

1.3.5: Graphs of Numeric Data

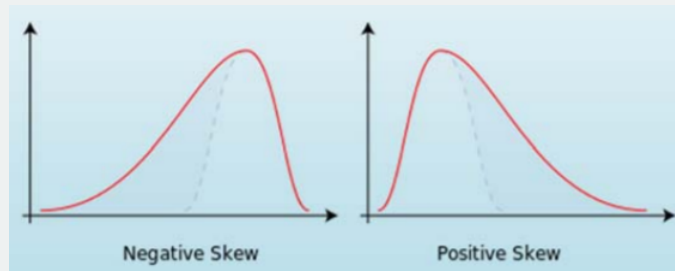
Numeric data is treated differently from categorical data as there exists quantifiable differences in the data values. In analyzing quantitative data, we can describe quantifiable features such as the center, the spread, the shape or skewness¹⁸, and any unusual features (such as outliers).

Interpreting and Describing Numeric Data

Center – Where is the middle of the data, what value would represent the average or typical value?

Spread – How much variability is there in the data? What is range of the data? (range is highest value – lowest value.)

Shape – Are the data values symmetric or is it skewed positive or negative? Are the values clustered toward the center, evenly spread, or clustered towards the extreme values?



Unusual Features – Are there outliers (values that are far removed from the bulk of the data?)

Example: Students browsing the web

This data represents how much time 30 students spent on a web browser (on the Internet) in a 24 hour period.¹⁹

Data is rounded to the nearest minute.



102	104	85	67	101
71	116	107	99	82
103	97	105	103	95
105	99	86	87	100
109	108	118	87	125
124	112	122	78	92

This data set is continuous, ratio, quantitative data, even though times are rounded to the nearest integer. Sample data presented unsorted in this format are sometimes called **raw data**.

Not much can be understood by looking simply at raw data, so we want to make appropriate graphs to help us conduct preliminary analysis.

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