



API Test Automation Framework with Python

Mode of Training: Online Training

Name of Trainer: Mr. SAHA

A woman with dark curly hair and glasses, wearing a pink top, stands with her arms crossed in front of a large window with a grid pattern. The background is slightly blurred.

**Course
Curriculum**

Build API test automation framework with Python from scratch and Design Production Level Scalable Framework. Walkthrough of Company Live API Framework Design!

Skill level: All Levels | **Languages:** English | **Classes:** 24 total hours

Section 1: Introduction to the Course

30 Mins

- 1.1. Welcome to the Course
- 1.2. Table of Content
- 1.3. Preview of End Result
- 1.4. About the Test Site and Ecommerce API

Section 2: API Testing Essentials

60 Mins

- 2.1. What is a Web Service?
- 2.2. What is an API?
- 2.3. What is a REST API?
- 2.4. HTTP Essentials
- 2.5. POSTMAN Essentials
- 2.6. EXERCISES

Section 3: Installation and Setup of Tools

120 Mins

- 3.1. Intro to Installation and Setup Section
- 3.2. Installing Python
- 3.3. How to Use Virtual Environment
- 3.4. Create Virtual Environment for The Course
- 3.5. Install IDE (PyCharm)
- 3.6. PyCharm Project & Virtual Environment
- 3.7. Options to Run WordPress
- 3.8. Running WordPress with MAMP
- 3.9. Install "Local" For WordPress

- 3.10. Create A Site
- 3.11. Using "localhost" instead of Site Name
- 3.12. Install AMPPS & WordPress
- 3.13. Install Plugin "WooCommerce"
- 3.14. Adding Sample Products to the Site
- 3.15. Setup and Verify API with Postman and Python
- 3.16. Install MySQL Workbench & Connect to Database

Section 4: Python Programming Crash Course

180 Mins

- 4.1. Your First Python Program
- 4.2. How Python Code Gets Executed
- 4.3. Variables
- 4.4. Receiving Input
- 4.5. Type Conversion
- 4.6. Strings
- 4.7. Arithmetic Operations
- 4.8. Math Functions
- 4.9. If Statements
- 4.10. Operators
- 4.11. Weight Converter Program
- 4.12. While Loops
- 4.13. For Loops
- 4.14. Nested Loops
- 4.15. Lists
- 4.16. 2D Lists
- 4.17. List Methods
- 4.18. Tuples
- 4.19. Unpacking

- 4.20. Dictionaries
- 4.21. Functions
- 4.22. Parameters
- 4.23. Keyword Arguments
- 4.24. Return Statement
- 4.25. Creating a Reusable Function
- 4.26. Exceptions
- 4.27. Comments
- 4.28. Classes
- 4.29. Constructors
- 4.30. Inheritance
- 4.31. Modules
- 4.32. Packages
- 4.33. Generating Random Values
- 4.34. Working with Directories
- 4.35. Pypi and Pip
- 4.36. PEP-8 Standard
- 4.37. EXERCISES

Section 5: Crash Course on PyTest

60 Mins

- 5.1. Introduction to PyTest
- 5.2. Selecting Tests by Markers (Tags)
- 5.3. Setup & Teardown (fixtures)
- 5.4. PyTest HTML Report
- 5.5. EXERCISES

