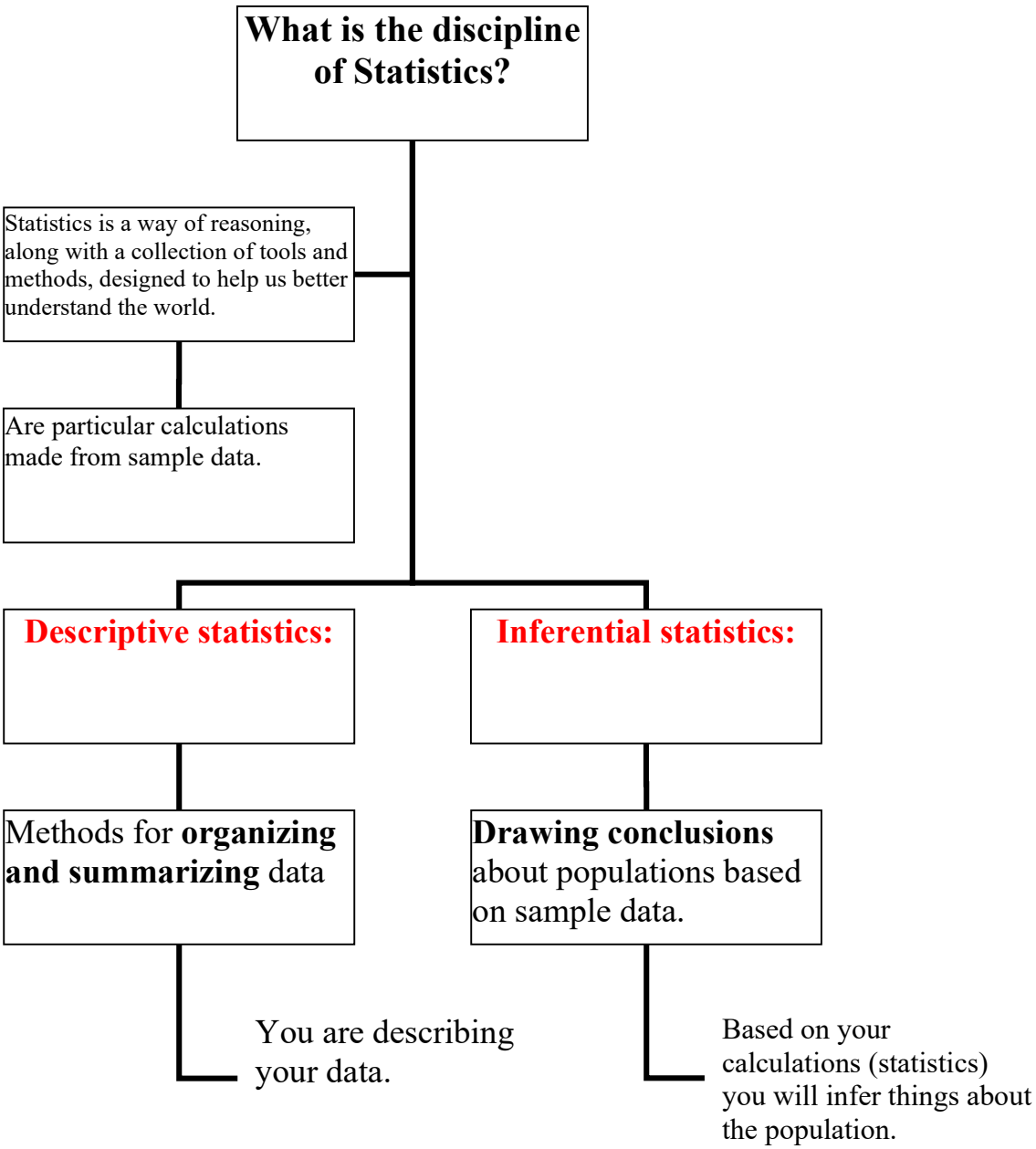
Lecture Notes

Chapters 1-2

Turning Data Into Information



- **Sample Size**

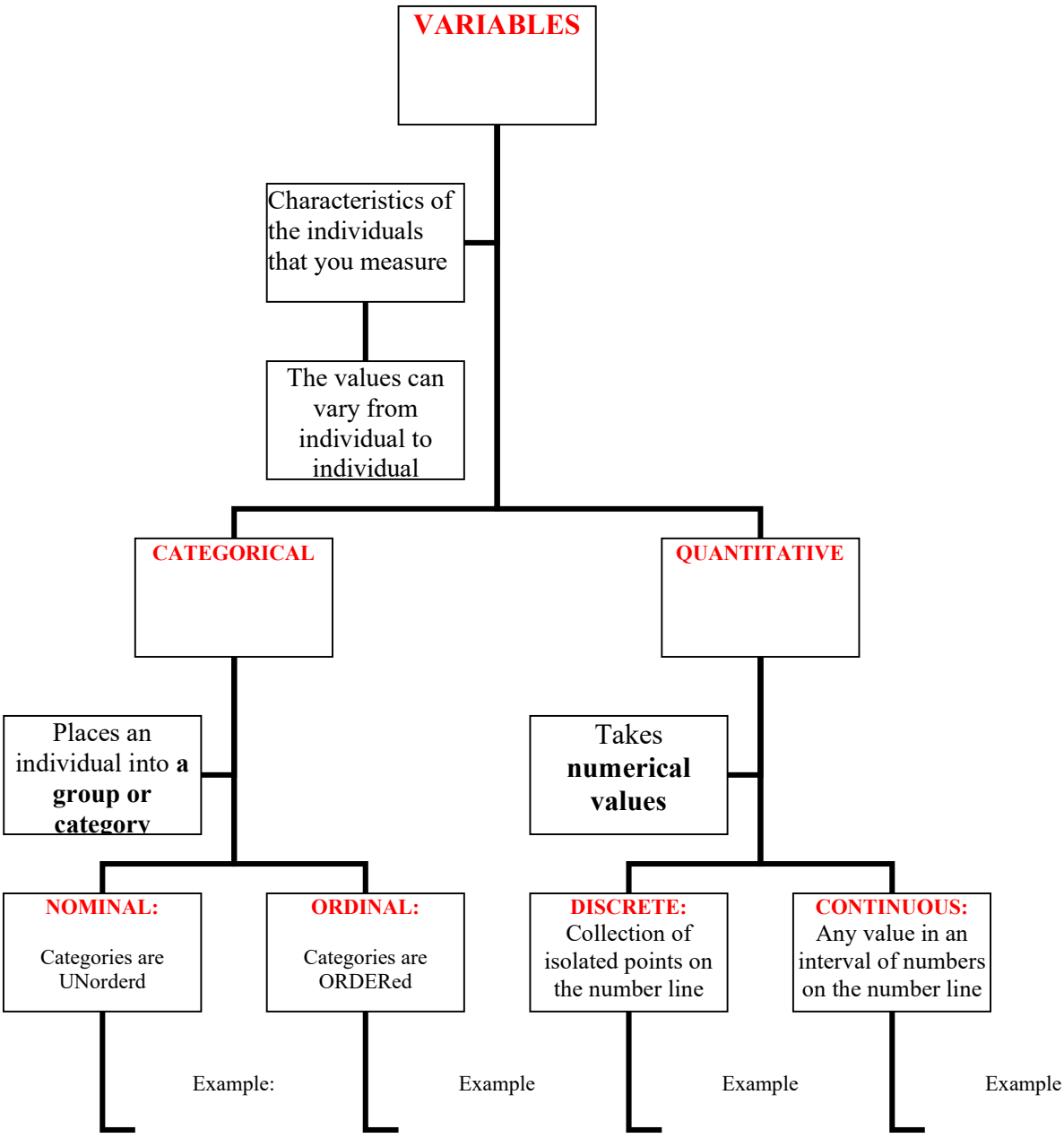
  How many people are in your sample?

- **Data**

  Are values you collect (this could be height, color of walls, count of cars, etc)

- **Experimental Units or Subjects**
  Could be individuals or subjects under study

  These are the **people or objects** we gather information about.


VARIABLES
Characteristics of the individuals that you measure
The values can vary from individual to individual
CATEGORICAL
QUANTITATIVE
Places an individual into **a group or category**
Takes **numerical values**
NOMINAL:
Categories are UNorderd
ORDINAL:
Categories are ORDERed
DISCRETE:
Collection of isolated points on the number line
CONTINUOUS:
Any value in an interval of numbers on the number line
Example:
Example
Example
Example

POPULATION:

