



Selenium Automation Using Java Language

This is a 10 weeks commitment course, 4 hours/week with 15 min break. 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 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.

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Course Catalog for Selenium Automation Using Java Language

Week 1: - Introduction to Core Java & Net Beans IDE

Week one focuses on setting up the development environment for advanced Selenium course using Java language. Course starts with installing Notepad++, 7-Zip and co-bundle of JDK and NetBeans IDE.

Week one primarily concentrates on providing fundamental knowledge about Java and NetBeans IDE.

Presentation

1. Advanced Selenium Course Details
2. Installing NotePad++
3. Installing 7-Zip
4. Installing JDK and NetBeans
5. Core Java Basic Concepts
6. Core Java Control Flow Statements
7. NetBeans IDE Features
8. Loops using NetBeans
9. Core Java Questions
10. Installing Selenium IDE
11. Installing Selenium IDE Useful tools

Exercises:

1. Core Java Basic Concepts
2. Core Java Control Flow Statements
3. Loops using NetBeans
4. NetBeans IDE Project – CoreJava Project

Week 2: - OOP Concepts in Java – Creating Projects in NetBeans IDE

Week two focuses on Java's OOP (object oriented programming) concepts.

The key concepts covered in OOP principles using Java are:

- Abstraction (Objects)
- Encapsulation (Classes)
- Communication (Methods)
- Lifetime (Object)
- Hierarchies (Class)
- Polymorphism (Classes)

Using NetBeans IDE, a CoreShape Project is created to explain the various concepts of OOP principles in Java. The project contains the following classes

- Circle
- Square
- Rectangle
- Cube
- Cone
- Cuboid
- Shape
- Shape2D
- Shape3D
- DemoShape

Handfuls of Selenium IDE plug-in which will help you to create your test cases easily are introduced.

Presentation

1. Quiz on Week 1
2. Core Java OOP Concepts
3. Shape Hierarchy Using NetBeans IDE
4. Installing Selenium IDE Plug-ins & Usage

Exercises:

1. NetBeans IDE Project – CoreShape Project

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Week 3: - Interfaces in Java – JavaDoc Concepts

The week three materials covers core Java Interfaces concepts:

- Interfaces
- Extending Interfaces

The CoreShape Project is expanded to use the interfaces. The following interfaces are newly created

- ShapeColor
- ShapeLabel
- BaseColors
- RainbowColors
- ShapeRainbowColor

The following classes either created or updated

- Circle
- Rectangle
- DemoShape

The next section covers the JavaDoc Utility. During this session a JavaDoc API is created using NetBeans IDE. The CoreShape Project will be used as an example project to create the JavaDoc API information. Briefly Java Annotations are introduced and instruction to Install Selenium Server, Selenium Client Driver for Java, and Selenium for ANT Projects – NetBeans IDE Plugin are provided.

Presentation

1. Quiz on Week 2
2. Shape Hierarchy Using NetBeans - Interfaces
3. JavaDoc Concepts
4. Creating JavaDoc API Using NetBeans IDE
5. Introduction to Java Annotations
6. Installing Selenium Server
7. Installing Selenium Client Drivers for Java
8. Installing Selenium for ANT Projects – NetBeans IDE Plugin

Exercises:

1. NetBeans IDE Project for Interfaces
2. JavaDoc Required Files
3. CoreShape JavaDoc API Distribution Files

Week 4:- JUnit Concepts – Selenium Test Cases Using JUnit Framework

The week four focuses on introducing JUnit Framework to the students:

Introduces JUnit Concepts like

- org.junit
- org.hamcrest
- JUnit Annotations
- Order of Execution of Before Class, Before, AfterClass and After, etc
- Asserts
- Testing Setter and Getter methods
- @Test Annotation

DataPoints and Theories

- @RunWith
- org.junit.runner
- @DataPoints
- @Theory
- Theory.class
- ConeTest with DataPoints
- Running ConeTest in NetBeans IDE

Parameterized Parameters

- Parameterized Annotation
- org.junit.runners
- @Parameterized.parameters
- Parameterized.class
- Collection and Constructors
- Parameterized CubeTest
- Running CubeTest in NetBeans IDE

