BASIC TO ADVANCED

PYTHON COURSE

30 DAYS

2 HRS DAILY

ONLINE

LIFE TIME ACCESS

PYTHON

DAY 1 INTRODUCTION TO PYTHON

Learn the history of Python , Install Python , Understand basic syntax

DAY 2 VARIABLES AND DATA TYPES

Understand variables , Learn about different data types (integers, floats, strings, booleans.

DAY 3 BASIC OPERATIONS

Practice arithmetic operators , Learn comparison and logical operators

DAY 4 STRINGS

Manipulate strings Learn string methods and formatting

DAY 5 LISTS AND TUPLES

Work with lists Understand tuples and their operations

PYTHON

DAY 6 DICTIONARIES AND SETS

Learn dictionary operations and methods Understand sets and their operations

DAY 7 REVIEW AND PRACTICE

Review all topics from Days 1-6 Practice with small coding exercises

DAY 8 CONDITIONAL STATEMENTS

Learn if, elif, else statements Practice conditional logic

DAY 9 LOOPS

Understand for and while loops Practice using break and continue

DAY 10 FUNCTIONS

Define and use functions , Understand parameters and return statements

DAY 11 FUNCTION SCOPE AND LAMBDA

Understand function scope Learn about lambda functions

DAY 12 MODULES AND PACKAGES

Learn to import modules Understand standard libraries and pip

PYTHON

DAY 13 FILE HANDLING

Read and write files , Practice file handling operations

DAY 14 ERROR HANDLING

Use try, except, finally blocks , Create custom exceptions

DAY 15 OBJECT-ORIENTED PROGRAMMING (OOP) - PART 1

Learn about classes and objects, Understand constructors

DAY 16 OBJECT-ORIENTED PROGRAMMING (OOP) - PART 2

Practice inheritance and polymorphism , Understand encapsulation

DAY 17 DECORATORS AND GENERATORS

Create and use decorators Learn about generators

DAY 18 WORKING WITH LIBRARIES

Introduction to NumPy Basics of pandas and matplotlib

DAY 19 APIS

Use the Requests library Work with APIs and JSON data

PYTHON

DAY 20 PROJECT 2 - DATA ANALYSIS WITH PANDAS

Read and write files , Practice file handling operations

DAY 21 ADVANCED DATA STRUCTURES

Learn about linked lists Understand stacks and queues

DAY 22 ALGORITHMS

Study sorting algorithms , Learn searching algorithms

DAY 23 WEB SCRAPING

Use BeautifulSoup for web scraping , Introduction to Scrapy

DAY 24 GUI PROGRAMMING

Create simple GUI applications with Tkinter Understand Tkinter basics

DAY 25 WORKING WITH DATABASES

Use SQLite for database operations Introduction to SQLAlchemy

DAY 26 TESTING AND DEBUGGING

Learn unit testing techniques Practice debugging

PYTHON

DAY 27 VERSION CONTROL WITH GIT

Learn basic Git commands Use GitHub for version control

DAY 28 PROJECT 3 - WEB SCRAPER

Build a web scraper to collect data

DAY 29 PROJECT 3 - WEB SCRAPER

Store the scraped data in a CSV files

DAY 30 PROJECT 3 - WEB SCRAPER

Document and refine your projects

BASIC TO ADVANCED

SQL

COURSE

15 DAYS

2 HRS DAILY

ONLINE

LIFE TIME ACCESS

SQL

DAY 1 — INTRODUCTION TO DATABASES

Basics of Databases , Types of Databases , Introduction to RDBMS , Examples of RDBMS

DAY 2 — INTRODUCTION TO SQL

What is SQL? ,SQL Syntax and Structure , Importance of SQL in Data Management

DAY 3 — SQL FUNDAMENTALS - PART 1

Common Data Types (INT, VARCHAR, DATE, etc.) `SELECT` Statement Filtering Data Using `WHERE`

DAY 4 — SQL FUNDAMENTALS - PART 2

Sorting Data with `ORDER BY` Limiting Data with `LIMIT`

DAY 5 — AGGREGATE FUNCTIONS

`COUNT()` `SUM()` `AVG()` `MIN()` `MAX()`

SQL

DAY 6 GROUPING DATA

`GROUP BY` Filtering Grouped Data with `HAVING`

DAY 7 BASIC JOINS

Inner Join Left Join Right Join

DAY 8 ADVANCED JOINS AND SUBQUERIES

Full Join Cross Join Self Join Subqueries: Single-row, Multi-row, Correlated

DAY 9 COMMON TABLE EXPRESSIONS (CTES) AND WINDOW FUNCTIONS

Using `WITH` Clause Window Functions: `ROW_NUMBER()`, `RANK()`, `DENSE_RANK()`, `NTILE()` Aggregate Functions with `OVER()`

DAY 10 SET OPERATIONS

Union and Union All Intersect Except/Minus

DAY 11 DATABASE DESIGN AND NORMALIZATION

Database Design Principles ER Diagrams Normalization: 1NF, 2NF, 3NF, BCNF De-normalization

DAY 12 INDEXES AND PERFORMANCE OPTIMIZATION

Types of Indexes Creating and Managing Indexes Pros and Cons of Using Indexes Understanding Execution Plans Using `EXPLAIN` Index Usage and Optimization Tips

SQL

DAY 13

STORED PROCEDURES, FUNCTIONS, AND TRIGGERS

Creating and Executing Stored Procedures Parameters in Stored Procedures Scalar and Table-valued Functions Creating and Managing Triggers

DAY 14

ADVANCED TOPICS IN SQL

Transactions and Concurrency ACID Properties Transaction Control Commands (`BEGIN`, `COMMIT`, `ROLLBACK`) Error Handling: TRY...CATCH Blocks Security: User Roles and Permissions, Data Encryption

DAY 15

PRACTICAL EXPERIENCE AND INTERVIEW PREPARATION

Practice SQL Problems on Platforms like LeetCode, HackerRank, SQLZoo Build Sample Databases and Implement Real-world Scenarios Review Common SQL Interview Questions Conduct Mock Interviews Revisit Key Concepts and Practice Under Time Constraints