Programming in Python

UNIT - I

Introduction to Python: Features, Installation, setting up path and Working with Python. Understanding Python variables, Python basic Operators, Understanding python blocks, Python Data Types: Numeric, Boolean, None, String, List, Tuple, Dictionary. Python Program Flow Control Conditional blocks using if, else and nested if-else (05). Loops in python: simple loops and for loop using range in string, list, tuple and dictionaries. Use of while loops in python, Nested loop, Loop manipulation using pass, continue, break and else. String Manipulation: Accessing Strings, Basic Operations, String slicing (05).
Lectures: 10

UNIT - II

Lists: Introduction, accessing list, Operations, working with lists and methods. Tuples: Accessing Tuples, Operations, working and methods. Dictionaries: Accessing values in Dictionaries, working with dictionaries, properties, functions. List Comprehensions, Dictionary Comprehension (05). Functions: Defining a function, calling a function, Types of functions: Regular and Anonymous functions (Lambda Functions), Function arguments and its types, Global and Local variables (06).
Lectures: 11

UNIT - III

Modules: Importing modules, Math module, Random module. File Handling: opening and closing files, reading and writing files, os module (04). Exception Handling: Types of Exceptions, User Defined Exceptions, Raising an Exception (03). OOPs concepts: Class and object, Built-in Class Attributes, Operator Overloading, Method Overloading and overriding, concept of Inheritance (05).
Lectures: 12

UNIT - IV

NumPy - Basics, creating arrays, Slicing, Matrix Operations. Plotting and visualization: Matplotlib - Basic plot, Ticks, Labels, and Legends (05). Working with CSV files. Reading, Manipulating, and Processing Data. Working with Excel Document: Installing the openpyxl Module, Reading Excel Documents, Project: Reading Data from a Spreadsheet, Writing Excel Documents, Project: Updating a Spreadsheet, Setting the Font Style of Cells, Font Objects, Formulas, Adjusting Rows and Columns, Charts (07).
Lectures: 12