

## API Testing - WEB SERVICES, REST API & SOAP UI Testing

(40 Hr)

### 1.Introduction

This course is designed to cover all aspects of **API Testing (WEB SERVICES, REST API & SOAP UI Testing)** tool and also to provide users with the knowledge required to work with Postman tool at a professional level. This course addresses planning and performing API tests, developing the pre-test & post-test scripts using Soap UI, executing the API tests and generating HTML reports using different tools like Newman.

The course covers real-world best practices for effective use of Soap UI tool for API testing with practical examples demonstrated. An assessment is included with the course and is a 30 minutes exam, 20 questions, multiple-choice exam which takes place on the final day of the training program.

### 2.Introduction of Web Services

In this module, you will learn about

- What is Web Services
- Explaining Types of Web Services SOAP and REST
- What is WSDL? Importance of it in web services.
- Difference between WSDL and SOAP protocol

### 3.Exploring SOAP UI Tool Basic Feature

- SOAP UI Installation/Documentation
- Calculator Web Service Example
- Creating Test Suite and Test Cases
- Local Web Service Installation and Practice
- Explaining Web Services Operation in Details

### 4.Web Services Testing (Manual) with SOAP UI

- Basic Assertion for Test Validation
- Advance Assertion for validating responses
- Strategies to use Xpath Assertion in Test
- Properties Access - Data Driven Strategies
- Accessing properties From test cases, Suit and Project Level
- How to send value from response to another requests property transfer

## 5. Webservice Automation Testing in SOAP UI

- Introduction to Groovy script Test setup
- Importance of Test Runner and Context Variable
- Test runner method for get and set property
- Accessing and updating the properties through Groovy method
- Parsing in xml request and response with holder applicaiton
- Triggering the soap request through Groovy code
- Automate the services (Practice)
- Validating the service response with Assertion

## 6. REST API Testing (Manual) with SOAP UI

- REST API concept
- REST API - Types of HTTP Method
- Practical example on GET and POST
- Important Notes on Google Map API
- sample code Google Add Place Download
- Rest API Test case building on SOAP UI
- Exercise: Data driving from custom properties
- Exercise: Property transfer usage in REST example

## 7. REST API Automation with SOAP UI

- JSON script Assertion Window - Automation
- Parsing the JSON response for API Validation
- Example on REST API automation with JSON as Response
- Example on REST API automation with XML as Response

## 8. REST API JSON Assertion and Validation

- Flicker API Introduction
- JSON Path extraction from response.
- JSON Assertion on parsed response
- Advance example on JSON Assertion

### 9. End to End Framework Design

- Framework Design Plan
- Understanding Preparing API Test from the functional document
- Building Rest API project in SOAP UI
- Create Test Cases from the defined API
- End to End Testing on Library API
- Installation Eclipse and Java for API Automation Testing
- Creation of JAVA API project from Framework
- WSDL project concept for Java Test Setup
- TestNG Integration to the Java API Test
- Different combination of WSDL API
- TestNG.xml file for one Single Trigger point to all test
- TestNG Command
- Command to Trigger TestNG Java API Test
- Html Reports and Jenkins Installation

### 10. Soap UI Protocol Extra Feature

- Basic of Pro version
- Data Sources
- Data Sink
- DataGen Type
- Test Case Debugging, Breakpoint

- Reporting Technique
- Jasper Report and Web Recording

### **11. Security Testing with Soap UI**

- List of Security Test
- Security Test Cases
- Security Testing - Practical Example

### **12. Database Testing with Soap UI**

- Database Concept
- Creating Databases
- SOAP UI JDBC Connection
- SQL Queries Testing with Soap UI
- SQL Builder - SOAP UI Pro

### **13. Load Testing on Rest API**

- Performance Testing Tool used for Testing REST API
- Putting Load on REST CALL

### **14. Web Session Manipulation**

- Quick Execution
- Simulate original HTTP(s) Traffic
- Compose HTTP(s) request
- Setting breakpoints
- Manipulate any HTTP(s) request or response

### **15. Performance Testing**

- Timeline for Performance Analysis
- Simulate HTTP compression
- Flagging performance bottlenecks

- Taking advantage of HTTP Caching
- Profile the performance of your web app

#### 16. Security Testing

- Fiddler security add-ons.
- Automate SSL Decryption

#### 17. HTTP/HTTPS Traffic Recording

- Archive & Playback recorded traffic
- Filter Capture Traffic
- Deep dive into session metrics
- Capture all HTTP(s) traffic

#### 18. Web Debugging

- Decrypt and decompress web sessions
- Analyzing session data
- Debug Traffic on any system
- Debug Traffic from any client and browser

#### 19. Customizable Free Tool

- Extending Fiddler with Fiddler script and .NET Code
- Fiddler extensions and add-ons
- Creating Rules
- Adding Inspectors
  - Request Inspectors
  - Response Inspectors

#### Interview Questions & Preparation for placement

#### Technical Interview Preparation

#### Mock Interview Preparation