KOENIG
step forward

KOENIG SOLUTIONS · COURSE OUTLINE

Scripting Basics: Python, PowerShell & Bash

Learn to write and run basic scripts in Python, PowerShell and Bash to automate everyday tasks.

5 Days	10	42
8 HOURS A DAY	MODULES	TOPICS

COURSE OVERVIEW

This course is designed for beginners who want to learn the fundamentals of scripting using three popular languages: Python, PowerShell, and Bash. Scripting is an essential skill for automating tasks, managing systems, and streamlining workflows in various computing environments. Throughout this course, students will gain hands-on experience writing scripts, understanding syntax, and executing commands in each language. By the end of the course, students will have the foundational knowledge to create basic scripts and automate simple tasks using Python, PowerShell, and Bash.

WHO THIS COURSE IS FOR

- **Beginner Programmers**
- **System Administrators**
- **IT Support Staff**
- **Automation Engineers**
- **Help Desk Technicians**

PREREQUISITES

- None

TOOLS AND REQUIREMENTS

- Python Version: 3.7 or higher
- PowerShell Version: 7.x
- Lab Requirement: Koenig DC

LEARNING OBJECTIVES

- Explain the role of scripting in automating tasks
- Configure development environments for Python, PowerShell and Bash
- Apply variables, data types and control structures across languages
- Develop Python functions and use modules and libraries
- Implement file handling and exception handling in Python
- Use PowerShell cmdlets, pipelines and aliases to filter data
- Build PowerShell scripts with error handling and debugging
- Write Bash scripts using functions, arguments and file operations

COURSE SYLLABUS

10 Modules, 42 Topics

01

Introduction to Scripting

TOPICS

- Overview of scripting languages
- Importance of scripting in automation
- Setting up the development environment (Python, PowerShell, Bash)
- Introduction to basic concepts (variables, data types, control structures)

02

Getting Started with Python

TOPICS

Installing Python · Writing and running Python scripts · Variables and data types in Python · Basic input/output operations · Conditional statements and loops in Python

03

Python Functions and Modules

TOPICS

Defining and calling functions · Function parameters and return values · Scope of variables · Introduction to Python modules and libraries · Importing and using modules

04

Working with Files in Python

TOPICS

- Reading from and writing to files
- File handling operations (open, close, read, write)
- Handling exceptions in file operations
- Practical exercises with file manipulation

05

Introduction to PowerShell

TOPICS

- What is PowerShell and its use cases
- Installing PowerShell
- **PowerShell basics:** cmdlets, aliases, and parameters
- PowerShell scripting environment

06

PowerShell Commands and Pipelines

TOPICS

Exploring common PowerShell cmdlets · Working with pipelines and filtering data · Combining cmdlets for complex operations · Practical exercises with PowerShell commands

07

PowerShell Scripting Fundamentals

TOPICS

- Writing scripts in PowerShell
- Variables and data types in PowerShell
- Control structures in PowerShell (if-else, loops)
- Error handling and debugging in PowerShell scripts

08

Introduction to Bash Scripting

TOPICS

What is Bash and its role in scripting · Installing Bash (for non-Linux systems) · Basics of shell scripting · Writing and running Bash scripts

09

Bash Scripting Essentials

TOPICS

Variables and data types in Bash · Input/output operations in Bash scripts · Conditional statements and loops in Bash · Practical exercises with Bash scripting

10

Advanced Bash Scripting

TOPICS

Functions in Bash scripts · Command-line arguments and options · Working with files and directories in Bash · Error handling and debugging techniques

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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