Section 1.2: Types of Variables

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definitions:

variable ≡ characteristic that either

(1) changes over time
(2) changes for different individuals or objects under consideration

examples of (1): height of an individual tree measured over a period of 10 years

(2): at a particular time, heights of all trees in a certain area

experimental unit ≡ a single individual or object on which a variable is measured

univariate data - result of a single variable measured on a single experimental unit

bivariate - two variables

multivariate - more than two

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qualitative variables - measure is a quality or characteristic

→ does not result in a numerical value

(resulting measurement often called categorical data)

examples: political party
model of car
name of program you're in

quantitative variables - measure is a numerical quantity

examples: height of a tree
number of students in a class

two types:

discrete: can only assume finite or countable number of values

2.5 not allowed

finite: can only be 0, 5, or 8
countable: can only be 0, 1, 2, 3, ...

2.5 not allowed

- can't always go halfway between any two measurements

continuous - can be any real number

height, density, voltage,

note: what kind of variable is shoe size?

quantitative, discrete

7, 7½, 8, 8½, ...

summary: