

Python

Introduction to Problem Solving

- ✓ Introduction
- ✓ Steps for Problem Solving
- ✓ Algorithm
- ✓ Representation of Algorithms
- ✓ Flow of Control
- ✓ Verifying Algorithms
- ✓ Comparison of Algorithm
- ✓ Coding
- ✓ Decomposition

Getting Started with Python

- ✓ Introduction to Python
- ✓ Python Keywords
- ✓ Identifiers
- ✓ Variables
- ✓ Comments
- ✓ Everything is an Object
- ✓ Data Types
- ✓ Operators
- ✓ Expressions
- ✓ Statement
- ✓ Input and Output
- ✓ Type Conversion
- ✓ Debugging

Flow of Control

- ✓ Introduction
- ✓ Selection
- ✓ Indentation
- ✓ Repetition
- ✓ Break and Continue Statement
- ✓ Nested Loops

Functions

- ✓ Introduction
- ✓ Functions
- ✓ User Defined Functions
- ✓ Scope of a Variable
- ✓ Python Standard Library

Strings

- ✓ Introduction
- ✓ Strings
- ✓ String Operations
- ✓ Traversing a String
- ✓ String Methods and Built-in Functions
- ✓ Handling Strings

Lists

- ✓ Introduction to List
- ✓ List Operations
- ✓ Traversing a List
- ✓ List Methods and Built-in Functions
- ✓ Nested Lists
- ✓ Copying Lists
- ✓ List as Arguments to Function

- ✓ List Manipulation

Tuples and Dictionaries

- ✓ Introduction to Tuples
- ✓ Tuple Operations
- ✓ Tuple Methods and Built-in Functions
- ✓ Tuple Assignment
- ✓ Nested Tuples
- ✓ Tuple Handling
- ✓ Introduction to Dictionaries
- ✓ Dictionaries are Mutable
- ✓ Dictionary Operations
- ✓ Traversing a Dictionary
- ✓ Dictionary Methods and Built-in functions
- ✓ Manipulating Dictionaries

Exception Handling in Python

- ✓ Introduction
- ✓ Syntax Errors
- ✓ Exceptions
- ✓ Built-in Exceptions
- ✓ Raising Exceptions
- ✓ Handling Exceptions
- ✓ Finally Clause

File Handling in Python

- ✓ Introduction to Files
- ✓ Types of Files
- ✓ Opening and Closing a Text File
- ✓ Writing to a Text File
- ✓ Reading from a Text File

- ✓ Setting Offsets in a File
- ✓ Creating and Traversing a Text File
- ✓ The Pickle Module

Introduction to NumPy

- ✓ Introduction
- ✓ Array
- ✓ NumPy Array
- ✓ Indexing and Slicing
- ✓ Operations on Arrays
- ✓ Concatenating Arrays
- ✓ Reshaping Arrays
- ✓ Splitting Arrays
- ✓ Statistical Operations on Arrays
- ✓ Loading Arrays from Files
- ✓ Saving NumPy Arrays in Files on Disk

Data Handling using Pandas

- ✓ Introduction to Python Libraries
- ✓ Series
- ✓ DataFrame
- ✓ Importing and Exporting Data between CSV
- ✓ Files and DataFrames
- ✓ Pandas Series Vs NumPy ndarray
- ✓ Descriptive Statistics
- ✓ Data Aggregations
- ✓ Sorting a DataFrame
- ✓ Group by Functions
- ✓ Altering the Index
- ✓ Other DataFrame Operations
- ✓ Handling Missing Values
- ✓ Import and Export of Data between Pandas and MySQL

Plotting Data using **Matplotlib**

- ✓ Introduction
- ✓ Plotting using Matplotlib
- ✓ Customisation of Plots
- ✓ The Pandas Plot Function (Pandas Visualisation)

Stack

- ✓ Introduction
- ✓ Stack
- ✓ Operations on Stack
- ✓ Implementation of Stack in Python
- ✓ Notations for Arithmetic Expressions
- ✓ Conversion from Infix to Postfix Notation
- ✓ Evaluation of Postfix Expression

Queue

- ✓ Introduction to Queue
- ✓ Operations on Queue
- ✓ Implementation of Queue using Python
- ✓ Introduction to Deque
- ✓ Implementation of Deque Using Python

Sorting

- ✓ Introduction
- ✓ Bubble Sort
- ✓ Selection Sort
- ✓ Insertion Sort
- ✓ Time Complexity of Algorithms

Searching

- ✓ Introduction
- ✓ Linear Search
- ✓ Binary Search
- ✓ Search by Hashing

Understanding Data

- ✓ Introduction to Data
- ✓ Data Collection
- ✓ Data Storage
- ✓ Data Processing
- ✓ Statistical Techniques for Data Processing

Database Concepts

- ✓ Introduction
- ✓ File System
- ✓ Database Management System
- ✓ Relational Data Model
- ✓ Keys in a Relational Database

Structured Query Language (SQL)

- ✓ Introduction
- ✓ Structured Query Language (SQL)
- ✓ Data Types and Constraints in MySQL
- ✓ SQL for Data Definition
- ✓ SQL for Data Manipulation
- ✓ SQL for Data Query
- ✓ Data Updation and Deletion
- ✓ Functions in SQL
- ✓ GROUP BY Clause in SQL
- ✓ Operations on Relations
- ✓ Using Two Relations in a Query

We cover the full syllabus of 11, 12, BCA and B.Tech students.

Online MCQ practice test papers are provided to students.

All Python programming Notes will be provided in PDF.

All Python Programs discussed in class and assignment provided to student in text file.

Note : 15 years of IT industry and teaching experience.

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