Learning Outcomes

- **Make an inference about a population from a sample of data**
- **Develop an intuition about point estimates and interval estimates**
- **Learn how to test your assumptions about data using statistical methods**
- **Understand the different errors involved in testing assumptions**

Prerequisites for the Student

- **Making Inference from Data - Go through the concept and solve the tasks and assessments.**

Student Activities

- **Discuss with the Mentor what you have learned.**
- **Overview of Making Inference from Data**
  - Statistical Estimation
  - Test of Hypothesis
- **Show them an introductory video:https://www.youtube.com/watch?v=sxYrzzy3cq8**
- **We have a dataset which contains a list of Monthly Home Sale Prices in a market. Since we are looking at all of the selling prices within the market. Calculate the population mean for the given sale prices.**
  $250000,$175000,$325000,$185000,$450000,$275000,$255000,$320000,$310000,$120000, $280000
  - Calculate the sample mean for first 3 sale prices
  - Also, calculate the sample mean for the next three sale prices
  - And compare sample means with the population mean.
  - What if we calculate the sample mean multiple times, will the average of all sample means be closer to the population mean?
- **Practice problems on Sample Mean & Population Mean, Confidence Interval, Hypothesis testing**
  Refer the GitHub repo for problems
- **Quiz on Making Inference from Data.**
- **Questions and Discussion on doubts - AMA**

Next Session Preview

- **Concept - Make your first Prediction with Linear Regression**
- **Key topics to be highlighted - highlight where they would need to spend more time and importance w.r.t Data Science.**
  - The motivation for Linear Regression
  - Assumptions for Linear Regression
  - Ordinary Least Squares method
  - Error metrics like RMSE, R-squared, MAE