Descriptive	Inferential
1) organizing and summarizing data using numbers and graphs	1) using sample data to make an inference
2) central tendency (mean, median, mode)	2) Uses probability to determine how confident we can be that the conclusions we make are correct.
3) Variability (Range, Variance, standard deviation	

Population "N"

descriptive → Inferential

Sample ~n~

must be [random
          [representative
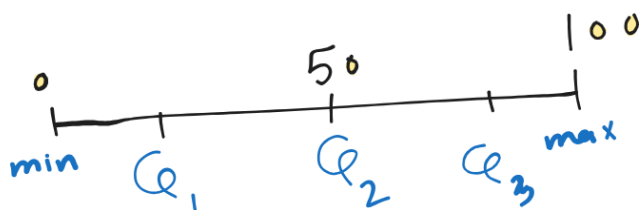
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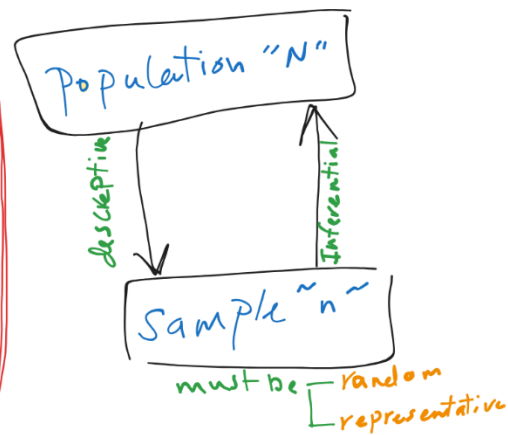
measure of central tendency :

1   mean: $\bar{x} = \dfrac{\sum x_i}{n}$

2   median: $\tilde{x} = x_i \; ; \; i = \dfrac{n+1}{2}$

3   mode: $\hat{x} = x_i$ with highest freq

بعد الترتيب

measure of variability

1 Range: $R = max - min$

2 Variance: $s^2 = \dfrac{\sum (x_i - \bar{x})^2}{n-1}$

3 standard deviation: $S = \sqrt{\dfrac{\sum (x_i - \bar{x})^2}{n-1}}$

Interquartile Range:

0   50   100

min Q_1 Q_2 Q_3 max

$\longleftarrow$ IQR $\longrightarrow$

$IQR = Q_3 - Q_1$

outliers → $[Q_1 - 1.5\, IQR , Q_3 + 1.5\, IQR]$