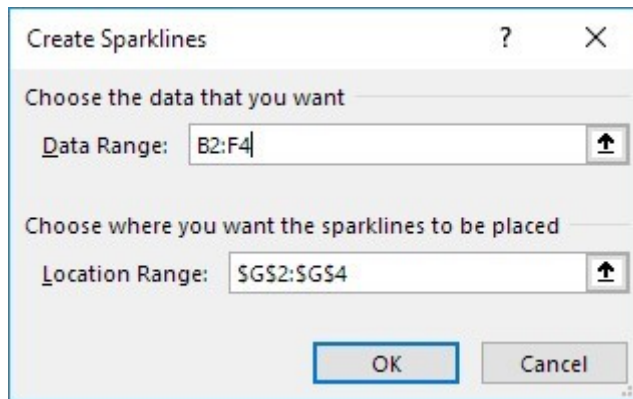
1. Select the cells where you want the sparklines to appear. In this example, we select the range G2:G4.

	A	B	C	D	E	F	G	H	I
1	Name	Jan	Feb	Mar	Apr	May			
2	Oliver	\$4,097	\$3,514	\$2,168	\$1,837	\$6,186			
3	Jack	\$2,721	\$5,820	\$6,766	\$9,855	\$8,738			
4	Bob	\$886	\$4,326	\$2,526	\$756	\$5,851			
5									

2. On the Insert tab, in the Sparklines group, click Line.



3. Click in the Data Range box and select the range B2:F4.



4. Click OK.

Result:

	A	B	C	D	E	F	G	H	I
1	Name	Jan	Feb	Mar	Apr	May			
2	Oliver	\$4,097	\$3,514	\$2,168	\$1,837	\$6,186			
3	Jack	\$2,721	\$5,820	\$6,766	\$9,855	\$8,738			
4	Bob	\$886	\$4,326	\$2,526	\$756	\$5,851			
5									

5. Change the value in cell F2 to 1186.

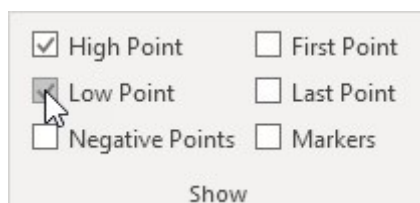
Result. Excel automatically updates the sparkline.

	A	B	C	D	E	F	G	H	I
1	Name	Jan	Feb	Mar	Apr	May			
2	Oliver	\$4,097	\$3,514	\$2,168	\$1,837	\$1,186			
3	Jack	\$2,721	\$5,820	\$6,766	\$9,855	\$8,738			
4	Bob	\$886	\$4,326	\$2,526	\$756	\$5,851			
5									

Customize Sparklines

To customize sparklines, execute the following steps.

1. Select the sparklines.
2. On the Design tab, in the Show group, check High Point and Low point.



Result:

	A	B	C	D	E	F	G	H
1	Name	Jan	Feb	Mar	Apr	May		
2	Oliver	\$4,097	\$3,514	\$2,168	\$1,837	\$1,186		
3	Jack	\$2,721	\$5,820	\$6,766	\$9,855	\$8,738		
4	Bob	\$886	\$4,326	\$2,526	\$756	\$5,851		
5								

Note: to make the sparklines larger, simply change the row height and column width of the sparkline cells.

3. On the Design tab, in the Style group, choose a nice visual style.



Result:

	A	B	C	D	E	F	G	H
1	Name	Jan	Feb	Mar	Apr	May		
2	Oliver	\$4,097	\$3,514	\$2,168	\$1,837	\$1,186		
3	Jack	\$2,721	\$5,820	\$6,766	\$9,855	\$8,738		
4	Bob	\$886	\$4,326	\$2,526	\$756	\$5,851		
5								

Note: the high points are colored green now and the low points are colored red.

To delete a sparkline, execute the following steps.

4. Select 1 or more sparklines.

5. On the Design tab, in the Group group, click Clear.



Compare Sparklines

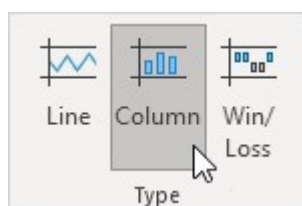
By default, each sparkline has its own vertical scale. The maximum value is plotted at the top of the cell.

The minimum value is plotted at the bottom of the cell.

To compare sparklines, execute the following steps.

