SOAP, REST and Web Services Testing

This is a 6 weeks commitment course, 4 hours/week. We provide online/onsite instructor led courses for this course. Due to popular request we have recently added self-study materials for this course for a lower fee. Course contents are subject to change. Please look at the schedules page for current start date of the courses and fees information. Click here to contact us for any questions. Due to limited seats availability register and pay for the course at least a week before to guarantee a seat for you.

Bring your own laptop. All the installation instructions and step by step guide is provided to you ahead of time. Install the required software's and/or tools ahead of time for the next week. This will allow covering the course materials instead of wasting time on installation.

Contents

Week 1: - Introduction to Web Services and SoapUI

Week one focuses on Web Services, SOAP, Understanding XML, Creating and Installing Web Services, and Installing SoapUI

Installation

1. Installing SoapUI
2. NotePad++, XML plugin installation
3. **Eclipse IDE installation**

Presentation

1. **Web Services Architecture**
2. **Understanding XML**
   a. What is XML and why is it used
   b. XML Example
   c. XML Tree
   d. XML Syntax
   e. XML Elements
   f. XML Attributes
   g. XML Validation
   h. XML Validator
   i. XML Viewing
   j. XML CSS
   k. XML XSLT
3. **Understanding WSDLs**
   a. What is WSDL and difference from XML
   b. The WSDL Example
   c. The WSDL Document Structure
4. **Understanding SOAP**
   a. SOAP Example
   b. SOAP Messaging Model
   c. SOAP Namespaces
   d. SOAP over HTTP
   e. The SOAP Envelope
   f. The Message Header
   g. The Message Body
   h. SOAP Faults
   i. Attachments
   j. XML Schema
   k. Validating Message Content
   l. SOAP Encoding

5. Introduction to SOAP UI
   a. Creating WebServices Sample Project
   b. Functional Testing
   c. Creating test suites, test cases and test steps
   d. Assertions

Quiz:

Exercises:

1. Creating SoapUI Projects for Fahrenheit to Centigrade
2. Creating test suites, test cases, test steps and assertions

Week 2: - SoapUI/Pro & Data Driven Testing

Week two focuses on *understanding the features of SoapUI and SoapUI Pro*

Installation

1. Installing MySQL
2. Installing MySQL Workbench

Presentation

1. Quiz on Week 1
2. SoapUI Architecure
   - Example Project using Weather Services
     1. Properties
     2. Property Transfer
     3. Delay
3. SoapUI vs SoapUI Pro
4. Data Driven Testing
   - Example Currency Converter Project with Excel
   - Example Currency Converter Project with MySQL (db4free)/JDBC
   - Data driven testing using soapui and soapui Pro
   - Data Source and Data Sink
   - Database testing using soapui

Exercises:

3. Setting preferences
4. running tests

Week 3:-Creating Web Services using Eclipse IDE and Using Groovy in SoapUI

The focus of this week is on how to use groovy programs to customize scripts:

Presentations:

1. Introduction to Groovy
2. Difference and similarities between Groovy and Java
3. Writing scripts using Groovy
4. Using Groovy Scripts in SoapUI
5. Creating a WebServices Project in Eclipse IDE

Exercises:

Writing groovy scripts

Week 4: REST & Mock

Presentation

1. What is REST? Difference between REST and SOAP
2. REST service API testing, difference in approach
3. Test Coverage
4. Creating Mock Services
5. Testing mock services

Exercises:

6. Creating test suites for REST service
7. Creating test suites for Load Testing
8. Creating test suites for Mock Services

Week 5: Web Services Security and Interoperability
Presentations:

1. Web service interoperability
2. Web Services security
3. Monitoring
4. Integrating SoapUI reporting with Jenkins
5. Load Testing in SoapUI

Week 6: Code best practices and Maintenance ease

Presentations:

1. Refactoring common modules
2. Configuration files and avoiding overuse
3. Documenting changing SOAP APIs and deprecations
4. REST structure change tracking
5. Handling multiple version tests