

# Data Analysis using Python

## A. Installation python, Jupyter notebook.

## B. Data Fundamentals

- ✓ Data Properties
- ✓ Programming Basic
- ✓ Data Entry & Data Cleaning Practices
- ✓ Handling different formats of database (.xlsx, csv, sql, spss, stata...)



## C. Data Processing

- ✓ Import Export , Load Data
- ✓ If Else operation
- ✓ CURD(Create, Update, Read & Delete) Operations.
- ✓ Identify duplicate and remove.
- ✓ Merge & Append, join dataset.
- ✓ Sorting
- ✓ Data Comparison
- ✓ Selection and filter features

## D. Data Analysis & Interpretations

### D.1 Calculations

- ✓ Calculation and apply formula
- ✓ Recode the cases
- ✓ Process string/text data
- ✓ Data Categorization
- ✓ Working with date & time dataset

### D.2 Descriptive Statistics

- ✓ Generate frequencies
- ✓ Calculate descriptive statistics (mean, median, sd....)
- ✓ Generate one/multi way pivot tables.
- ✓ Count, Percentage and other customized features.

### D.3 Statistical Tests

- ✓ Concepts on Statistics and appropriate test selection
- ✓ T-test (one/Independent/ Paired sample)
- ✓ ANOVA
- ✓ Chi-square test
- ✓ Correlation
- ✓ Regression
- ✓ Reliability Analysis

## E. Data Visualization

- ✓ Data Visualization concepts
- ✓ Types of Graphs and Charts
- ✓ Generate appropriate visualization
- ✓ Editing
- ✓ Export

## G. Project Work

## H. Certification and Closing ceremony