

Data Analytics

Statistics

- Data Types, Measure Of central tendency, Measures of Dispersion
- Graphical Techniques, Skewness & Kurtosis, Box Plot
- Descriptive Stats
- Random Variable, Probability, Probability Distribution, Normal Distribution, SND, **Expected Value**
- Sampling Funnel, Sampling Variation, Central Limit Theorem, Confidence interval
- Introduction to Hypothesis Testing
- Hypothesis Testing (2 proportion test, 2 t sample t test)
- Anova and Chisquare
- Data Cleaning
- Imputation Techniques
- Scatter Diagram
- Correlation Analysis

Power BI

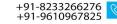
- Power BI Introduction
- Power BI Components
- Getting Data using Power BI
- Power BI Transformations
- Creating Data Models
- Power BI Charts
- Power BI Filters
- Power BI Visualizations
- Exploring Data in Power BI
- Power BI and Excel
- Power BI Publishing and sharing
- Power BI Integration with Data Sources

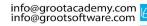
Data Analysis Expressions (DAX)

- ➤ Math & Stats
- SUMX & Calculate Function
- > Related Function
- > All Function











- Aggregate Functions
- Date Functions
- > Logical Functions
- > String Functions
- > Filter Functions
- > Trigonometric Functions
- > Time Intelligence Functions

Reports – Objects & Charts, Formatting Charts

- Report Interactions
- Bookmarks o Managing Roles \triangleright
- Custom Visuals
- Desktop vs Phone Layout
- > Artificial Intelligence Visuals Key Influencers

Tableau

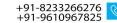
What is Data Visualization

- Advantages & Disadvantages of visualizations
- Why Data visualization Important
- Understanding data
- Different data visualizations
- Tableau –Data Visualization Tool
- Introduction to Tableau
 - What is Tableau?
 - > Overview Of Tableau Tool (Servers, data, visualizations)
 - > Tableau Architecture
 - Advantages & Disadvantages

Different Products of Tableau

- > Tableau Desktop
- > Tableau Public
- > Tableau Prep
- > Tableau Online
- > Tableau Server
- Tableau Analytics



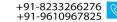


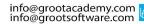




- Extensions in Tableau
- Features of Tableau Desktop
- Tableau-Joins and Data Pane
- Tableau Data Pane
- Pivot Table and Split Tables in Tableau
- In built Charts in Tableau
- ➤ Basic Charts
- > Text Tables
- Highlight Tables
- > Bar charts
- Stacked Bar
- ➤ Line Graphs
- Dual axis
- > Pie chart etc.
- Maps in Tableau
- Data Interpretation
- Creating Calculated Fields
- Attribute functions
- Quick table calculations
- Creation of calculated fields
- Aggregate and disaggregate functions etc.
- Logical Functions
- Case-If Function
- Understanding Case Statements
- > Applications of case statements
- ZN Function
- Ad-Hoc Calculations
- Understanding different string functions etc.
- Pre-Defined Analytics
 - > Expressions , Functions, Groups, Filters, etc
 - Dashboards Hands-On in Tableau
 - Understanding concept of Dashboards
 - > Building Interactive dashboards
 - > Dashboard actions, etc.
- Animated Visualization









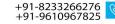
- **Tools for Sharing Information**
- **Publishing our Workbooks in Tableau Server**

