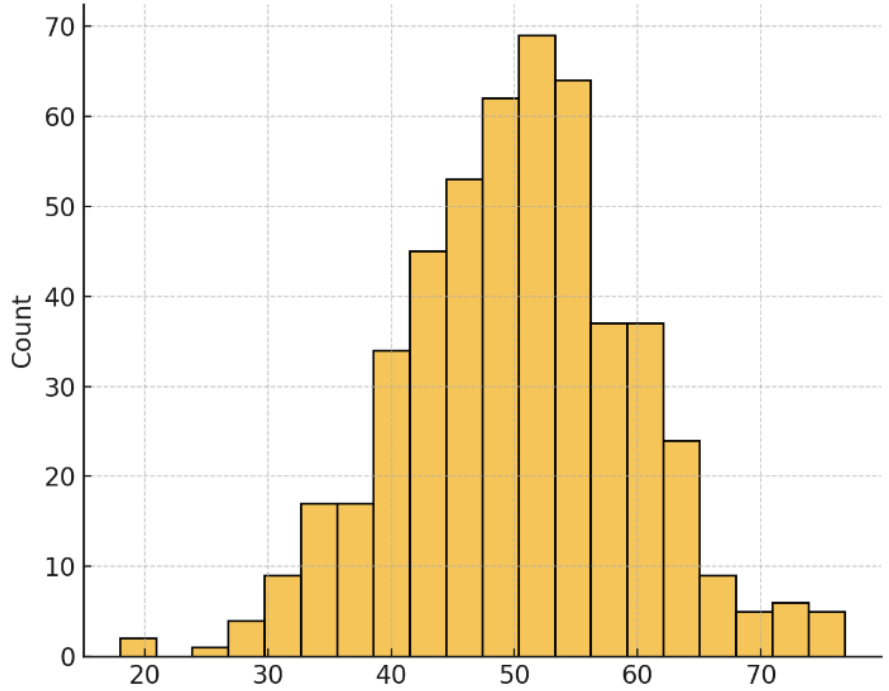
Welcome to STA130 TUT!

