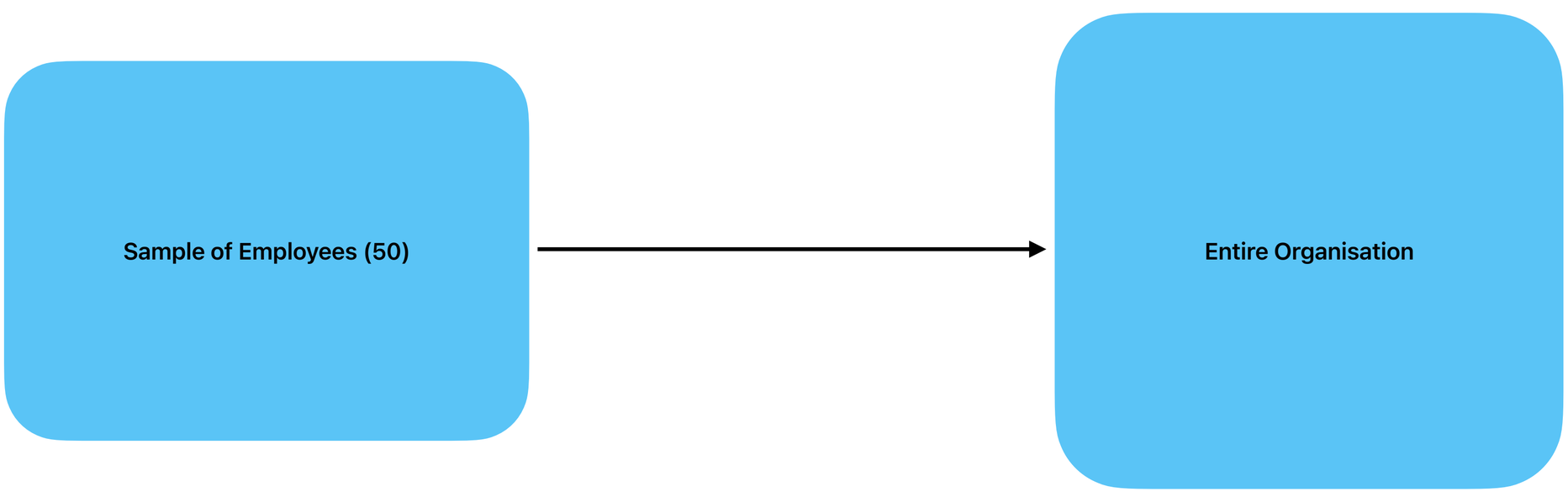
Confidence Interval
Estimate the average height of employees in your office



- Collect Data
- Calculate the Statistics (mean & std)
- Build the Interval - (range of values which we pretty sure that our true average height of employees in the organisation
- Level of Confidence (0.95)
- Interpretation: I am 95% confident that true average height of all the employees is between 150 cm to 180 cm

Margin of Error
Estimate the average height of employees in your office

Measure of how much the results of an experiment might vary due to randomness or chance.

Height of the sample - 165 cm

Margin of error - How much percentage of the Employee's height would vary from 165 cm height result from sample

- Collect Data
- Calculate the MoE (using sample data & CI)
- Interpretation: Based on our sample we estimate that avg height of employee is 165 cm, with margin of error of +-5%
- True values - 165+- 5%

One Tailed Test

- Lower tail test.
- $H_1: \mu < .....$

Reject H_0 if the value of test statistic is too small

- Upper tail test.
- $H_1: \mu > .....$

Reject H_0 if the value of test statistic is too large

Two Tailed Test

- Two tail test.
- $H_1: \mu \neq .....$

Reject H_0 if the value of test statistic is either too small or too large

One Tailed Test - Frame Null and Alternate Hypothesis using inequalities

H0 : pop_mean >= x
HA: pop_mean < x

Two Tailed Test - Frame Null and Alternate Hypothesis using equality and not equal

H0 : pop_mean = x
HA: pop_mean NE x