

## **API TESTING WITH PROJECT**

### **Module 1 - API Testing Theory**

#### **Chapter 1: API Testing Overview**

Introduction to Software Automation  
Why Automation is necessary  
What is API TESTING?  
What is Web Services?  
Importance of Software Testing  
Types of API's (SOAP, REST, gRPC)

#### **Chapter 2 - API Essential**

- ⇒ **What is API?**
- ⇒ **What is Rest API?**
- ⇒ **What is JSON?**
- ⇒ **REST Vs HTTP**
- ⇒ **API Request Anatomy?**

#### **Chapter 3 - Postman Essentials**

- ⇒ **Install**
- ⇒ **Walkthrough**
- ⇒ **Generate API Key**
- ⇒ **API documentation**
- ⇒ **Execute GET Request**

#### **Chapter 4 - JSON Essentials**

- ⇒ **JSON Syntax and Data Types**
- ⇒ **Fetch JSON using Groovy's GPath**

- ⇒ Fetch JSON using Jay Way's JsonPath
- ⇒ Groovy's GPath Vs JayWay's

## Chapter 5 - HTTP Essentials

- ⇒ HTTP Concepts: Safe, Idempotent and Cacheable
  - GET
  - HEAD
  - POST
  - PUT
  - DELETE
  - OPTIONS
  - PATCH
  - Status Codes

## Module 2 - REST Assured

### Chapter 1: REST Assured Setup

- ⇒ Setup JAVA JDK
- ⇒ AVOID JAVA 8, 9 OR 10
- ⇒ Create project using IntelliJ
- ⇒ Eclipse - TestNG plugin
- ⇒ download issue - Must watch before proceeding
- ⇒ Create project using Eclipse

### Chapter 2: REST Assured -Getting Started

Why static imports?

- ⇒ Method chaining concept
- ⇒ Automate GET Request - Assert Status Code
- ⇒ Automate GET Request - Assert Response body
- ⇒ Automate GET Request - Extract Response
- ⇒ Automate GET Request - Extract Single Field
- ⇒ Hamcrest Assertion on Extracted Response
- ⇒ What is Hamcrest and Why it is popular?
- ⇒ Hamcrest Collection Matchers - Part 1
- ⇒ Hamcrest Collection Matchers - Part 2
- ⇒ Hamcrest Collection Matchers - Part 3
- ⇒ Hamcrest Collection Matchers - Part 4

### **Chapter 3: REST Assured - Logging**

- ⇒ Request and Response Logging
- ⇒ Log if Error
- ⇒ Log if Validation Fails
- ⇒ Blacklist Headers

### **Chapter 4: REST Assured - Handling Headers**

- ⇒ What are Headers?
  - Multiple Headers in Request
  - Multiple Headers in Request - Using Headers
  - Multiple Headers in Request - Using Map
  - Multi Value Header
  - Response Headers - Assert
  - Response Headers - Extract
  - Response Headers - Extract Multi
  - Value Header

### **Chapter 5: REST Assured - Response Specification**

- ⇒ Create Response Specification
- ⇒ Response Specification Builder
- ⇒ Default Response Specification

### **Chapter 6: REST Assured - Automate POST,PUT, DELETE**

- ⇒ POST - BDD Style
- ⇒ POST - non-BDD Style
- ⇒ PUT
- ⇒ DELETE

### **Chapter 7: REST Assured - Send Request Multiple Ways**

- ⇒ Send as a File
- ⇒ Send Nested JSON Object as a Map
- ⇒ Send JSON Array as a List - Create Mock Request
- ⇒ Send JSON Array as a List - Build Test Case
- ⇒ Send JSON Array as a List - Content Type Encoding

## **Chapter 8: REST Assured - Send Request Multiple Way**

Send Complex JSON using Map and List

## **Chapter 9: REST Assured - Handling Request Parameters**

- ⇒ Postman Echo Introduction
- ⇒ Single Query Parameter
- ⇒ Multiple Query Parameters
- ⇒ Multi Value Query Parameter
- ⇒ Path Parameter

## **Chapter 10: REST Assured - JSON Schema Validation**

- ⇒ What is JSON Schema?
- ⇒ Automate JSON Schema Validation
- ⇒ Class Path Options

## **Chapter 11: REST Assured - Filters**

- ⇒ Log Request and Response Specification to the Console
- ⇒ Log to File
- ⇒ Reuse Filters

