Python, Power BI and SQL

Syllabus

Modul-1 : Python

1: Introduction to Python

- Installation and Working with Python
- Introduction, why python?
- Versions of Python
- SET PATH
- PEP 8 standards
- Coding conventions
- Understanding Python variables
- Identifier rules
- Literals
- Keywords
- IDLE and information
- Different ways of execution
- Scripting
- Python Operators
- Understanding python blocks
- Indentation, comments, docstring
- Type casting, Unicode etc.

2: Python Data Types

- Mutable and Immutable data types
- Declaring and using Numeric data types: int, float, complex.
- Using string data type and string operations

- Defining list and list slicing, its methods
- Use of Tuple data type

3: Python Program Flow Control

- Conditional blocks using if, else and elif
- Nested if, elif ladder
- Simple for loops in python
- For loop using range, string, list and dictionaries.
- Use of while loops in python
- Loop manipulation using: pass, continue, break
- Programming using Python conditional and loops block.
- Different case studies

4: Python String, List, set and Dictionary Manipulations

- Building blocks of python programs
- Understanding string built-in methods
- List manipulation using built-in methods
- Tuple operation
- Set: its methods and manipulation
- Dictionary: its methods and manipulation
- Functions
- Modules and Packages

5: Fundamentals of Object orientation:

- What is OOP
- Class
- Reference variable
- Types of variables
- Types of Methods
- Importing Class
- Constructor
- OOP's Concepts: Inheritance, Encapsulation, Polymorphism, Abstraction
- File handling in detail: txt, bin, csv

Modul-2 : Power BI

6: Fundamentals of Power BI:

- Before Power Bi which tools are preferred by companies
- Components of Power BI
- Basic Flow of Power BI with example
- Building Blocks of Power BI
- Power BI desktop
- Connect data sources in Power BI
- Data model and Report with example
- Power BI Ribban overview
- Filter Pane Visualization Pane and Data Pane details

7: Transform data

- Introduction of Power Query, Power Pivot and Power view
- Power Query editor tool Overview and real time example

- Keep rows, Remove rows,
- Duplicate,
- Split column,
- Datatypes,
- Append, Merge

8: Relationships in Power BI

- Introductions and Types
- Dim and Fact tables connectivity in Power BI

9: Advance Power BI

- Connectivity modes in Power BI using SQL
- BookMark (overview and realtime example)
- Tooltip (overview and realtime example)
- Filters in Power BI (Types and examples)
- Drill through (overview and example)
- Slicer (overview and realtime example)
- Edit interaction (overview and example)
- Sync slicer (overview and example)
- Hierarchy in Power BI (overview and realtime example)
- Conditional Formatting
- Drillup and DrillDown (overview and realtime example)
- RLS overview

10: DAX

- Overview

- Simple DAX formulas and example (sum, Sumx,Count,Countx, min, Max,avg, CountRows,selectedvalue,format etc….)
- Advance level DAX with example (Calcualte, UseRelationship, SamePeriodlastyear, variable, Previousmonth, TotalYTD etc….)
- Time intellignce functions - DAX (Day, Date, Today, DateDiff)

11: Power BI Service

- Overview and license part
- Workspace overview and real time usage
- Dashboard overview and real time usage
- RLS services overview and example
- Gateway overview and types
- Data source and Dataset in Power BI service
- Dataset Refresh overview and Scheduled refresh
- Publish report and Dashboard

12: Phase

- Power Bi Report Design,
- Visualization,
- Properties,
- Analytics,
- formatting

Modul-3 : SQL

13: Introduction

- Database basics
- Types of databases
- Download MySQL database
- Creating first database

13: SQL Types

- DDL, DML, DQL, DCL, DTxL
- Create first table
- Insert data into table
- Fetch and filter the data from table
- SQL Data types
- Operators in SQL(AND, OR, BETWEEN)

14. SQL imp Concepts

- SQL Constrains
- SQL Clauses
- SQL in-built Functions
- SQL Injection
- SQL Prepared Statements
- SQL Stored Procedures
- Primary Key and Foreign Key

17. Advance SQL –

- Fetching data from multiple tables
- SQL Joins
- Indexing in SQL
- Complex queries
- Practices and Examples.