

PYTHON PROGRAMMING

LEARN

CERTIFY

ENGAGE

COMPETE

PYTHON LANGUAGE

PROFESSIONALS

DATA ANALYST

DATABASE

ADMINISTRATOR

NETWORK

ADMINISTRATOR

CYBER SECURITY

EXPERT

MACHINE LEARNING

ENGINEER

TELECOM ENGINEER 1

COURSE OUTLINE

Module 1 Introduction to Python

Module 2 Variable and Data Types

Module 3 Control Flow

Module 4 Data Structures

Module 5 Functions

Module 6 File Handling

Module 7 Error Handling and Exceptions

Module 8 Modules and Libraries

Module 9 Object-Oriented Programming (OOP) Basics

Module 10 Advanced OOP Concepts

Module 11 Functional Programming

Module 12 Regular Expressions

Module 13 Working with Data

Module 14 Web Scraping

Module 15 GUI in Python

Module 16 Final Project

Module **01** Introduction Python

Overview of Python

Installation and Setup

Basic Syntax and Hello World

Module **02** Variable and Data Types

Variables and Naming Rules

Numeric Data Types

String Data Type

Input and Output

Module **03** Control Flow

Conditional Statements (if, elif, else)

Logical Operators

Loops (for and while)

Loop Control Statements (break, continue)

Module **04** Data Structures

Lists

Tuples

Sets

Dictionaries

Module **05** Functions

Function Definition and Syntax

Parameters and Arguments

Scope and Lifetime of Variables

Return Statements

Module **06** File Handling

Reading and Writing Text Files

Working with CSV and JSON Files

Module **07** Error Handling and

Exceptions

Exception Handling (try, except, finally)

Custom Exception Classes

Module **08** Modules and Libraries

Using Built-in Modules

Creating and Importing Custom Modules

Introduction to Python Standard Library

Module **09** Object-Oriented

Programming (OOP)

Basics

Classes and Objects

Constructors and Destructors

Inheritance and Polymorphism

Module **10** Advanced OOP

Concepts

Encapsulation

Abstraction

Method Overriding

Class and Instance Variables

Module **11** Functional

Programming

Lambda Functions

Map, Filter, and Reduce

Closures

Module **12** Regular Expressions

Pattern Matching with Regular Expressions

Re Module Functions

Module **13** Working with Data

Introduction to NumPy and Pandas

Data Manipulation and Analysis

Module **14** Web Scraping

Requests Library

BeautifulSoup for HTML Parsing

Module **15** GUI in Python

Introduction to GUI

GUI libraries in python

Basic GUI components

Event Handling

Data Input Validation

Module **16** Final Project

Applying Python skills to develop a real-world project
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