⚠ Lagunita is retiring and will shut down at 12 noon Pacific Time on March 31, 2020. A few courses may be open for self-enrollment for a limited time. We will continue to offer courses on other online learning platforms; visit http://online.stanford.edu.

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Inference For One Variable

As we mentioned at the end of the introduction, the first part of Inference will deal with inference for one variable. Recall that in the Exploratory Data Analysis (EDA) sections, when we learned about summarizing the data obtained from one variable (in the Examining Distributions module) we distinguished between two cases; categorical data and quantitative data.

We will make a similar distinction here in Inference. In EDA, the type of variable determined the displays and numerical measures we used to summarize the data. In Inference, the type of variable of interest (categorical or quantitative) will determine what population parameter we are going to do inference for.

- When the variable of interest is **categorical**, the population parameter that we will infer about is the **population proportion (p)** associated with that variable. For example, if we are interested in studying opinions about the death penalty among U.S. adults, and thus our variable of interest is "death penalty (in favor/against)," we'll choose a sample of U.S. adults and use the collected data to make an inference about p—the proportion of U.S. adults who support the death penalty.

- When the variable of interest is **quantitative**, the population parameter that we infer about is the **population mean (μ)** associated with that variable. For example, if we are interested in studying the annual salaries in the population of teachers in a certain state, we'll choose a sample from that population and use the collected salary data to make an inference about μ, the mean annual salary of all teachers in that state.