

2/25 التاريخ

الموضوع

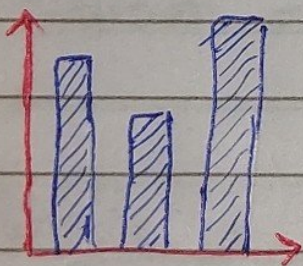
## Task\_4

What is statistics: a science of

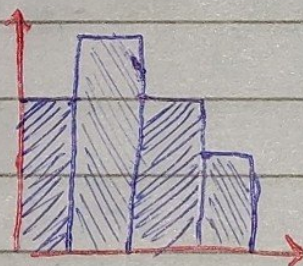
<sup>1</sup>Collecting, <sup>2</sup>analyzing and <sup>3</sup>interpreting  
even presenting as well. Data

\* Descriptive: organizing and summarizing  
data using Numbers & Graphs.

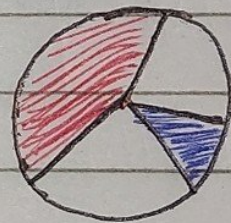
Data Summary Could have too many way Such as:



Bar graph



Histogram



Pie chart

نسبة في %

نقطة من خط

and more...

and to deal with numbers:

Central Tendency

(Avg) mean  $\bar{x} = \frac{\sum x}{n}$ , median المتوسط, mode العدد الأكثر تكراراً

↓  
we can use in Variability also.



\* Inferential : use a small sample to make an inference to have conclusion.

كلما زاد عدد ال Sample ، كلما كانت النتائج أدق

$$\text{mean} = \frac{\text{Sum}}{n} \rightarrow \text{number of things}$$

median = the middle number (must be sorted)

mode = أكثر عدد تم تكراره

Range = difference between biggest number , smallest number

$$\text{Variance} = S^2 = \frac{\sum (x_i - \bar{x})^2}{n-1}$$

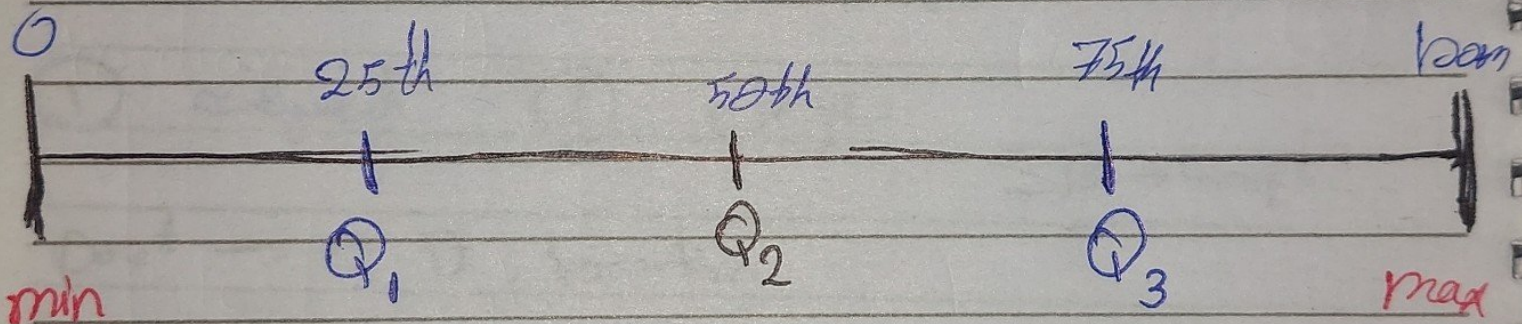
Data point  $\nwarrow$   $x_i$        $\nearrow$  mean  $\bar{x}$



$$\text{Standard Deviation} = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

Interquartile Range

$$IQR = Q_3 - Q_1$$



Outliers  $\Rightarrow$

$$[Q_1 - 1.5 IQR, Q_3 - 1.5 IQR]$$

Outliers : أنا خرج برا القيم دي فلاتي