Section 6: Build Framework - Project Structure

30 Mins

- 6.1. How to Use the Provided Code

6.2. Project Structure Overview

Section 7: Test Case Discussion

30 Mins

7.1. TCID-1 - Discussion - "create a customer" endpoint

7.2. TCID-1 - Design Test Code Template

Section 8: Design Helper Classes

180 Mins

8.1. Helper - Email & Password Generator (TCID-1)

8.2. Helper - Create Customer (TCID-1)

8.3. Helper - 'POST' request (TCID-1)

8.4. Authenticate our API call

8.5. Helper - Credentials

8.6. TCID-1 Verify 'Create Customer' API Response

Section 9: Environment Variables & Database Helper Class

60 Mins

9.1. Setting Environment Variables

9.2. Customers DAO

9.3. Helper - Database Connect & SQL

9.4. TCID-1 Verify Database

Section 10: Test Case ID 2

30 Mins

10.1. TCID-2 - Discussion - List All Customers Endpoint

10.2. TCID-2 - List All Customers (GET Call)

Section 11: More Practice Test Cases

120 Mins

11.1. TCID-3 - Create Customer Existing Email (negative

11.2. Run All Customers Test Cases

11.3. Assignment - Automate TCID-4 (Get All Products)

11.4. TCID-4 Get All Products - Implementation

11.5. TCID-5 Get Product By ID

11.6. TCID-6 Create Simple Product

11.7. TCID-7-1 List Product with Filter "after"

11.8. TCID-7-2 List Product with Filter "after" – db verification

11.9. TCID-7-3 List Product with Filter "after" - more pages

Section 12: More Practice: Using Python Library by WooCommerce

120 Mins

12.1. WooCommerce Python Library Intro

12.2. TCID-8-1 Place Guest Order - Discussion

12.3. TCID-8-2 Place Guest Order - Read Payload from File

12.4. TCID-8-3 Place Guest Order - Make the Call

12.5. TCID-8-4 Place Guest Order -Validate Response

12.6. TCID-8-5 Place Guest Order -Validate db

12.7. TCID-9 Place Order with New Customer

12.8. Setup Example with TCID-9

Section 13: More Practice: Setup & Database Configurations

90 Mins

13.1. Use Configs for Database Connections

13.2. TCID-10-1 Update Order Status - Cancelled

13.3. TCID-10-2 Update Order Status - Cancelled

13.4. TCID-10,11,12 Parametrization

13.5. TCID-13 Update Order Status - Invalid Status

13.6. TCID-14 Update Order - "customer_note"

Section 14: EXERCISES

60 Mins

14.1. Exercise TCID-15: Verify update 'regular_price' updates the 'price' field

14.2. Exercise TCID-16: Verify update 'sale_price > 0' will set field 'on_sale'=True

14.3. Exercise TCID-17: Verify update 'sale_price=""' will set field 'on_sale'=False

14.4. Exercise TCID-18: Verify update 'sale_price' updates the 'sale_price' field

14.5. Exercise TCID-19: Order with 50% off coupon should reduce total by 50%

14.6. Exercise TCID-20: Create a new coupon with 'discount_type=percent'

14.7. Exercise TCID-21: Create a new coupon with 'discount_type=fixed_cart'

14.8. Exercise TCID-22: Create a new coupon with 'discount_type=fixed_product'

14.9. Exercise TCID-23: Create a new coupon with 'discount_type=<invalid string>'

14.10. Assignment: Create an automation framework to test and automate the Spotify Web API endpoints.

(<https://developer.spotify.com/documentation/web-api/>).

Section 15: Running Tests in Docker Container

90 Mins

15.1. Docker Section Introduction

15.2. Create Docker file & Build Image

15.3. Start Container and Try Test Run - unsuccessful

15.4. Connect to Database from Container

15.5. Use Docker Volumes to Avoid Image Rebuild

15.6. Make API Cal from Container

15.7. Run Tests from Outside Container

15.8. Wrapper Script to Run Tests in Container

15.9. Color Output from Docker Run

15.10. Using Debugger (pdb) With Docker

15.11. Timestamp the Report

15.12. Docker Section Summary

15.13. EXERCISES

Section 16: BONUS SECTION: SQL (MySQL) Crash Course

120 Mins

16.1. Introduction to the SQL Crash Course

16.2. Introduction to SQL

16.3. Setup Database and Data

16.4. SQL SELECT Query (Reading Data)

16.5. SQL SELECT Query Continued

16.6. SQL SELECT Query Continued 2

16.7. SQL IN Clause

16.8. SQL SELECT Sub-Query

- 16.9. SQL LIKE Clause
- 16.10. Intro to SQL JOIN
- 16.11. SQL JOIN
- 16.12. SQL LEFT JOIN
- 16.13. SQL Special Functions
- 16.14. SQL INSERT INTO
- 16.15. SQL CREATETABLE
- 16.16. SQL DROP and TRUNCATE
- 16.17. SQL Crash Course Conclusion
- 16.18. EXERCISES

Section 17: Miscellaneous

60 Mins

- 17.1. Spotify assignment check
- 17.2. Walkthrough of Company Live API Framework Design
- 17.3. Feedback!