

Creating Histograms with the Histogram Wizard

To begin the creation of a histogram, open the **Excel** program under **Start –All Apps – E – Excel 2016**. Enter your raw data in row(s) or column(s) of choice. Since you will be using the histogram tool, the arrangement of data does not matter (Example on page2).

After the data has been entered, a group of the upper value of each bin needs to be written. It does not matter whether these are in numerical order or not. Excel takes all numbers greater than the previous bin value up to and including the current bin value. A bin is a cluster of like values from the data. For example, if there are 18 values in the data, there would be three bins with six values in each bin. Therefore, if you enter 0, 10, and 25.5 as the bin numbers in the bin 0 all numbers less than or equal to 0 will appear, in bin 10 all numbers less than or equal to 10 but greater than 0 will appear, and in bin 25.5 all numbers less than or equal to 25.5 but greater than 10 will appear. If any values are greater than the largest upper limit in the bin list, they will be included in a **More** category.

If you haven't already, you'll need to enable Solver. To enable Solver, go to **FILE > Options > Add-Ins**. Click **Solver Add-in** and press **Go...** Check all of the boxes and press **OK**. Now, Solver should be under the **DATA** tab, in the **Analyze** group.

Now, under the **Data** tab, in the **Analyze** group choose the top icon called **Data Analysis**. Click on this option and choose **Histogram** in the given menu. The **Histogram** dialog box will appear.

This window gives you some options for data input and output. In order to input the range into the **Input range** space, use the mouse to highlight the raw data being sorted. Like most programs in **Excel**, this will automatically calculate the range of the data and input it into the box. Then click in the **Bin range** space and use the mouse to highlight the bin values. If you have labels as the first row of data, click on the **Labels** option. If you do not, **Excel** will create labels for you.

There are also a few options for placing the output. To put the output on another sheet, click on the **New Worksheet Ply** option. If you wish to name this sheet, type the name into the space provided. To put the output in some range in the current sheet, click on the **Output Range** option. Click in the space provided and use the mouse to highlight the desired output range. You may also output to a **New Workbook** by clicking on that option.

To automatically create a chart, click on the **Chart Output** option. This will create a graphical representation of the output values. **Pareto (sorted histogram)** will sort the numerical output of the histogram from the

bins with the greatest frequency to those with the least frequency. The **Cumulative Percentage** option creates both a graphical and numerical representation of the cumulative percentage.

Example:

Given the data:

Avg. number of gallons of Water used by a 5 person household (per day)	Bin Values in Number of Gallons
19	75
25	50
46	25
60	
35	
31	
29	
52	
22	
16	

using the Data Analysis Histogram Wizard will give the following results:

<i>Bin</i>	<i>Frequency</i>
25	4
50	4
75	2
More	0

Avg. Daily Use of Water in a 5 Member Household

