Journal #1

Why are you taking Probability and Statistics?

What do you want to do after graduation?

Aug 16-7:39 AM

Ch 1.1 Statistics

Where do we see ***statistics*** outside of the classroom?

How does statistics help us?

Jan 22-8:42 AM

Jan 22-8:46 AM

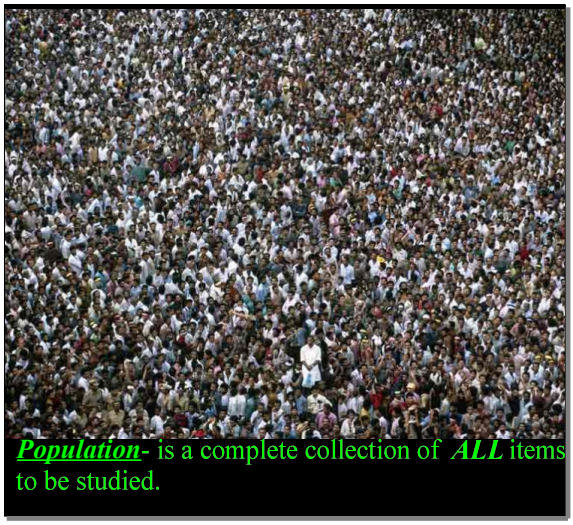
Ch 1.1 Statistics

Statistics: 2 meanings

- looking at specific numbers
- methods of analysis

Definition of Statistics: Is a collection of methods for planning experiments, obtaining data and then organizing, summarizing, presenting, analyzing, interpreting, and drawing conclusions based on the data.

Jan 22-9:03 AM



Population- is a complete collection of ***ALL*** items to be studied.

Jan 22-9:14 AM

Sample: is a subcollection of items drawn from the population.

Jan 22-9:18 AM

Sort into the correct column

Population **Sample**

GHS student body
GHS stats class

senior class officers
senior class

Henry county residents
Henry county voters

Western Illinois University
Illinois colleges

Aug 20-9:22 AM

Data - are observations (such as measurements, genders, or survey responses) that have been collected.

Parameter - is a numerical measurement describing some characteristic of a population.

Ex) Student body president got 85% of the votes from the students at GHS.

Ex) 10% of all employees are not in favor of the proposed plan.

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Statistic - is a numerical measurement describing some characteristic of a sample.

Ex) A survey of 100 students from the school showed 40% of the students listen to country music.

Ex) A survey of 50 teachers in the school district showed that 25% of the teachers would like all year round school.

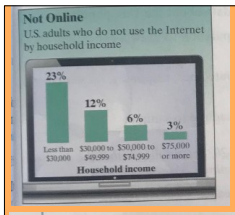
Aug 17-2:10 PM

Branches of Statistics:

1. **Descriptive** -involves the organization, summarization, and display of the data.

2. **Inferential** - involves using a sample to draw conclusion about a population. (assumptions)

Aug 12-8:25 AM



Descriptive and Inferential Statistics

For each study, identify the population and the sample. Then determine which part of the study represents the descriptive branch of statistics. What conclusions might be drawn from the study using inferential statistics?

1. A study of 2560 U.S. adults found that of adults not using the Internet, 23% are from households earning less than $30,000 annually, as shown in the figure at the left. *(Source: Pew Research Center)*

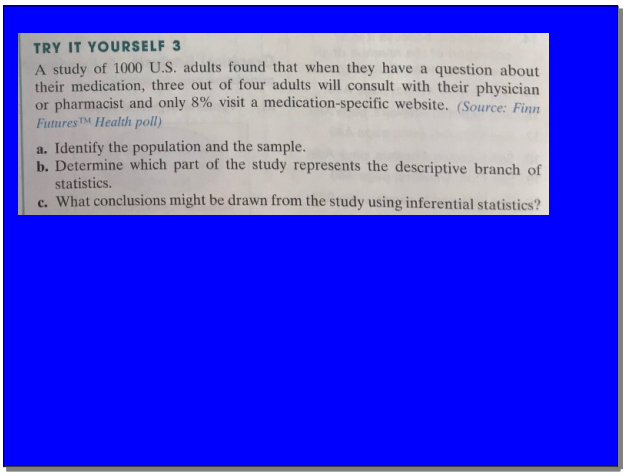
The population consists of the responses of all U.S. adults, and the sample consists of the responses of the 2560 U.S. adults in the study. The part of this study that represents the descriptive branch of statistics involves the statement "23% [of U.S. adults not using the Internet] are from households earning less than $30,000 annually." Also, the figure represents the descriptive branch of statistics. A possible inference drawn from the study is that lower-income households cannot afford access to the Internet.