1. Select the sparklines.

2. On the Design tab, in the Type group, click Column.



Result:

	A	B	C	D	E	F	G	H
1	Name	Jan	Feb	Mar	Apr	May		
2	Oliver	\$4,097	\$3,514	\$2,168	\$1,837	\$1,186		
3	Jack	\$2,721	\$5,820	\$6,766	\$9,855	\$8,738		
4	Bob	\$886	\$4,326	\$2,526	\$756	\$5,851		
5								

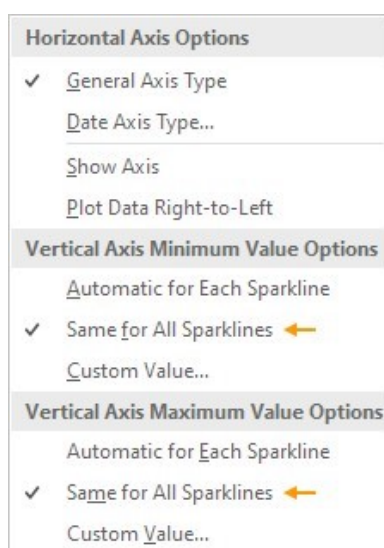
Note: all green bars have the same height, but the maximum values (B2, E3 and F4) are different!

3. Select the sparklines.

4. On the Design tab, in the Group group, click Axis.



5. Under Vertical Axis Minimum Value Options and Vertical Axis Maximum Value Options, select Same for All Sparklines.



Result:

	A	B	C	D	E	F	G	H
1	Name	Jan	Feb	Mar	Apr	May		
2	Oliver	\$4,097	\$3,514	\$2,168	\$1,837	\$1,186		
3	Jack	\$2,721	\$5,820	\$6,766	\$9,855	\$8,738		
4	Bob	\$886	\$4,326	\$2,526	\$756	\$5,851		
5								

Note: now you can clearly see that the earnings of Jack are much higher.

Win/Loss Sparklines

A win/loss sparkline only shows whether each value is positive (win) or negative (loss). Sometimes this can be useful.

	A	B	C	D	E	F	G	H
1	Name	Jan	Feb	Mar	Apr	May		
2	Oliver	-2	-4	-5	3	7		
3	Jack	4	8	-6	-2	-9		
4	Bob	1	3	-2	7	-10		
5								

Note: try it yourself. Download the Excel file and select the sparklines. Next, on the Design tab, click Column (instead of Win/Loss) to clearly see how high and low the values are.

Practical 18 - Gauge Chart

A gauge chart (or speedometer chart) combines a Doughnut chart and a Pie chart in a single chart. This is what the spreadsheet looks like.

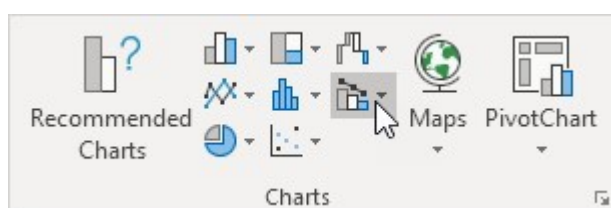
	A	B	C	D	E	F	G	H	I
1									
2								Donut	Pie
3								25	75
4								50	1
5								25	124
6								100	
7									
8									75% complete
9									
10									
11									

To create a gauge chart, execute the following steps.

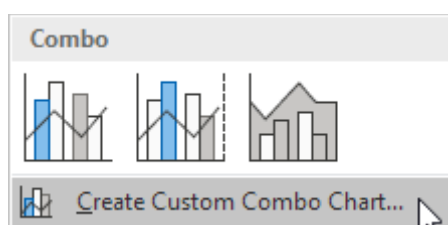
1. Select the range H2:I6.

Note: the Donut series has 4 data points and the Pie series has 3 data points.

