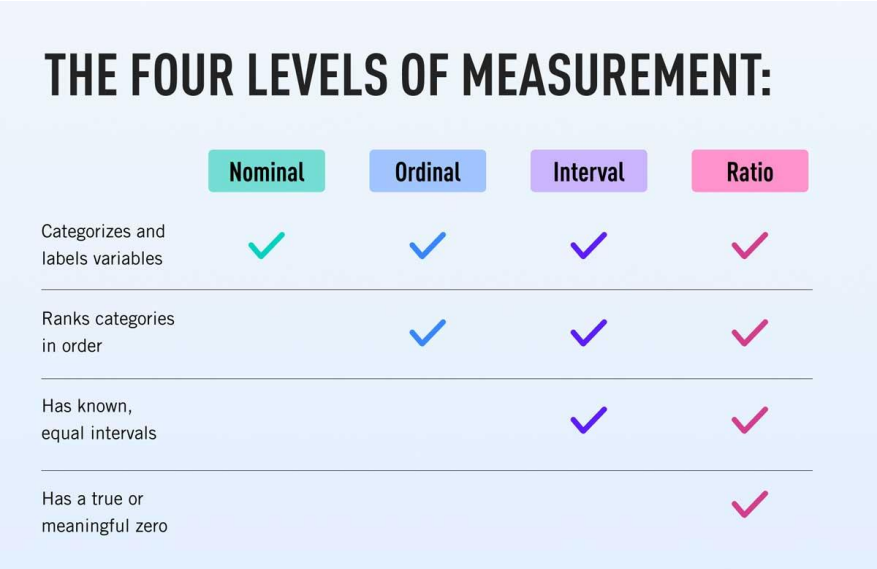
Task 5

Inferential Statistics:

1. **Using sample data to make inferences or draw a conclusion of the population**
2. **Uses probability to determine how confident we can be that the conclusions we make are correct. (Confidence intervals and margins of error)**

Types of data

Quantitative	Qualitative
Numerical Data	Descriptive data based on observations
Discrete (Counting)	Involves 5 senses
Continuous (Measurement)	See, feel, taste, hear, smell



Hypothesis testing

Rejecting hypothesis: if data gives strong evidence that hypothesis is wrong it is rejected

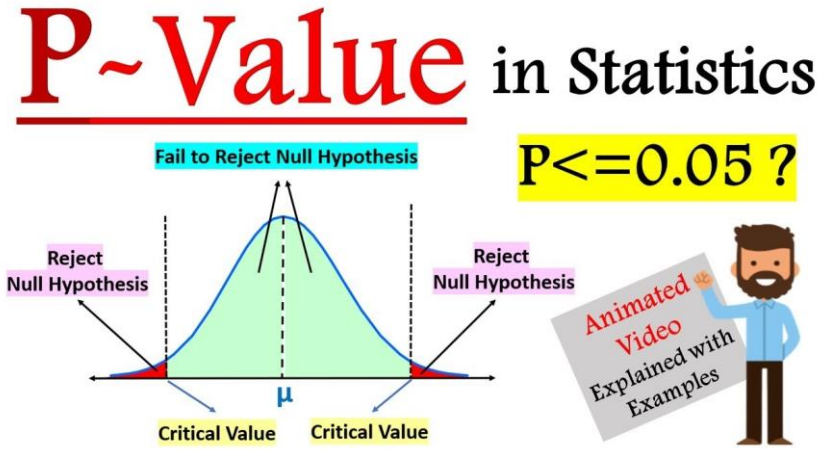
Failing to Reject: if data is similar to hypothesis but not exactly the same, then we fail to reject the hypothesis

The null hypothesis: statistical hypothesis that proposes that no statistical significance exists in a set of given observations and is used to assess the credibility of a hypothesis by using sample data.

Statistical test requirements:

1. **Data**
2. **Null or Primary hypothesis**
3. **Alternative hypothesis (it is the opposite of the null hypothesis)**

P-values are numbers between 0 and 1 that describes how likely you are to have found a particular set of observations if the null hypothesis were true, to help decide whether to reject the null hypothesis. (The likelihood that an observed outcome is the result of chance)



A p-value is composed of three parts:

1. **The probability random chance would result in the observation**
2. **The probability of observing something else that is equally rare**
3. **The probability of observing something rarer or more extreme**

Confidence intervals

confidence interval expresses a range of values within which we are pretty sure the population parameter lies. (how much sure? can be answer by confidence level) e.g. A 95% confidence interval says that for every 100

confidence intervals we calculate from sample data, about 95 of them will contain the population parameter and 5 will not.

Regression analysis

a reliable method of identifying which variables have impact on a topic of interest. The process of performing a regression allows you to confidently determine which factors matter most, which factors can be ignored, and how these factors influence each other.