A


Count
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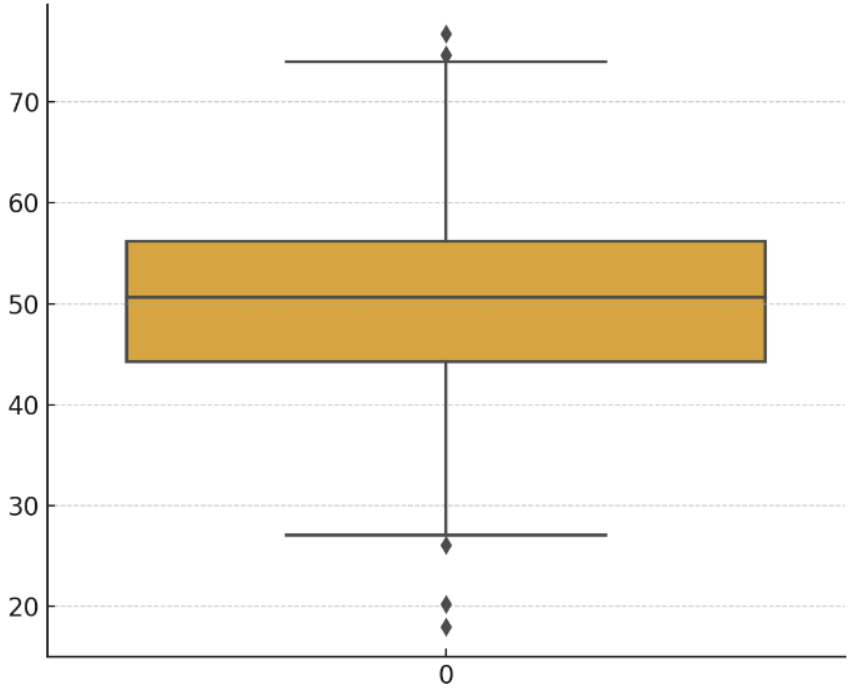
C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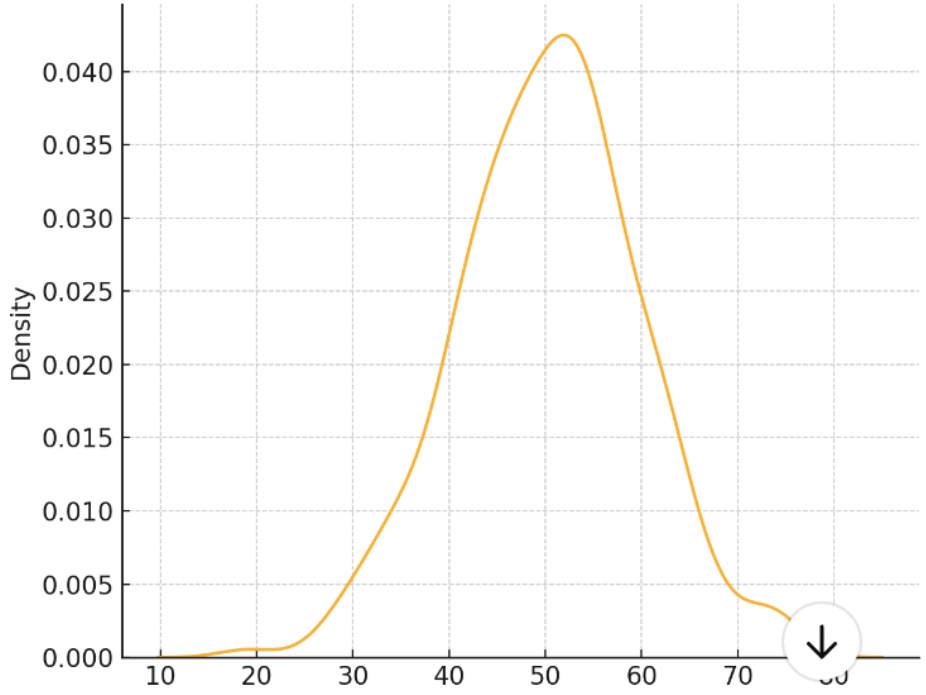
B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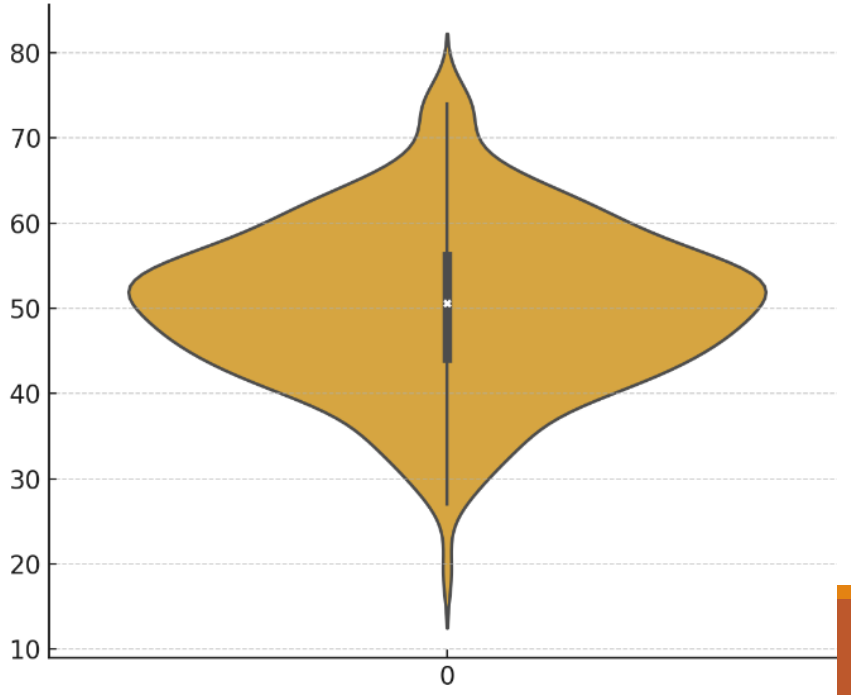
D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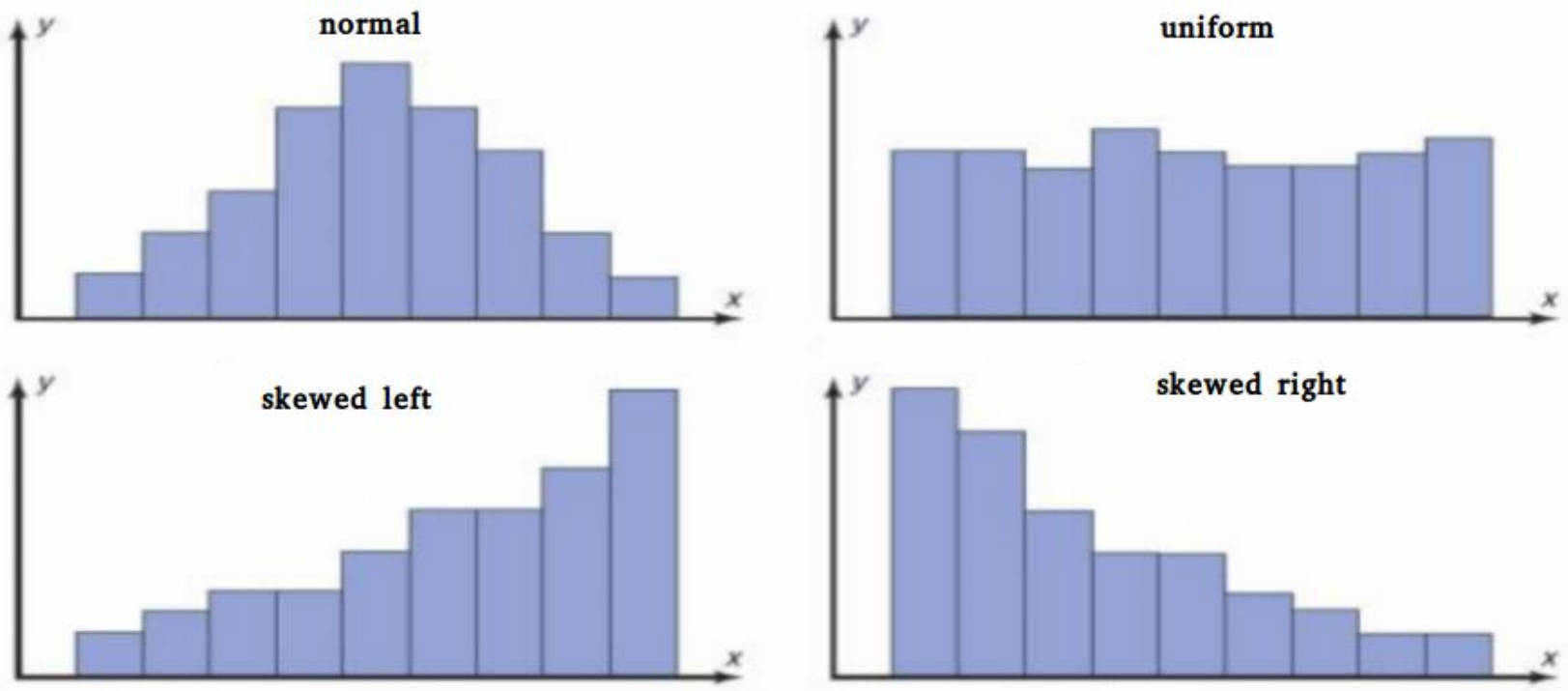
Communication Activity #1

