

Graphical Methods

Introduction to Statistics
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○ **Histogram:**

The histogram is a graph that displays the data by using vertical bars of various heights to represent the **frequencies**.

Example: (This example is copied from Bluman’s Elementary Statistics)

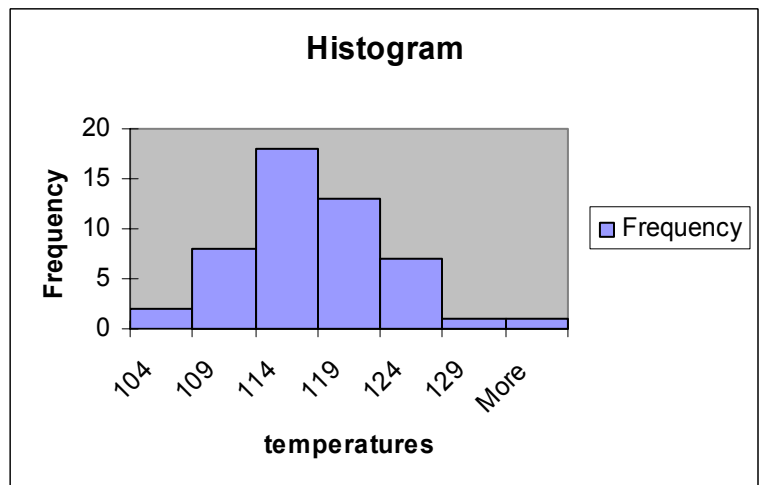
The following data represent the record high temperatures for each of the 50 states.

112	100	127	120	134	118	105	110	109	112
110	118	117	116	118	122	114	114	105	109
107	112	114	115	118	117	118	122	106	110
116	108	110	121	113	120	119	111	104	111
120	113	120	117	105	110	118	112	114	114

Steps:

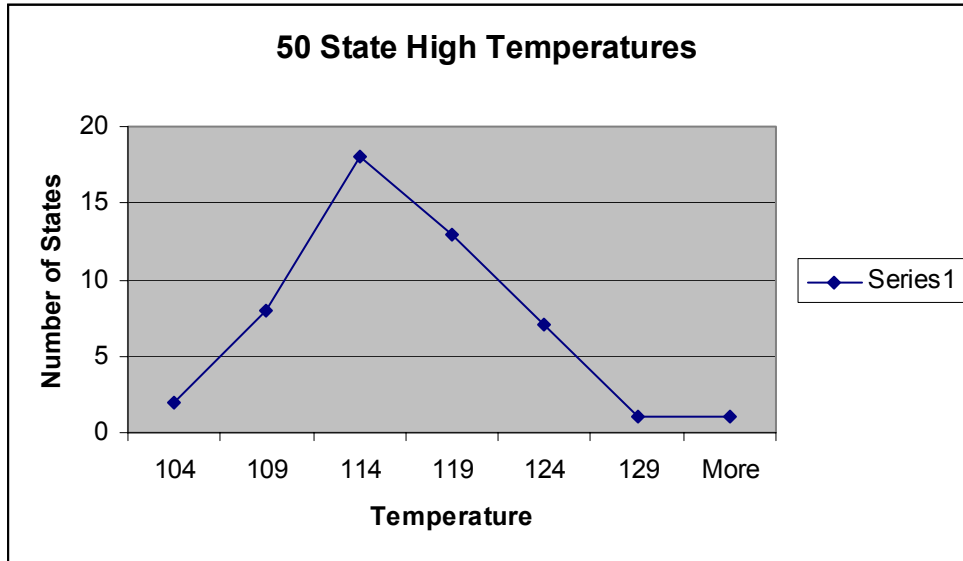
1. Enter the above **data** in one column in Excel worksheet
2. Enter your **bin** (bin is optional) in another column. Bin is *the right end boundary of each interval*. The way to get bin numbers is dividing the intervals between max and median, median and min.
3. In **Data Analysis**, select **Histogram** and click the [OK] button.
4. In the **Histogram dialog box**, select the *input range, bin range, labels, output range* and ask *chart output*, and click the [OK] button.
5. *Double click on the center of the first bar* and you will get another window of “Format Data Series”. Click on “Options” and change the “Gap Width” to **0**.

temperatures	Frequency
104	2
109	8
114	18
119	13
124	7
129	1
More	1



○ **Line Graph:**

1. Highlight the frequency table from last example.
2. Click on Chart Wizard icon.
3. In the Chart Wizard dialog box, select Line and click on [NEXT] button twice.
4. Type in the information for chart title, category(X) axis, value(Y) axis and click on [NEXT] button.
5. Click on [Finish] button.



○ **Pie Graph:**

A pie graph is a circle that is divided into sections to the percentage of frequencies in each category of the distribution.

The label & percent are shown below.

