Data Types

Objectives

1. Distinguish between qualitative and quantitative data
2. Determine if data is discrete or continuous
3. Classify data by its level of measurement

Qualitative Data

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Qualitative data (a.k.a. *categorical data*) is data that is based on some quality or characteristic.

For instance:

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For instance:

- Your name
- Blood type
- Zip code

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If two data values can be added together (or subtracted) to produce **meaningful** results, then the data is quantitative. Else, it is qualitative.

Example 1

Determine if each of the following represents qualitative or quantitative data.

(a) The amount of water a household uses in a month.

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(b) Each student's favorite color in a statistics class.

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If we add (or subtract) two households' water usage, we obtain meaningful results; this data is quantitative.

(b) Each student's favorite color in a statistics class.

Favorite color is a qualitative data value.

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If we add (or subtract) two Social Security numbers, we do not produce meaningful results. Thus, SSNs are qualitative.

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If we add (or subtract) two of these data values, we get meaningful results; this data is quantitative.

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Subgroups of Quantitative Data

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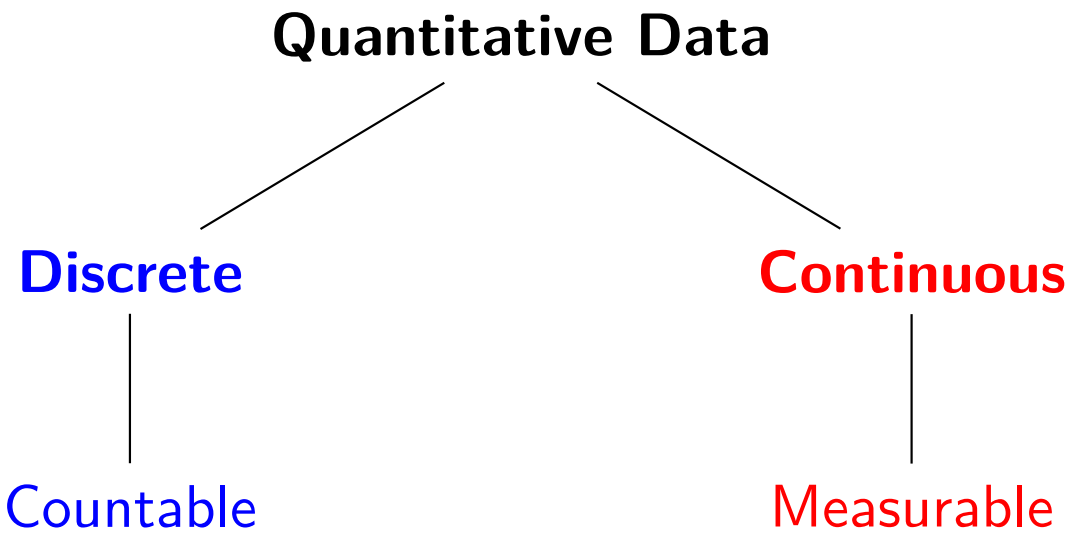

Continuous

Example 2

Determine whether each quantiative variable is discrete or continuous.

(a) Number of free throws made.

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(a) Number of free throws made. Discrete

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Example 2

Determine whether each quantiative variable is discrete or continuous.

(a) Number of free throws made. Discrete

(b) Time it takes to finish a book. Continuous

(c) Water pressure from a fire hose. Continuous

(d) The amount of money in a retirement account. Discrete

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