Microsoft Excel

- Getting Started with Excel
- Workbook Protection & Security
- Data Formats. Data Formatting & Alignment
- Hands on Practice on Short Keys
- Conditional Formatting
- Advanced Conditional Formatting techniques
- Graphs & Charts
- Advanced Charts Waterfall/ Bridge Graphs
- Data Tools- Filtering, Sorting, Remove Duplicates, Data Validation, Grouping
- Absolute and Relative Referencing Concepts
- Case Studies on Absolute and Relative Referencing
- Specialized Functions/Formulas
- Lookup Functions
- Vlookup & its Limitations, Hlookup, Index Match, Hyperlink, Indirect, Offset,
- Transpose
- Vlookup Case Studies:
- Vlookup General Problems, Vlookup with Match Function, Vlookup using (*)
- problems, Vlookup using Running Countif, Nested Vlookup
- Text Formulas -
 - Char, Concatenate, Exact, Find, Left, Right, Proper, Search, Mid, Upper
- Logical Formulas -
 - > o And, If, IfError, Not, OR, True
- **Date Time Formulas -**
 - > o Day, Date, Hour, Minute, Second, Time, Month, Year, Today, Weekday, Now
- Mathematical Formulas -
 - > o Sum, Sumif, Sumifs, Count, Countif, Mod. Product, Sumproduct, Roundup, Array
- **Formulas**
- **Pivot Reports/ Dashboard**
 - Pivot Table & Pivot Charts
 - > Waterfall Mode

SQL

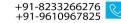


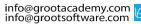




- **Databases**
- Introduction to DBMS
- **Popular DBMS Software**
- Concepts of RDBMS
- > Tables
- > Tuples
- Attributes
- Normalization
- First Normal Form
- Second Normal Form
- Third Normal Form
- **NoSQL Databases**
- Types of NOSQL
- Comparison
- Types of SQL Commands
- **Data Definition Language**
- Create, Drop, Truncate, Alter and Rename Objects
- **Data Query Language**
- > Select Statements
- **Data Manipulation Language**
- DCL and TCL
- > Grant, Revoke and transaction statements
- SQL Data Types
- ➤ o Numeric, Date and TIme, LOB Types
- **DML Commands**
 - > Insert, Update and Delete Statements
- **DDL Commands**
 - > o Create and Drop Databases
- **Types of Constraints**
- Relational Integrity Constraints
- Key Constraints
- Domain Constraints





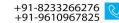


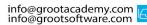


- Referential Integrity
- ➤ Primary and Foreign Keys
- Application of Indexes
- Checking Constraints
- **Alter Tables**
- **SQL Transactions**
- Examples
- ACID Properties
- TCL Statements
 - > Start, Commit and Rollback Statements
 - **Auto Commit**
 - **SavePoints**
 - Identifier
 - Rollback and Release
 - **Database Objects**
 - **Tables**
 - Creating, Altering and dropping tables
 - Sequences
 - Auto Increments
 - > Re-Sequencing
 - **Views**
 - Advantages
 - Creating and Dropping Views
 - Indexes
 - > Types of Indexes
 - > B-Tree and Hash Indexes
 - Creating and dropping Indexes
 - **Stored Objects**
 - Types of Stored Objects
 - Stored Procedures
 - > Create, call and drop stored procedures
 - ➤ Using Variables o Handling Exceptions
 - > Named Errors and Resignals

Programming









- If-then-Else and Case Statements
- Loops
- Repeat and Leave Statements
- Cursors
- **Operators and Functions**
- **Joining Tables**
- > o Inner Join, Left Join, Right join
- **Advantages of Procedures**
- **Database Triggers Accessing Database From R and Python**
- Triggers
- > Database Triggers
- > Data Definition Language (DDL) Triggers
- Data Manipulation Language (DML) Triggers
- > CLR Triggers
- > Logon Triggers
- ➤ Triggers v/s Stored Procedures
- Accessing Database from R
- Install R Packages
- Configuration Information

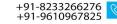
Python Database Access

- Databases Supported
- > Libraries
- > To Read Operations
- > On Insert, Update and Delete
- > Performing Transactions
- > Handling Errors

Python

- Installation of Python
- Python Datatypes & Python Loops
- Python Strings
- Python Lists
- Python Tuples









- Python Dictionary
- Python Date & Time
- Python Operators
- Python Functions
- Python I/O Functions
- Debugging & Python Database Access MySQL
- Working with CSV & Excel Files
- Advanced Data Types
- Python Comprehensions
- > List Comprehensions
- Set Comprehensions
- Dictionary Comprehensions
- > Set Comprehensions
- Numpy
- Pandas
- Data Analysis & Visualization in Python
- Web Scraping
- Email Automation