Break into 4 groups and spend 5 minutes to decide which student analysis your group would like to present to everyone (from HW 3 Q6).

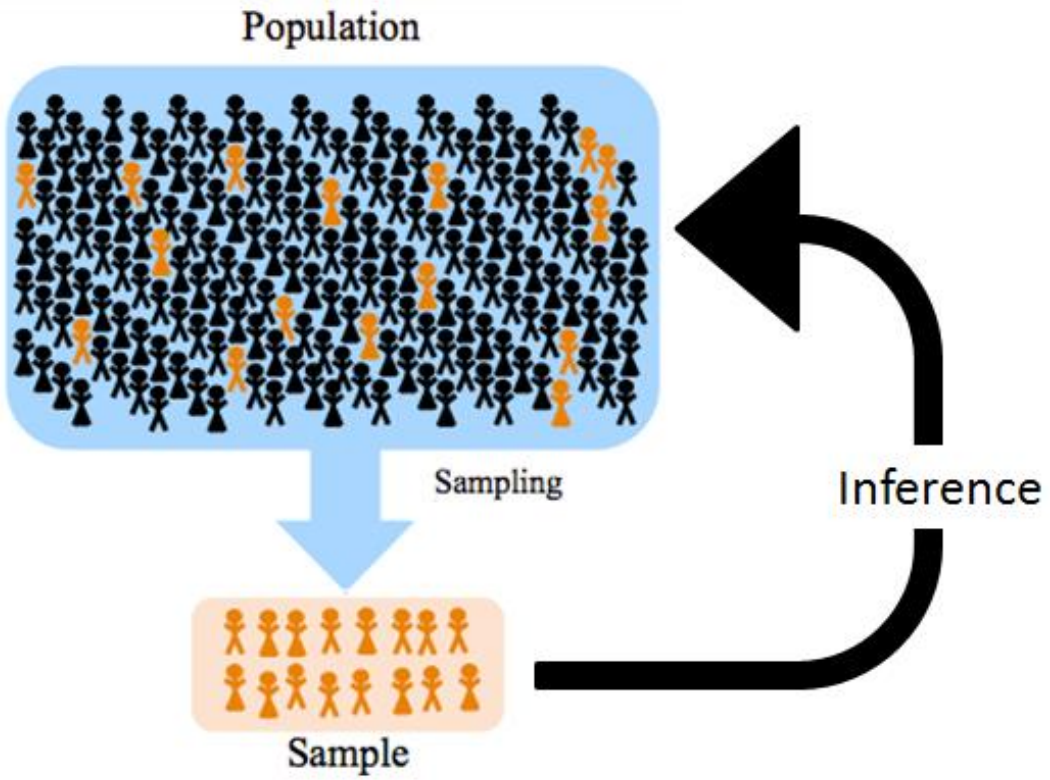
Each group will have 5 minutes to present their data analysis to **me** by presenting the notebook with analysis.