## **Chapter 12: Serialization and Deserialization**

- ⇒ Serialization and Deserialization
- ⇒ Serialization and De-serialization in Java
- ⇒ Serialization and De-serialization in Rest Assured
- ⇒ Object Mapping Support
- ⇒ Serialize Map to JSON Object using Jackson
- ⇒ Serialize List to JSON Array using Jackson
- ⇒ Serialize Jackson Object Node to JSON Object
- ⇒ Serialize Jackson Array Node to JSON Array
- ⇒ What is POJO?
- ⇒ Simple POJO: Create Mock Request
- ⇒ Simple POJO: Serialization
- ⇒ Simple POJO: De-serialization
- ⇒ Workspace POJO: Serialize and De-serialize

- ⇒ **Workspace POJO: Parameterize Tests using TestNG Data Provider**

### **Chapter 13: Jackson Annotations**

- ⇒ **Not Null**
- ⇒ **Non Default**
- ⇒ **Non Empty**
- ⇒ **JSON Ignore and JSON Ignore Properties**

### **Chapter 14: Complex Pojo**

- ⇒ **API Walkthrough**
- ⇒ **Create POJOs**
- ⇒ **Build Payload and Serialize**
- ⇒ **De-serialize and Assert Full Body [JSON Assert]**
- ⇒ **Challenges**
- ⇒ **Handle Different Data Types in Request and Response**
- ⇒ **Assert Field with Different Data Types**
- ⇒ **Automate One More Test Case**

### **Chapter 15: Authentication And Authorization**

- ⇒ **Authentication Vs Authorization**
- ⇒ **Different Authentication Schemes**
- ⇒ **Basic Authentication**
- ⇒ **Digest Authentication**
- ⇒ **Bearer Authentication**
- ⇒ **API Key Authentication**
- ⇒ **What is OAuth?**
- ⇒ **What is OpenID Connect?**

### **Chapter 16: OAUTH Flows**

- ⇒ **OAuth Terminologies**
- ⇒ **Authorization Code Grant Flow**
- ⇒ **Implicit Grant Flow**
- ⇒ **Client Credentials Flow**

### **Chapter 17: Google OAUTH2.0**

- ⇒ **Introduction**
- ⇒ **Create Gmail Account**
- ⇒ **Create Client App**

- ⇒ Enable Gmail API
- ⇒ Create Consent Screen
- ⇒ Create Client Credentials
- ⇒ Authorize App
- ⇒ Fetch Access Token and Refresh Token
- ⇒ Renew Access Token
- ⇒ Execute Get User Profile API
- ⇒ Execute Send Email API

### **Chapter 18: REST Assured-Handling Cookies**

- ⇒ What is a Cookie?
- ⇒ Demo Application Cookie Flow
- ⇒ Sending Cookie
- ⇒ Sending Cookie using Cookie Builder
- ⇒ Sending Multiple Cookies
- ⇒ Fetch Single Cookie
- ⇒ Fetch Multiple Cookies

### **Chapter 19: Framework Implementation**

- ⇒ Framework Implementation Framework -Allure Reporting
- ⇒ Introduction
- ⇒ Install
- ⇒ Add Dependency
- ⇒ Generate Reports
- ⇒ Add Display Name
- ⇒ Add Description
- ⇒ Add Links
- ⇒ Add Behaviors
- ⇒ Add Steps
- ⇒ Add Filter
- ⇒ Custom Folder Path

### **Chapter 20: Framework Integration With GitHub**

- ⇒ Create GitHub Repository
- ⇒ Git Clients - Various Options
- ⇒ Commit Code to GitHub Repository
- ⇒ How to Push Subsequent Changes?

## Chapter 21: Framework -CI

- ⇒ Install Jenkins on Windows
- ⇒ Create Automation Jenkins Job
- ⇒ Jenkins Auto Trigger: SCM Polling
- ⇒ Jenkins Auto Trigger: Build Frequency
- ⇒ Jenkins Auto Trigger: GitHub Web Hooks

## Chapter 22: Java Programming

- ⇒ Java Basics - Part 1
- ⇒ Java Basics - Part 2
- ⇒ Java Basics - Part 3
- ⇒ Java Basics - Part 4
- ⇒ Control Structures Java Programming
- ⇒ OOP - Inheritance and super keyword
- ⇒ Access modifiers
- ⇒ OOP - Encapsulation
- ⇒ OOP - Polymorphism
- ⇒ OOP - Abstraction using abstract class
- ⇒ OOP - Abstraction using interface
- ⇒ Exception handling
- ⇒ File operations

## INCLUDING TRAINING:

1. Resume Preparation
2. Interview Questions
3. Mock Interviews
4. Placement Assistance