2. On the Insert tab, in the Charts group, click the Combo symbol.

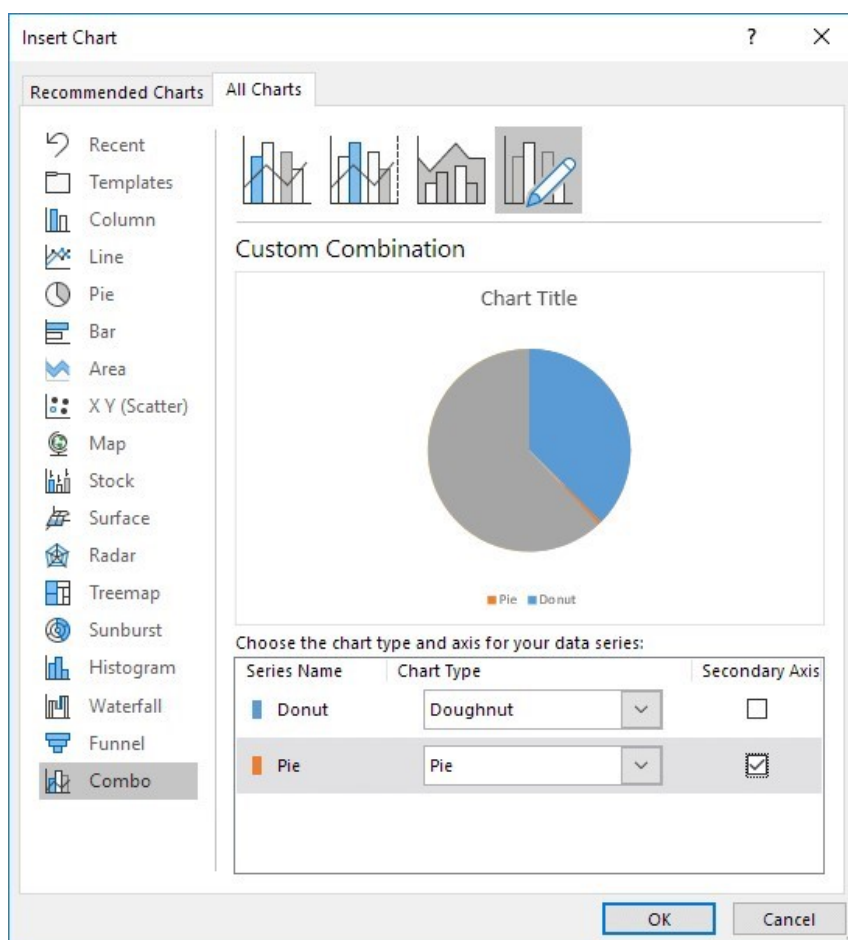


3. Click Create Custom Combo Chart.

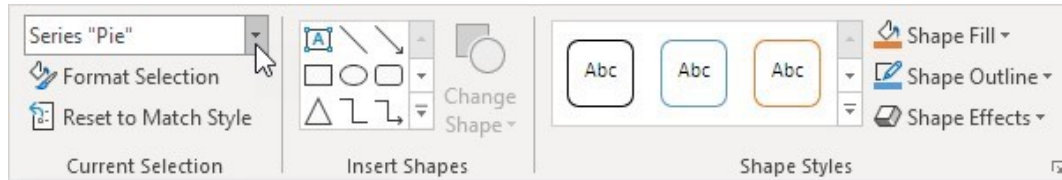


The Insert Chart dialog box appears.

4. For the Donut series, choose Doughnut (fourth option under Pie) as the chart type.
5. For the Pie series, choose Pie as the chart type.
6. Plot the Pie series on the secondary axis.

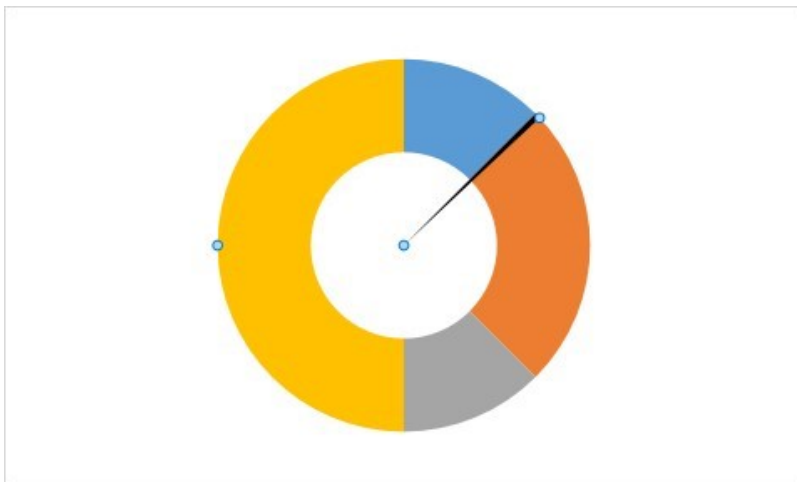


7. Click OK.
8. Remove the chart title and the legend.
9. Select the chart. On the Format tab, in the Current Selection group, select the Pie series.



10. On the Format tab, in the Current Selection group, click Format Selection and change the angle of the first slice to 270 degrees.
11. Hold down CTRL and use the ← and → keys to select a single data point. On the Format tab, in the Shape Styles group, change the Shape Fill of each point. Point 1 = No Fill, point 2 = black and point 3 = No Fill.

