Statistics → Descriptive / Inferential

Descriptive Statistics

* organizing ✓ summarizing ✓ using numbers & graphs
* measures of central tendency
  - mean ($\bar{x}$): $\frac{\Sigma X}{n}$
  - median: ① sort ② middle value
  - mode: * no mode * bimodal * multimodal
* measures of variability
  - range: * max − min
  - variance: $\sigma^2 = \frac{\Sigma (X-\bar{x})^2}{n}$
  - standard deviation: $\sigma = \sqrt{\sigma^2}$

Inferential statistics

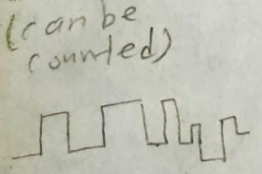
* Using sample data to make an inference or draw a conclusion of the population.
* Uses probability to determine how confidentwe can be the our conclusions are right.

Data

Quantitative

numerical data ✓

- Discrete (can be counted)
- continuous (can be measured)



Qualitative

descriptive data ✓ words

soft / hard
low / high
fast / slow

Scales of measurement

Nominal scale

* Qualitative
* order doesn't mater
* Names, Colors, Genders, ...

(red, green, blue)

Ordinal scale

* Ranking / placement
* Order matters
* Differences cannot be measured

(1st, 2nd, 3rd)

Interval scale

* order matters
* Differences can be measured except ratios.
* No true Zero starting point

(-7C°, 30C°, 45C°)

Ratio scale

* Order matters
* Differences can be measured including ratios
* contains a Zero starting point

(0 mark, 20, 30 marks)