

1.2] Data Type

(1)

All of statistics is built on data. We need to know which type we are dealing with as there are different procedures for different types of data.

Def: Variable - this is a place holder for any type data.

- EX** Score on an exam
- EX** Gender, age, ...

Def: Qualitative Data (aka. categorical)

This data allows subjects to be categorized

- EX** Student's gender
- Student's names: (A-L, M-Z), major
- A car's color

Def: Quantitative Data: This tells us "how much"

This type of data can be represented as a location on a number line.

- EX** A person's age:
- A car's fuel economy:

EX

Assign a data type to each facet of the table below:

Student	ID	MAJOR	SAT	CLASS GRADE
Emily	123	Psych	920	A → 4.0
Julie	456	Education	750	C → 2.0
Greg	789	Business	820	B → 3.0
Mateo	812	I. T.	720	C → 2.0
Sarah	934	Music	950	B → 3.0
Andres	110	Business	820	B → 3.0

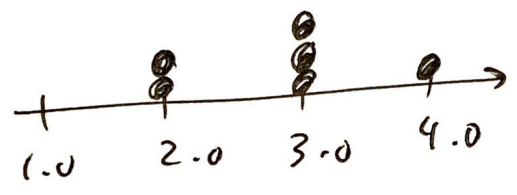
↑
Qualitative

↑
Qualitative

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Quantitative

↑
Qualitative
(Quasi-Quantitative)

Dot Plot



"Distribution"

We can further break down these two data assignments. (3)

• Qualitative data ^(categorical) can be broken down into

(i) Ordinal Data: data can be ordered

EX

Grades: A, B, C, D, F

Tax Bracket: low, mid, high tax

Drink size: S, M, L, XL

(ii) Nominal Data: No natural ordering

EX

State of Residence: CA, AK, AR, UT, TX

Gender:

Car Color:

"Quiz" which of the Qualitative (categorical) data

i) ordinal vs Nominal

1. Names of streets: nominal

2. Movie Ratings: G, PG, PG-13, R, NC-17

3. Olympic Medals: G, S, B ^{ordinal} ordinal

• Quantitative Data can be broken down into two categories

(i) Discreet Data : Numbers that come in hunks, or "quanta"

EX Numbers of eggs Checkers the Chicken Layed last night

EX Age (if in integer years)

(ii) Continuous Data : This data can be refined further and further in resolution

EX Distance 8m, 8.13m, 8.13579m

EX Gallons of milk (liters): 3.8l

"Quiz" which quantitative data is discreet?

1. Number of female olympians on the US team
→ Discreet

2. Water consumed by a household in 1 month
→ Continuous

3. Number of floors in a hotel: Discreet

4. Body Temperature : Integer Readout : Discreet
Analog Readout : Continuous