What is Distribution?

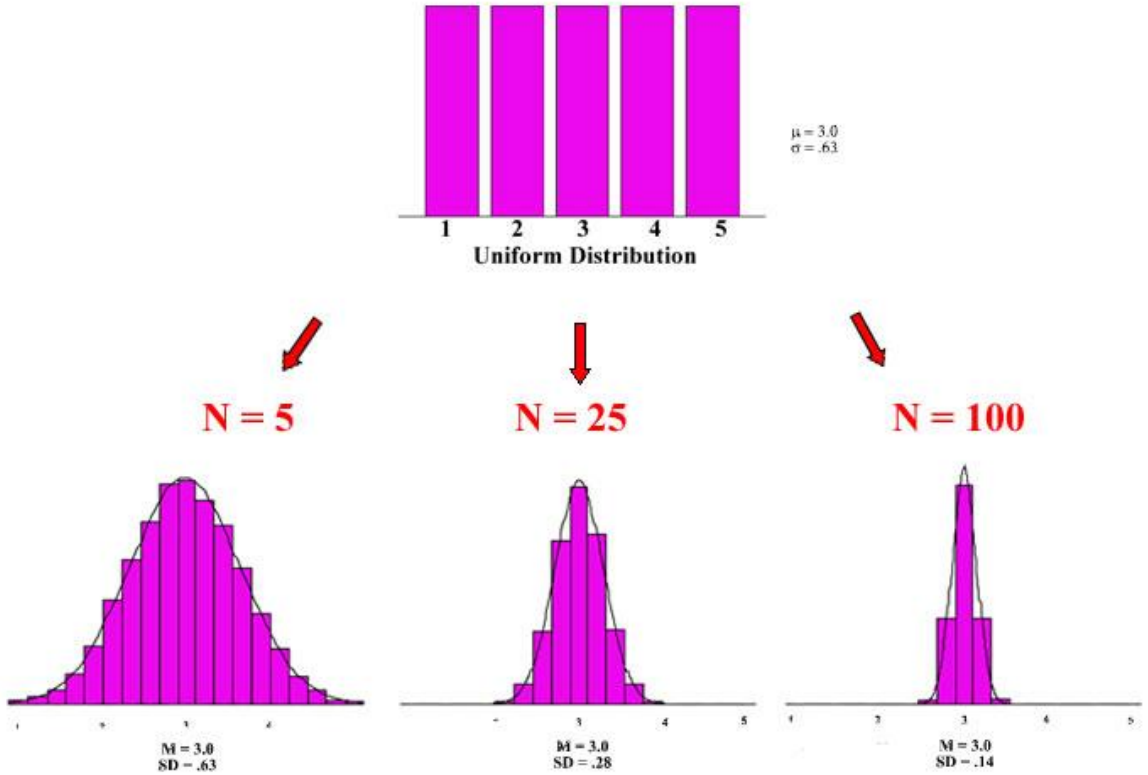
The way in which the values of a random variable are spread or allocated



Population vs Sample



Sampling Distribution



Standard Deviation vs Standard Error

Standard deviation: the amount of variation or dispersion of individual data points within a single sample. It shows how spread out the data points are around the sample mean.

Standard error: how much variability there is in the sample mean as an estimate of the population mean

$$s = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$$

- x_i = each individual data point.
- $\bar{x}$ = sample mean.
- n = sample size.

$$SE = \frac{s}{\sqrt{n}}$$

How number of samples (n) drives SE?

The standard error of the mean *decreases as the sample size increases*, indicating more "precise" estimates with larger samples.

$$SE = \frac{s}{\sqrt{n}}$$