Aug 12-8:47 AM

2. A study of 300 Wall Street analysts found that the percentage who incorrectly forecasted high-tech earnings in a recent year was 44%. *(Adapted from Bloomberg News)*

The population consists of the high-tech earnings forecasts of all Wall Street analysts, and the sample consists of the forecasts of the 300 Wall Street analysts in the study. The part of this study that represents the descriptive branch of statistics involves the statement "the percentage [of Wall Street analysts] who incorrectly forecasted high-tech earnings in a recent year was 44%." A possible inference drawn from the study is that the stock market is difficult to forecast, even for professionals.

Aug 12-8:48 AM



Aug 12-8:49 AM

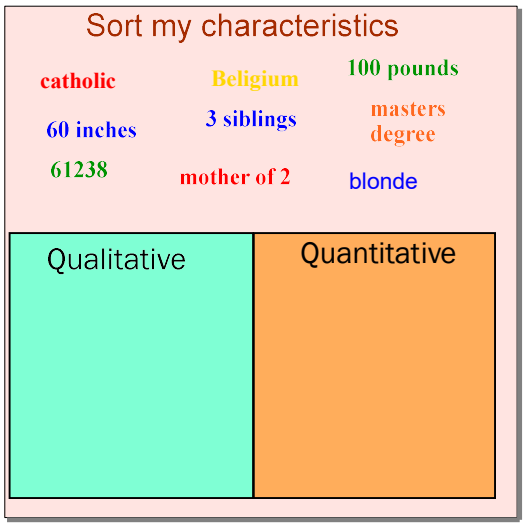
Ch 1.2

There are 2 types of ***Data***:

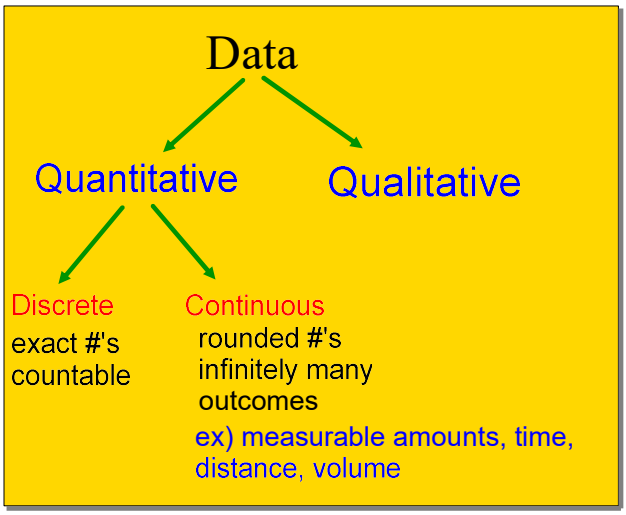
- ***Quantitative data***- consists of numerical values representing counts or measurements.
- Ex) height, weight, income, number of pencils on your desk.
- ***Qualitative data*** - data separated into categorical or non-numerical characteristics.

Ex) hair color, eye color, gender, religion, marital status, zip code, social security number, or jersey number.

Jan 22-12:50 PM



Sort by Column



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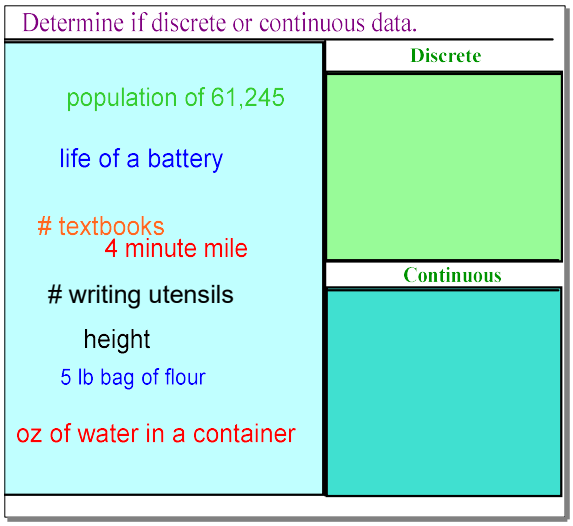

Aug 6-2:19 PM

Data can be classified by ***Levels of Measurement***:

1. ***Nominal***: characterized by data that consists of names, labels or categories. Can't be arranged in an order.

ex) yes or no, names of tv shows, ss#, zip codes, marital status

2. ***Ordinal***: non-numerical data that can be arranged in order.

ex) grades:A, B, C, D or F, above average, average, or below average, good, better, or best, ratings on stars: 4 star hotel

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3. ***Interval***: numerical data that doesn't have a natural zero or starting point.

ex) temperature: F^o or C^o, time in terms of years: 2009, GPA

4. ***ratio***: interval level that includes a natural starting point. The amount can be doubled.

ex) money, weight, height, and time in terms of minutes or seconds.

Aug 17-2:11 PM

Match the level of measurement

Interval **Nominal** **Ordinal** **Ratio**

top 40 songs

-35 F^o

marital status

age

200 A. D

blue ribbon

12 oz coke cans

Political Affiliation

Matching Pairs