The entire collection of persons, things or objects you wish to study.

POPULATION PARAMETER:

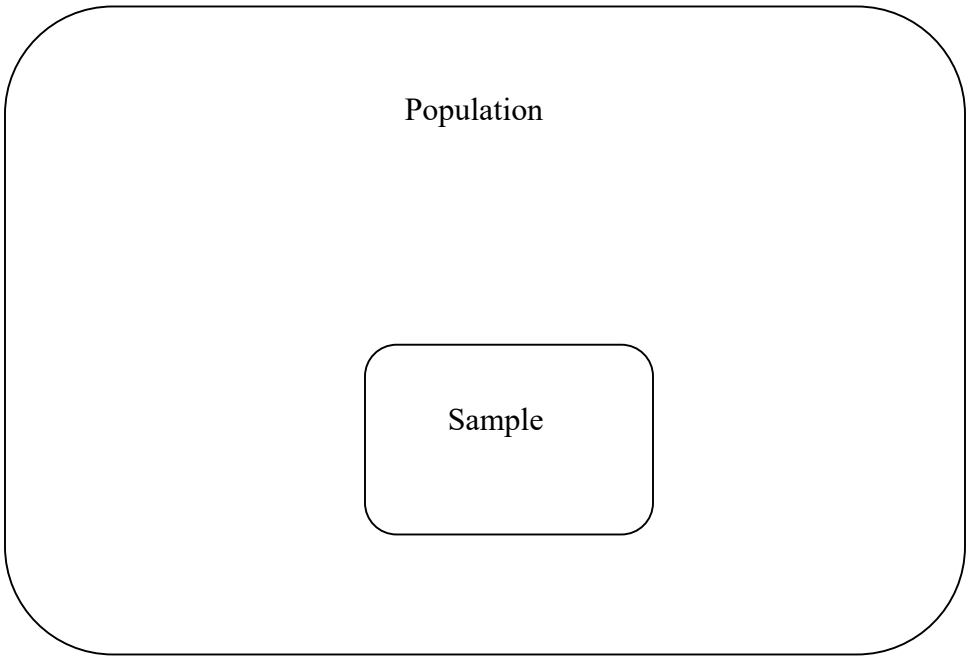
A number or calculation that describes or summarizes a population.

SAMPLE:

A subset of the population. The sample should be representative of the entire population.

SAMPLE STATISTIC:

A number or calculation that describes or summarizes a sample.



Sampling Variability: Each sample will select different people, and therefore, different values for the measured variables (no two samples will be identical)

A DISTRIBUTION TELLS US WHAT VALUES A VARIABLE CAN TAKE AND HOW OFTEN IT TAKES THESE VALUES.

Histograms, box plots, bar charts, pie charts all help us understand what the distribution is of data is.

For quantitative data:
If the distribution is symmetric:
Center: Mean
Spread: Standard Deviation
Best Picture: Histogram

If the distribution is skewed:
Center: Median
Spread: IQR
Best Picture: Box Plot