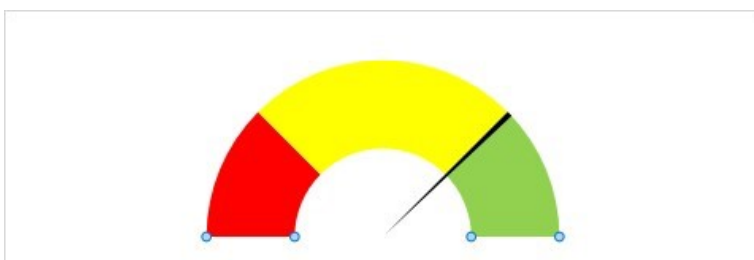
Result:



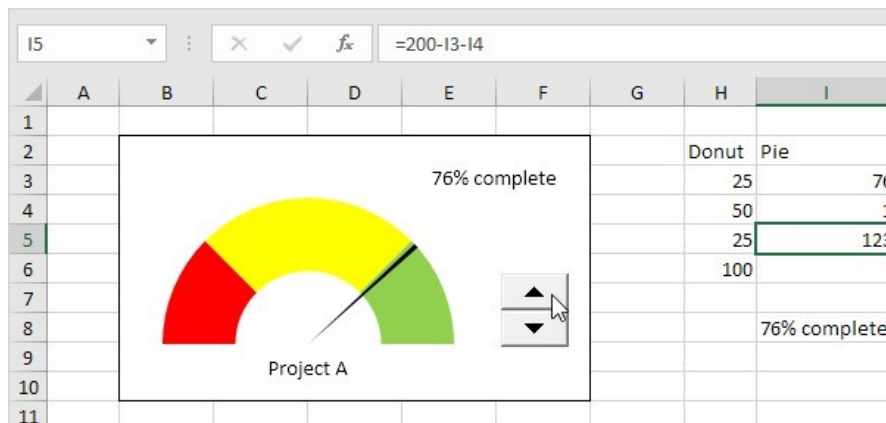
Explanation: the Pie chart is nothing more than a transparent slice of 75 points, a black slice of 1 point (the needle) and a transparent slice of 124 points.

12. Repeat steps 9 to 11 for the Donut series. Point 1 = red, point 2 = yellow, point 3 = green and point 4 = No Fill.

Result:



13. Select the chart. On the Format tab, in the Current Selection group, select the Chart Area. In the Shape Styles group, change the Shape Fill to No fill and the Shape Outline to No Outline.
14. Use the Spin Button to change the value in cell I3 from 75 to 76. The Pie chart changes to a transparent slice of 76 points, a black slice of 1 point (the needle), and a transparent slice of $200 - 1 - 76 = 123$ points. The formula in cell I5 ensures that the 3 slices sum up to 200 points.



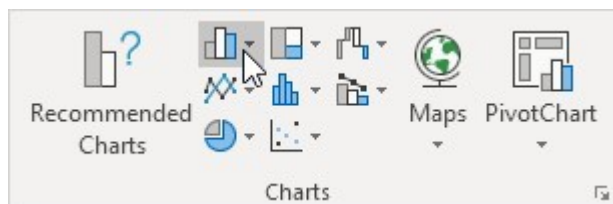
Practical 19 - Gantt Chart

Excel does not offer Gantt as chart type, but it's easy to create a Gantt chart by customizing the stacked bar chart type. Below you can find our Gantt chart data.

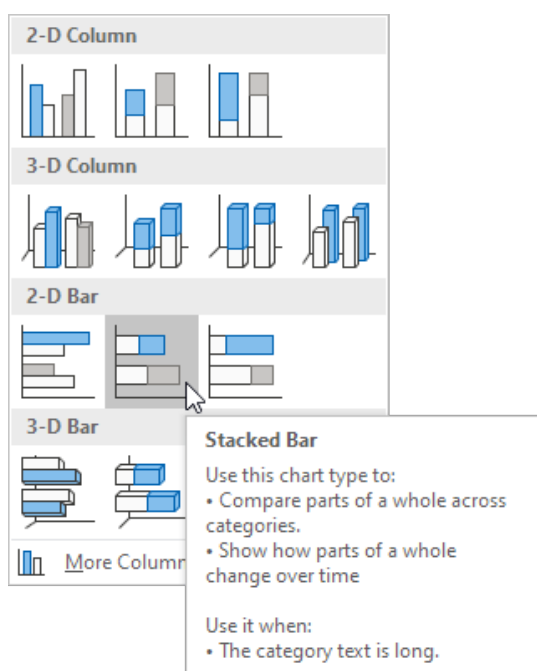
	A	B	C	D
1	Build a House			
2				
3		Start Date	Duration	
4	Foundation	1-Jun	10	
5	Walls	12-Jun	7	
6	Roof	20-Jun	10	
7	Windows, Doors	1-Jul	5	
8	Plumbing	7-Jul	3	
9	Electric	7-Jul	3	
10	Painting	11-Jul	2	
11	Flooring	13-Jul	2	
12				

