KOENIG
step forward

KOENIG SOLUTIONS · COURSE OUTLINE

Python: Data Structures, Functions & File I/O

Learn to write Python programs using core syntax, data structures, functions, file handling and popular libraries.

4 Hours	4	24
DURATION	MODULES	TOPICS

COURSE OVERVIEW

This course introduces Python setup and basic syntax, including variables, operators and control flow with if statements and loops. It then covers data structures such as lists, tuples and dictionaries, along with defining functions, passing parameters and understanding variable scope. It also addresses reading from and writing to files, and handling exceptions with try-except blocks. Finally, it introduces popular libraries such as NumPy and Pandas, including how to install and import them.

WHO THIS COURSE IS FOR

Python Beginners | **Data Analysts** | **Software Developers** | **Automation Engineers** | **Students**

LEARNING OBJECTIVES

- Explain basic Python syntax including variables and data types
- Apply control flow using if statements and loops
- Create and manipulate lists, tuples and dictionaries
- Define functions with parameters and return values
- Describe the scope of variables within functions
- Implement file reading and writing operations
- Apply try-except blocks to handle exceptions
- Identify popular libraries such as NumPy and Pandas

COURSE SYLLABUS

4 Modules, 24 Topics

01

1 hour

Session 1: Introduction to Python

INTRODUCTION

- Welcome and overview of the training
- Brief introduction to Python and its popularity

SETTING UP PYTHON

- Installing Python (if not already installed)
- Introduction to Python environments (IDLE, Jupyter, VSCode)

BASIC PYTHON SYNTAX

- Variables and data types
- Basic operations (arithmetic, strings, etc.)
- Print statements and comments

CONTROL FLOW

- If statements
- Loops (for and while)
- Example exercises for practice

02

1 hour

Session 2: Data Structures and Functions

LISTS AND TUPLES

Creating and manipulating lists · Working with tuples

DICTIONARIES

Understanding dictionaries · Common operations on dictionaries

FUNCTIONS

Defining and calling functions · Function parameters and return values · Scope of variables

03

1 hour

Session 3: File Handling and Error Handling

FILE INPUT/OUTPUT

Reading from and writing to files · Common file handling operations

EXCEPTION HANDLING

Introduction to exceptions · Using try-except blocks · Handling different types of exceptions

04

1 hour

Session 4: Introduction to Libraries and Real-world Examples

INTRODUCTION TO LIBRARIES

- Overview of popular libraries (e.g., NumPy, Pandas)
- Installing and importing libraries

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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Learn the Way That Suits You

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