Each column in the table from Statistics Canada represents a list of ***one-variable statistics***.

- every ***entry*** (or number) in the column is measuring the same, single, unknown.
- In tabular form, it can be difficult to identify trends in the data. - need to sort and organize it.
- two ways 1) Frequency Distribution Table
  2) Histogram (Graph)

Frequency Distribution

By sorting data into intervals (or classes) and counting the number of entries that fall into each interval, it becomes easier to make a graph which allows us to quickly spot trends.

Rules:

1. stick to 5-20 intervals. To do this, first find the range of data, and then divide that number by both 5 and 20 to determine how big each interval should be.
2. Make sure that the intervals don't overlap. If they do, you may end up counting some entries twice. To avoid this, add a decimal place to the start and end values of each interval.

Ex 1

a) Make a frequency distribution table to represent the number of wet days in Canadian cities by looking at the Stats Canada table.

b) Make a histogram using your frequency distribution.

Step 1: Find the range.

Range= Highest # - Lowest #

=217-109

=108

Interval Length:

$$\text{5 intervals (bars)} = \frac{108}{5} = 21.6$$

$$\text{20 intervals (bars)} = \frac{108}{20} = 9$$

- want intervals anywhere from 9 units to 21.6 units wide.
- To make counting easier, we choose any number between 9 and 21.6 that is easy to count by.

$\therefore$ good interval length = 20 (this could be any other number such as 10 or 15)

Step 2: Avoid overlap. Add a decimal to the start and end values of each interval.

- To choose a starting interval, be sure that it includes the lowest number (in this case 109).

$\therefore$ good starting interval is 100.5-120.5 (note: this is 20 units long with an extra decimal place added)

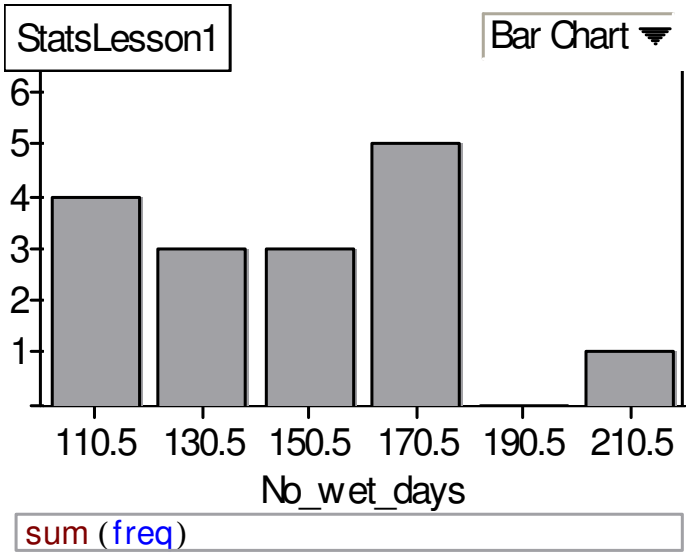
Step 3: Sort the data in a table

Interval	Tally	Frequency	Cumulative Frequency
100.5-120.5	IIII	4	4
120.5-140.5	III	3	7
140.5-160.5	III	3	10
160.5-180.5	IIIII	5	15
180.5-200.5		0	15
200.5-220.5		I	16

Note: *Keep counting your intervals by twenty until you've included the last number (in this case, 217).

*A cumulative frequency column in a good way to double check that you didn't miss any entries.

b) **Organize data in graphical form.**



Notes: *The y-axis is frequency

*The x-axis represents whatever you are counting

*Unless your interval starts at zero, you should include a break in your graph

*It is often easier to write the midpoint of each interval rather than the start and end points

*There are no spaces between the bars since the intervals are **continuous**, this means that there is no break in the x-values