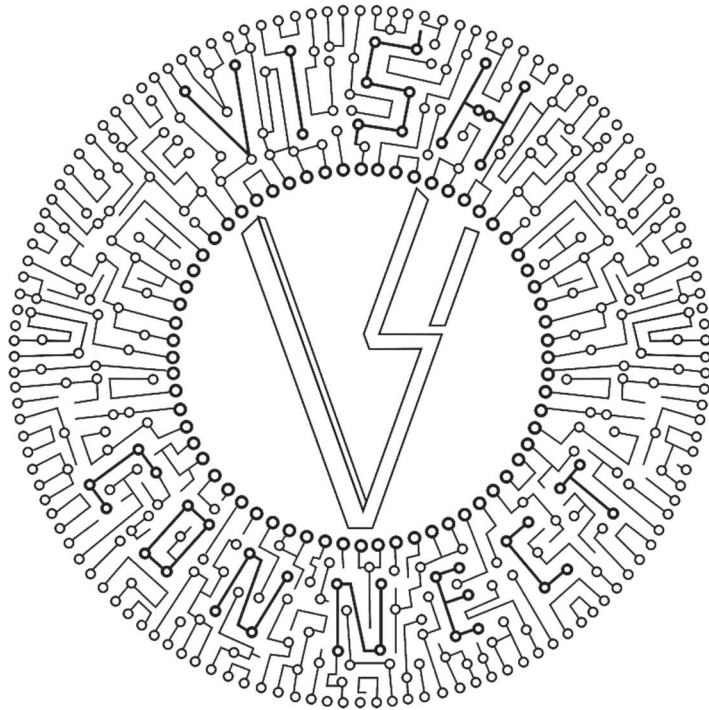




VISHCONNECT SOLUTIONS

Simplify Work Through Automation

Premium Python Workshop



Session 1: Python Basics and Advanced Fundamentals

- **Duration: 2 Hours**
 - **Topics:**
 - **Python syntax and best practices**
 - **Variables, data types, and type conversion**
 - **Advanced operators (bitwise, identity, membership)**
 - **Using virtual environments**
 - **Practical Activities:**
 - **Set up a virtual environment**
 - **Solve exercises using different operators**
 - **Write modular, clean code following best practices**
-

Session 2: Advanced Control Structures and Functions

- **Duration: 2 Hours**
 - **Topics:**
 - **Nested and complex conditional statements**
 - **Advanced loop techniques with else and break/continue**
 - **Recursive functions**
 - **Advanced function concepts (decorators, closures)**
 - **Practical Activities:**
 - **Write programs using advanced control structures**
 - **Create recursive functions for solving problems**
 - **Use decorators for function customization**
-

Session 3: Data Structures Mastery

- **Duration: 2 Hours**
- **Topics:**
 - **Advanced list comprehensions and generators**
 - **Custom sorting and filtering with lambdas**
 - **Advanced dictionary and set operations**

- **Practical Activities:**
 - Solve problems using list comprehensions
 - Write generator functions for efficient iteration
 - Perform advanced operations on dictionaries and sets
-

Session 4: String Manipulation and Regular Expressions

- **Duration: 2 Hours**
 - **Topics:**
 - Advanced string methods
 - Formatting strings using f-strings and templates
 - Regular expressions: pattern matching, substitution
 - **Practical Activities:**
 - Extract data using regex patterns
 - Write string manipulation programs
 - Format complex strings for reports
-

Session 5: File Handling and Data Serialization

- **Duration: 2 Hours**
 - **Topics:**
 - File operations with multiple file formats (txt, csv, json)
 - Data serialization with pickle and json
 - Advanced file handling techniques with error handling
 - **Practical Activities:**
 - Read and write data in different formats
 - Serialize and deserialize Python objects
 - Handle large file operations efficiently
-

Session 6: Exception Handling and Debugging

- **Duration: 1.5 Hours**
- **Topics:**

- **Custom exceptions and raising errors**
 - **Debugging tools (pdb, logging)**
 - **Using assertions for validation**
 - **Practical Activities:**
 - **Write programs with custom error-handling mechanisms**
 - **Debug complex scripts using pdb**
 - **Use logging for program monitoring**
-

Session 7: Working with Libraries and APIs

- **Duration: 2 Hours**
 - **Topics:**
 - **Popular Python libraries (pandas, numpy, requests)**
 - **Consuming REST APIs**
 - **Parsing and processing JSON/XML data**
 - **Practical Activities:**
 - **Fetch and process API data**
 - **Analyze datasets using pandas**
 - **Write scripts that integrate with external APIs**
-

Session 8: Object-Oriented Programming (OOP) Mastery

- **Duration: 2 Hours**
 - **Topics:**
 - **Advanced OOP concepts: inheritance, polymorphism, abstract classes**
 - **Encapsulation and private attributes**
 - **Magic methods and operator overloading**
 - **Practical Activities:**
 - **Build a class hierarchy with inheritance**
 - **Implement polymorphism in a practical example**
 - **Use magic methods to customize class behavior**
-

Session 9: Database Connectivity and ORM

- **Duration: 2 Hours**
 - **Topics:**
 - **Connecting to databases using sqlite3 and MySQL**
 - **CRUD operations with SQL**
 - **Introduction to ORM with SQLAlchemy**
 - **Practical Activities:**
 - **Create and manipulate a database**
 - **Perform SQL queries via Python**
 - **Use SQLAlchemy to map database tables to Python classes**
-

Session 10: Advanced Topics and Optimization

- **Duration: 2 Hours**
 - **Topics:**
 - **Multithreading and multiprocessing**
 - **Memory optimization and profiling**
 - **Writing efficient and scalable code**
 - **Practical Activities:**
 - **Write multithreaded and multiprocessing scripts**
 - **Optimize memory usage in Python programs**
 - **Profile a script and optimize its performance**
-

Session 11: Mini Project and Final Review

- **Duration: 2 Hours**
- **Topics:**
 - **Consolidation of learned skills through a mini project**
 - **Code review and debugging techniques**
 - **Discussion on best practices for project workflows**
- **Practical Activities:**
 - **Complete a real-world mini project (e.g., API integration, data analysis)**

- **Present and review the project**
- **Discuss areas of improvement and next steps in Python mastery**

Premium Python Workshop

Contact Information:

For any questions or further information, please contact us at:

Email: info@vishconnect.com

Phone: +1 437 452 9029