DATA ANALYTICS

Introduction to Data Analytics

- What is Data Analytics?
- Importance of Data Analytics
- Types of Data
- Types of Statistical Analysis
- Steps to obtain a Data Analytics solution
- Business Understanding
- Data Understanding
- Data Collection
- Data Preparation
- Data Modelling
- Deployment
- Use Cases

Generative AI for Data Analytics

- Understanding Generative AI Basics
- Introduction to Generative AI
- Introduction to AI Tools (ChatGPT etc.,)
- Prompt Engineering Basics
- Applications of Generative AI
- Ethical Considerations in AI

Python for Data Analytics

- Introduction to Python
- Python Installation
- Google Colab
- Variables & Keywords
- Datatypes Operators
- Lists
- Tuples
- Sets
- Dictionaries
- Loops & Iteration
- Functions
- Map Reduce Filter
- File Handling
- Control Structures
- OOPS
- NumPy
- Pandas
- Data Visualization
- Matplotlib
- Seaborn

Statistics for Data Analytics

- Types of Data
- Descriptive Stats
- Inferential Stats
- Qualitative Data
- Quantitative Data
- Sampling Techniques

DATA ANALYTICS

- Population vs Sample
- Why Sampling is important
- Types of Sampling
- Cluster Random Sampling
- Probability Sampling
- Non probability sampling
- Population Sampling
- Why n-1 and not n
- Descriptive Analytics
- Measures of Central Tendency
- Mean
- Median
- Mode
- Measures of Dispersion
- Range
- IQR
- Variance Standard Deviation
- Mean Deviation
- Probability
- Addition Rule
- Independent Events
- Cumulative Probability
- Conditional Probability
- Bayes Theorem(s)
- Probability Distribution
- Uniform Distribution
- Binomial Distribution
- Poisson Distribution
- Normal Distribution(s)
- Skewness
- Kurtosis
- Calculating Probability with Z-score for Normal Distribution
- Covariance & Correlation
- Covariance
- Correlation
- Covariance VS Correlation
- Hypothesis Testing
- Tailed Tests
- p-value
- Types of Test
- T Test
- Z Test
- ANOVA
- Chi Square Test

Exploratory Data Analysis

- What is EDA
- Visualization
- Steps involved in EDA (Data Sourcing & Cleaning)
- Handle Missing Values
- Feature Scaling
- Standardization & Normalization Example
- Outlier Treatment
- Invalid Data
- Types of Data

DATA ANALYTICS

- Types of Analysis
- Univariate Analysis
- Bivariate Analysis
- Multivariate Analysis
- Numerical Analysis
- Analysis Practice
- Derived Metrics
- Feature Binning
- Feature Encoding
- Case Study
- Data Exploration
- Data Cleaning
- Univariate Analysis
- Bivariate Analysis
- EDA Report

SQL for Data Analytics

- Introduction to SQL
- SQL Installation
- Data Architecture - File server vs client server
- Constraints in SQL
- Table Basics – DDLs, DQLs & DMLs
- Joins
- Data Import Export
- Aggregation Functions
- String functions
- Date Time Functions
- Regular Expressions
- Nested Queries
- Views
- Stored Procedures
- Windows Function
- SQL Python connectivity

Microsoft Excel for Data Analytics

- Pre-defined Functions
- Datetime Functions
- String Functions
- Mathematical Functions
- Lookup (Hlookup, Vlookup)
- Logical & Error Functions
- Statistical Functions
- Images in Excel
- Excel Formatting
- Custom Formatting
- Conditional Formatting
- Charts in Excel
- Data Analysis using Excel
- Pivot Tables
- Dashboarding in Excel

DATA ANALYTICS

ETL Basics

- What is ETL
- ETL Tools
- What is Data Warehouse
- Benefits of Data Warehouse
- Data Warehouse Structure
- Why do we need Staging
- What are Data Marts
- Data Lake
- Data lake vs Data Warehouse
- Elements of Data lake

Microsoft Power BI

- Introduction to Power BI
- Power BI Desktop
- Power BI Services
- Power Query Editor
- Data Profiling
- Group by Dialog
- Applied Steps
- Append vs Merge
- Power BI Visuals
- Power BI Charts
- Introduction to DAX
- Implicit Measures
- DAX Formula
- Basic DAX Functions
- Date Functions
- CALENDAR Functions
- Contexts Row vs Filter
- CALCULATE & FILTER
- IF ELSE Conditions
- Time Intelligence Functions
- X vs Non X Functions
- Tool Tips & Drill Throughs
- Power BI Relationships
- KPIs in Power BI
- Administration in Power BI
- Static Row Level Security
- Dynamic Row Level Security
- Dataflows in Power BI
- Formatting

Microsoft Fabric & Integration with Power BI

- Introduction
- Creating Organization Account
- Creating Workspace in Fabric
- Getting Started with Lakehouse
- Lakehouse Architecture & Practice
- SQL DB Integration
- Fabric Dataflows Integration
- Introduction to KQL (Kusto Query Language)

- KQL Practices
- KQL Integration with Microsoft Power BI

Enabling Copilot on Microsoft Fabric and Power BI

- Enable Copilot on Fabric
- Getting ahead with Copilot Settings
- Features of Copilot
- Calculating Measures Description using Copilot
- Write DAX using Copilot
- Edit a DAX using Copilot
- Learn DAX by leveraging the DAX Query View
- Leverage Copilot Suggested features to create a dashboard
- Create a narrative with Copilot
- Chat with Copilot

Machine Learning

- Introduction to Machine Learning
- Linear and Logistics Regression
- Predictive Analysis

Predictive Analysis

- Introduction to Predictive Analysis
- Predictive Analytics Process
- How model works
- Why Predictive Analytics
- Applications
- What is Machine Learning
- Types Of Machine Learning
- Classification
- KNN
- KNN Excel example
- Classification Practical
- KNN Code
- Decision Tree Example
- Decision Tree Code
- Random Forest
- Random Forest Code
- Boosting
- Boosting Code
- Regression
- Clustering
- Time Series
- Time Series Forecasting Code

Projects – upto 4 real time projects scenarios to meet the company requirements

Interview Questions & Answers

Resume Preparation
Mock Interviews