Definitions:

Statistics is the *process* that begins with the collection of data (after carefully designing a collection protocol) and that ends with conclusions, predictions, or summarization of trends.

A variable is a characteristic of a group of objects that is well-defined and that varies among those objects. Examples: Age, Height, Number of siblings, Relationship Status, Zip Code

A sample is a subset of a population used to make estimations about the population.

Sampling is the process of selecting a sample.

Classifications of statistics and variables:

Descriptive Statistics make summarizations about a group of data

Inferential Statistics make estimations about population variables or predictions.

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Qualitative Variables have non-numerical, or arbitrarily assigned numerical values.

Examples: Make of car, zip code

Quantitative Variables have meaningful numerical values.

Examples: Age, number of siblings

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A *Discrete* Variable has values that can be counted. All qualitative variables are discrete.

Examples: Number of siblings, relationship status, rank (1st, 2nd, 3rd, . . .)

A *Continuous* Variable has values that come from a continuum, or range of numerical values

Examples: Elapsed time, capacity (volume)

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The values of a variable with nominal level of measurement can be grouped into categories which have no inherent order.

Example: Relationship status

The values of a variable with ordinal level of measurement can be grouped into categories which have an inherent order.

Example: Movie ratings

The values of a variable with interval level of measurement can be comparatively ranked and zero is a value that does not correspond to a lack of the variable.

Example: Temperature

The values of a variable with ratio level of measurement can be comparatively ranked and zero is a value that corresponds to a lack of the variable.

Examples: Salary, Number of siblings