

# DATA ANALYST

## Excel

- Basics of Excel
  - ✓ Data entering
  - ✓ Conditional Formatting
  - ✓ Aggregations
  - ✓ Data sorting and Filtering techniques
  - ✓ Cleaning data with text functions
  - ✓ Pivot tables in excel
  - ✓ Lookup functions
  - ✓ Data Visualization

## 1. Statistics

- Measures of central tendency and dispersion
  - ✓ Mean
  - ✓ Median
  - ✓ Mode
  - ✓ Variance
  - ✓ Standard Deviation
- Sampling and Sampling distributions
  - ✓ Random sampling
  - ✓ Non random sampling
  - ✓ Design of experiments
  - ✓ Sampling distribution
- Probability introductory ideas
  - ✓ Basic Terminology in Probability
  - ✓ Different types of Probability
  - ✓ Different types of probability distribution
- Hypothetical testing
  - ✓ One sample T test
  - ✓ Two sample T test
  - ✓ ANOVA
  - ✓ Chi Square test

## 2. Python

- Introduction and Advantages of python
- How to install python
- Programming modes in Python
  - ✓ Interactive Mode
  - ✓ Scripting Mode
  - ✓ How to execute / run python script
- What is identifier
- What is literal
- What is variable
- Rules to define a Variable
  - ✓ No special characters are allowed except underscore (`_`)
  - ✓ Must start with alphabet or underscore only.
  - ✓ Should not start with digit.
  - ✓ Should not use reserved / built-in keywords. `help("keywords")` ==> gives
  - ✓ the list of all
  - ✓ Built-in keywords
  - ✓ Memory allocation
  - ✓ different values for different variable
  - ✓ same value for different variable
  - ✓ built-in function "id ()" to know the memory location
- Data types
  - ✓ Non-sequential Data types
    - ❖ Int
    - ❖ Float
    - ❖ Complex
    - ❖ Boolean (Bool)
    - ❖ Sequential Data types
  - ✓ List
  - ✓ Set
  - ✓ Tuple
  - ✓ Dict
  - ✓ String (Str)
  - ✓ Frozen set
  - ✓ Ordered Dict
- Non-Sequential Data types
- Type casting
- Comments in python

- Sequential Data types- String
- Operators
- Conditional statements
- Switch case statement
- range and x range (python2.7) functions
- Iterative statements / Loops
- Transfer / Control statements
- Sequential Data types
- What is mutable data type and What is im-mutable data type
  - ✓ List
  - ✓ Tuple
  - ✓ Set
  - ✓ Dict
  - ✓ String
- Functions
  - ✓ How to define a function
  - ✓ How to call a function
  - ✓ Global variable and Local Variable
  - ✓ Types of arguments
  - ✓ How to return value a function
  - ✓ inner functions/nested functions
  - ✓ Generator object(yield)
  - ✓ Recursive function
  - ✓ lambda function
  - ✓ map, filter, reduce
- Global keyword
- Higher order functions / nested functions
- Decorators
- Working with files
  - ✓ Working with Text File
  - ✓ Working with CSV File
  - ✓ Working with JSON Data
- How to connect to databases using python?

### **Advanced – OOP (Object Oriented Programming)**

- What is a class and object?
- How to define class and create object for the class?
- What is a constructor and how to create it?
- Encapsulation
- Access Specifiers and modifiers
- Abstraction

- Polymorphism
- Inheritance
- Exception Handling

## Python Modules

- What is a module and package?
- How to create a module and
- How to install a module,
- How to import a module
- How to uninstall a module
- Data processing using pandas, NumPy
- Data visualization using matplotlib, Seaborn

## 3. Tableau

- Introduction to Tableau
- Different Tableau Products in market
- Connecting Tableau to data source
  - ✓ Live
  - ✓ Extract
- Meta data management
- Combing different data sources
  - ✓ Data blending
  - ✓ Joins
  - ✓ Data relationship
  - ✓ Union
- Dimensions and Measures
- Hierarchy in Tableau
- Different filters in Tableau
- Table calculations and expressions
- LOD Expressions
  - ✓ Include LOD
  - ✓ Exclude LOD
  - ✓ Fixed LOD
- Tableau Charts and Graphs
- Creating dashboards