To create a Gantt chart, execute the following steps.

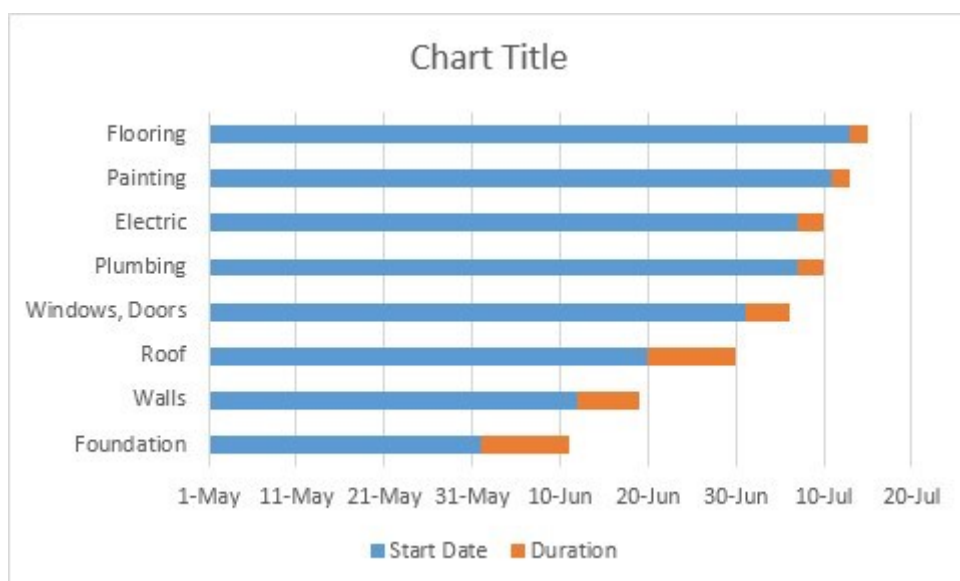
1. Select the range A3:C11.
2. On the Insert tab, in the Charts group, click the Column symbol.



3. Click Stacked Bar.



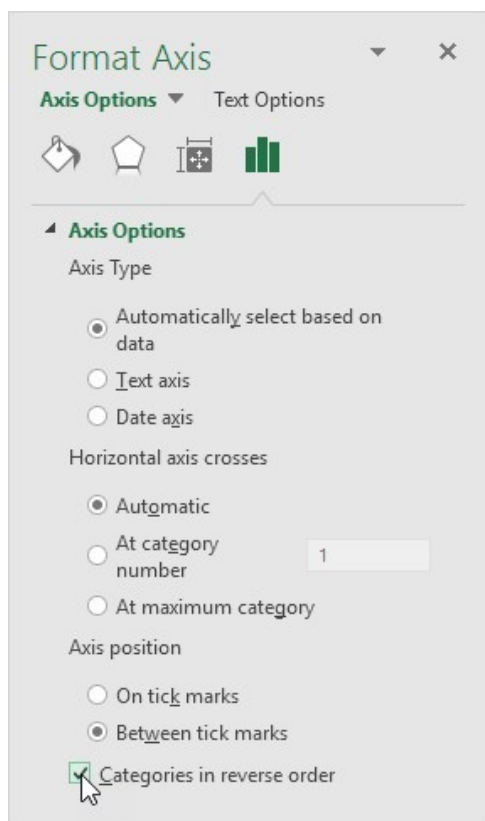
Result:



