Python and SQL for Data Science

Syllabus

Duration: 60 Hours

1. **Introduction**
   - **Why Python Programming**
   - **Course Overview**
   - **Data Types and Operators**
   - **Arithmetic Operators**
   - **Variables and Assignment Operators**
   - **Integers and Floats**
   - **Booleans, Comparison Operators, and Logical Operators**
   - **Strings**
   - **Type and Type Conversion**
   - **Lists and Membership Operators**
   - **List Methods, Tuples, Sets**
   - **Dictionaries and Identity Operators**
   - **Compound Data Structure**
   - **Discussion and Doubt Clear**
   - **Assignment and Test**

2. **Control Flow**
   - **Conditional statements**
   - **Iteration/looping statements**
   - **Break, Continue**
   - **Zip and Enumerate**
   - **Discussion and Doubt Clear**
   - **Assignment and Test**

3. **Function**
   - **Defining Functions, Variable Scope**
   - **Documentation, Lambda Expressions**
   - **Iterators and Generators**

4. **Scripting**
   - **Python Installation**
   - **Scripting with Raw Input**
   - **Errors and Exceptions**
   - **Reading and Writing Files, Importing Local Scripts**
   - **The Standard Library, Techniques for Importing Modules**
   - **Discussion and Doubt Clear with Assignment and Test**

5. NumPy

- **Introduction to NumPy, Why Use NumPy?**
- **Creating and Saving NumPy ndarrays**
- **Accessing, Deleting, and Inserting Elements Into ndarrays**
- **Slicing ndarrays**
- **Boolean Indexing, Set Operations, and Sorting**
- **Manipulating ndarrays**
- **Discussion and Doubt Clear with Assignment and test**

6. Pandas

- **Introduction to Pandas, Why Use Pandas?**
- **Creating Pandas Series and DataFrames, Accessing and Deleting Elements in Pandas Series, DataFrames**
- **Arithmetic Operations on Pandas Series**
- **Manipulate a Series, DataFrame**
- **Dealing with NaN**
- **Discussion and Doubt Clear with Assignment and Test**

7. Introduction to SQL

- **Basic SQL**
- **SQL Joins**
- **SQL Aggregations**
- **SQL Subqueries & Temporary Tables**
- **SQL Data Cleaning**
- **SQL Window Functions**
- **SQL Advanced JOINS & Performance Tuning**
- **Discussion and Doubt Clear with Assignment and Test**

8. Git & Github

- **What is Version Control?**
- **Create A Git Repo**
- **Review a Repo's History**
- **Add Commits To A Repo**
- **Tagging, Branching, and Merging**
- **Undoing Changes**
- **Working On Another Developer's Repository**
- **Staying In Sync With A Remote Repository**

9. Project Work

10. Placement Assistance Sessions

- **Mock Interviews**
- **GDs**
- **Preplacement Talks**

- **Industry Exposer Sessions**

11. Internship

*In Assignment there is Mini Projects.