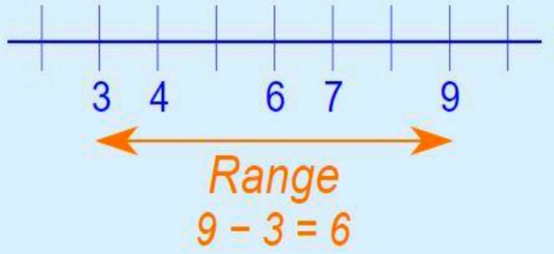
Range

- It is the difference between the highest value and the lowest value.

Example: In **{4, 6, 9, 3, 7}** the lowest value is 3, and the highest is 9.

So the range is 9 – 3 = **6**.

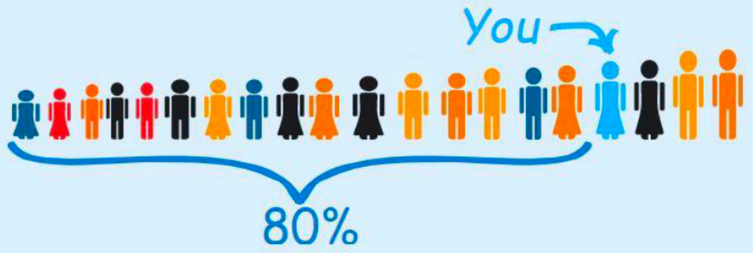


Percentile

- The value below which the percentage of data falls
- Is a way to represent position of a value in the data set
- The data should be in order

Example: You are the fourth tallest person in a group of 20

80% of people are shorter than you:



That means you are at the **80th percentile**.

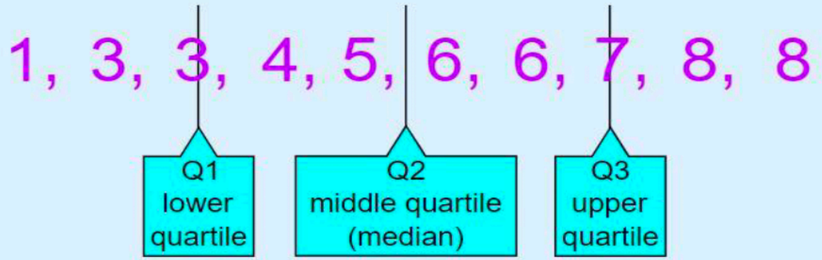
If your height is 1.85m then "1.85m" is the 80th percentile height in that group.

Quartiles

- splits the data into quarters

Example: 1, 3, 3, 4, 5, 6, 6, 7, 8, 8

The numbers are in order. Cut the list into quarters:



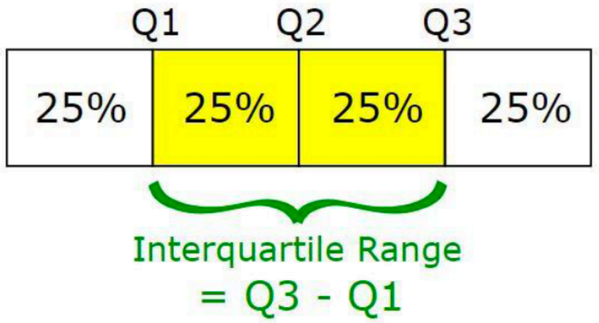
In this case Quartile 2 is half way between 5 and 6:

$$Q2 = (5+6)/2 = \mathbf{5.5}$$

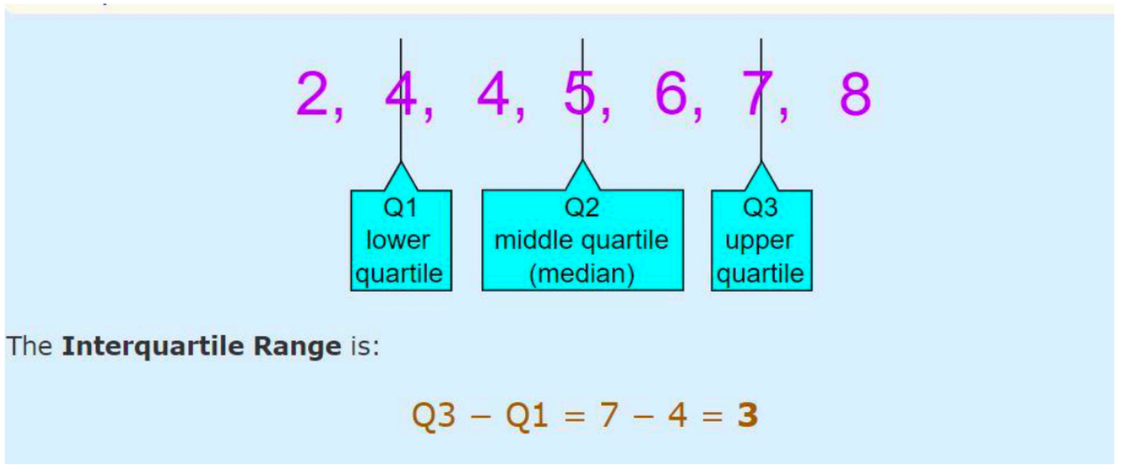
And the result is:

- Quartile 1 (Q1) = **3**
- Quartile 2 (Q2) = **5.5**
- Quartile 3 (Q3) = **7**

IQR



- The "Interquartile Range" is from Q1 to Q3:



OUTLIERS

- Outliers are values that "**lie out**side" the other values.
- They can change the mean a lot, so we can either not use them (and say so) or use the median or mode instead.