

Python Automation Bootcamp: Streamline Your Workflow with Code

(32 hours)

Course Description

The "Automation with Python" course is a comprehensive program that focuses on leveraging the power of Python to automate repetitive tasks and enhance productivity. Through hands-on projects and practical examples, participants will learn various automation techniques, including input validation, file manipulation, web scraping, working with different data formats, and GUI automation. This course equips learners with the necessary skills to automate workflows, save time, and optimize efficiency using Python.

Audience

This course is suitable for:

- Python developers who want to enhance their automation skills and streamline their workflows.
- IT professionals and system administrators seeking to automate routine tasks and improve productivity.
- Data analysts and researchers looking to automate data processing and analysis workflows.
- Professionals from various domains who want to leverage Python automation for increased efficiency.
- Individuals with basic Python knowledge who are interested in learning automation techniques.

Pre-requisite Knowledge/Skills

Participants should have:

- Basic understanding of Python programming, including syntax, data types, and control flow.
- Familiarity with Python libraries and modules.
- Proficiency in writing and executing Python scripts.

Course Objectives

The objective of this course is to provide participants with the knowledge and skills required to automate tasks using Python. By the end of the course, learners will be able to design and implement automation scripts, effectively utilize Python libraries for automation, and optimize workflows to save time and increase productivity.

Course Outline

The course comprises 32-hours of theory and labs.

Module 1: Introduction to Automation using Python

- Understanding automation and its benefits
- Setting up Python environment for automation
- Overview of automation libraries and tools

Module 2: Input Validation

- Introduction to input validation
- PyInputPlus module for input validation
- Various keyword arguments for input validation
- Custom validation functions

Module 3: Reading and Writing Files

- Working with file paths
- Reading and writing text files
- Modifying files using glob patterns
- Saving variables with the Shelve module
- Using PPrint.Pformat() function

Module 4: Organizing Files

- Overview of the SHUTIL module
- Walking a directory tree
- Working with zip files

Module 5: Debugging

- Raising exceptions for error handling
- Assertions for debugging and testing
- Logging for tracking program execution
- Introduction to Mu's debugger

Module 6: Web Scraping

- Basics of web scraping
- Parsing HTML using the BeautifulSoup (BS4) module
- Extracting data from websites
- Handling dynamic web content

Module 7: Working with Excel Spreadsheets

- Installing and using the OpenPyXL module
- Opening, reading, and modifying Excel files
- Working with columns and rows in spreadsheets

Module 8: Working with Google Sheets

- Setting up and using EZ sheets
- Working with spreadsheet objects and attributes
- Reading and writing columns and rows
- Creating and deleting sheets

Module 9: Working with PDF and Word Documents

- Extracting text from PDF documents
- Encrypting and decrypting PDF files
- Creating PDF and Word documents
- Converting Word documents to PDF

Module 10: Working with CSV Files and JSON Data

- Using the CSV module for reading and writing CSV files
- Working with reader and writer objects
- Introduction to JSON and working with JSON data

Module 11: Timekeeping, Task Organization, and Program Starting

- Understanding the time module
- Working with datetime objects
- Multithreading for task organization
- Launching external programs from Python

Module 12: Sending Email and Text Messages

- Sending and receiving emails with the Gmail API
- Connecting to SMTP and sending SMTP messages
- Retrieving and deleting emails with IMAP
- Sending text messages using SMS gateways and Twilio

Module 13: Manipulating Images

- Fundamentals of computer images
- Working with image data types in Python
- Drawing shapes and text on images

Module 14: Efficient GUI Automation: Streamlining Tasks with Keyboard and Mouse Control

- Installing and using the PyAutoGUI module
- Controlling mouse movements and interactions
- Working with the screen and image recognition
- Controlling the keyboard and setting up GUI automation scripts
- Displaying message boxes for user interaction