Programming for Data Science with Python

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. **Project**

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. **Interview Preparation**

*In Assignment there is Mini Projects.