Softpro India Summer Training
Python Schedule

7-Day Core Python Syllabus for BTech Students

Day 1: Introduction and Basics

- Python setup, IDEs (Notepad, VSCode)
- Variables, data types (int, float, str, bool)
- Basic operators (arithmetic, comparison, logical)
- User Input/output (print, input)
- Simple programs (calculator, string manipulation)
- Practice: Write 5 small programs (swap variables, check even/odd)

Day 2: Control Structures

- Conditional statements (if, elif, else)
- Loops (for, while, nested loops)
- Break, continue, pass
- Practice: Programs using loops and conditionals (sum of numbers, pattern printing)

Day 3: Functions and Modules

- Defining functions, parameters, return statemens
- Default, keyword, variable-length arguments (*args, **kwargs)
- Lambda functions
- Importing modules (math, random, datetime)
- Creating custom modules
- Practice: Write functions for factorial, prime check, and a simple module

Day 4: Collections

- Lists: indexing, slicing, methods (append, pop, sort)
- Tuples: immutability, unpacking

- Sets: operations (union, intersection)

- Dictionaries: key-value pairs, methods (get, update)

- List comprehensions

- Practice: Programs for list manipulation, dictionary operations

Day 5: File Handling and Exception Handling

- File operations (read, write, append)

- Working with text and CSV files

- Try-except blocks, handling specific exceptions

- Custom exceptions

- Practice: Read/write files, handle errors in programs

Day 6: Object-Oriented Programming (OOP)

- Classes and objects

- Methods, constructors (**init**)

- Inheritance, polymorphism, encapsulation

- Special methods (**str**, **len**)

- Practice: Create a class-based program (bank system, student record)

Day 7: Advanced Topics and Mini-Project

- Regular expressions (re module)

- Working with APIs (requests library, fetching JSON data)

- Basic libraries (sys, json)

- Introduction to virtual environments

- Mini-project: Build a console-based application (to-do list, quiz app, or API-based weather app)

- Practice: Complete and present mini-project