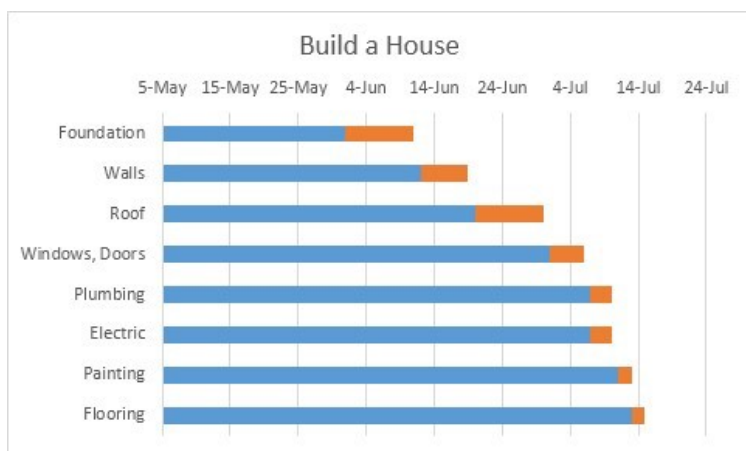
4. Enter a title by clicking on Chart Title. For example, Build a House.

5. Click the legend at the bottom and press Delete.

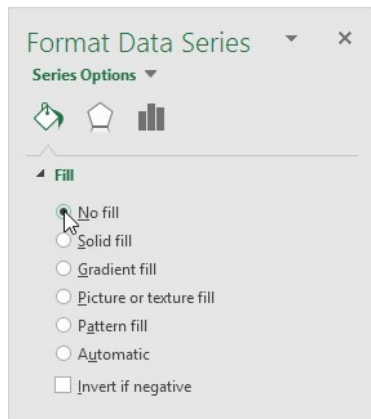
6. The tasks (Foundation, Walls, etc.) are in reverse order. Right click the tasks on the chart, click Format Axis and check 'Categories in reverse order'.



Result:

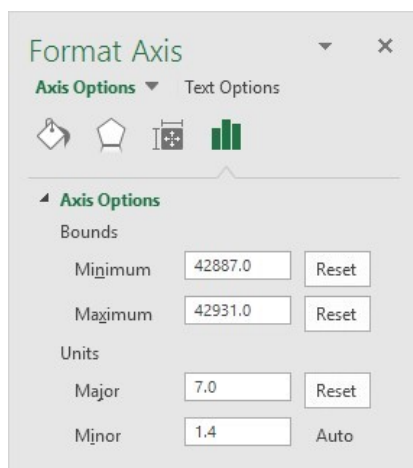


7. Right click the blue bars, click Format Data Series, Fill & Line icon, Fill, No fill.

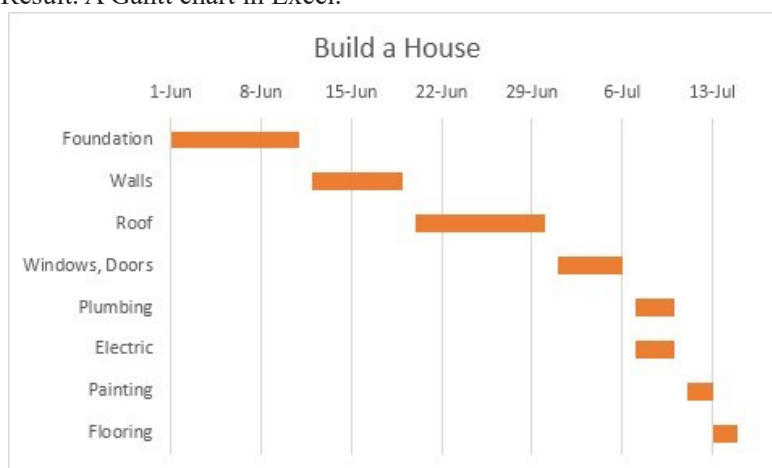


8. Dates and times are stored as numbers in Excel and count the number of days since January 0, 1900.

1jun-2017 (start) is the same as 42887. 15-jul-2017 (end) is the same as 42931. Right click the dates on the chart, click Format Axis and fix the minimum bound to 42887, maximum bound to 42931 and Major unit to 7.



Result. A Gantt chart in Excel.



Note that the plumbing and electrical work can be executed simultaneously.

CHART-Practice Excel

By using the information below, create the following charts sheet and save them as Chart1, Chart2 respectively:

BUSINESS ADMINISTRATION				
		MODULES		
<i>SURNAME</i>	<i>F.NAME</i>	<i>CAB</i>	<i>Economics</i>	<i>Marketing</i>
WATT	Gerard	81	70	86
JAY	Prathima	85	70	60
DUPONT	Jean	75	50	58
DUMONT	Silvestre	46	52	48
SMITH	Nadine	80	75	90
PARSAD	Serge	89	79	90
RAMA	Vik	77	96	95