JUnit Test Suites and HTML Reports

- Creating JUnit Test Suites in NetBeans IDE
- Running Test Suites using NetBeans IDE
- Customizing NetBeans IDE to create JUnit HTML Reports

JUnit Selenium Test Case

- Recording Kavin School Search Test Case in Selenium IDE
- Understanding KeyPress events in Selenium
- Reviewing and Tweaking the KavinSchool in Selenium IDE
- Exporting the KavinSchool Search Test Case to Java

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- Creating NetBeans IDE Kavin School Search Project
- Running Selenium KavinSchool Search Project

Presentation

1. Quiz on Week 4
2. Exploring JUnit – White Box Testing
3. JUnit 4.x Concepts
4. JUnit DataPoints and Theories – White Box Testing
5. JUnit Parameterized Parameters – White Box Testing
6. JUnit Suites and Reports – White Box Testing
7. JUnit Selenium Test Cases - KavinSchool Search Project

Exercises:

1. Shape Project - JUnit Source Code
2. Using ANT - CoreShape JUnit Project
3. Using NetBeans IDE - KavinSchool Search Project - Testing using Selenium with JUnit Framework

Week 5:- ANT Concepts – Automating Builds Using ANT

The week five focuses on installing and using the popular build tool Apache ANT:

The basic concept of ANT is explained during this class, which includes:

- ANT Project
- Target
- Tasks
- Properties
- Exec DOS commands
- Opening different Browsers using ANT
- Sending Emails using ANT

Building with ANT – Core Java covers the following:

- Tasks for Java compilation
- Jar files creation with manifest
- Folder Structure and Flow control
- Creating build for CoreJava Project

Starts with building CoreShape Project, main goals are to automate:

- Compiling a Java Project
- Creating a Distribution Jar file
- Running Java program
- Redirecting the output to a file
- Setting the build number
- Creating JavaDoc
- Automatically Copying JavaDoc related files

Next chapter explains advanced concepts like ANT Loggers and Listeners:

- DefaultLogger, NoBannerLogger, MailLogger
- TimestampedLogger, BigProjectLogger, XmlLogger
- ProfileLogger

Presentation

1. Quiz on Week 4
2. Installing ANT
3. Installing JavaMail
4. ANT - Concepts
5. Exploring ANT
6. Building with ANT - Core Java

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7. Building with ANT - Shape Project
8. ANT Listeners and Loggers - Shape Project

Exercises:

1. ANT Examples like DOS Commands, Sending e-mails etc
2. Shape Project automation using ANT
3. ANT-Listeners and Loggers Commands

Week 6:- Selenium JUnit Framework Project

The week six will cover the remaining sections of Week 5 on ANT concepts followed by an example project for Selenium JUnit Framework:

Energy Efficient Project

- Record, Review and convert test cases for the following websites
 - Yahoo
 - GE
 - Bing
 - Google

Presentation

1. Quiz on Week 5
2. Creating Test Cases in Yahoo, GE, Bing and Google
3. Converting test cases to Java JUnit Framework
4. Creating and running a test suite using NetBeans IDE

Exercises:

1. Using NetBeans IDE – Energy Efficient Project using JUnit Framework

Week 7:- TestNG Concepts and Selenium Test Cases Using TestNG

The week seven focuses on introducing TestNG Framework to students:

Installing TestNG

- Standalone version of TestNG (stand-alone version)
- NetBeans IDE – TestNG Plugin

TestNG concepts are explored with CoreShape Project

- History of TestNG
- Config Annotations
- Config Annotations Attributes
- Order of Execution of Config annotations
- testng.xml structure

TestNG Parameters

- Parameters in TestNG
- Include/exclude certain groups
- Defining Groups of Group(s)
- Re-running failed tests
- Asserts

TestNG Data Providers

- Data Providers in TestNG
- Exceptions handling
- Defining Suites of suite
- TestNG Ant Task

TestNG Selenium Test Case

- Converting KavinSchool Search Project in TestNG Framework
- Executing KavinSchool Search Project using NetBeans IDE
- Executing KavinSchool Search Project using ANT

Presentation

5. Quiz on Week 6
6. Installing TestNG
7. Installing TestNG Plugin for NetBeans IDE
8. TestNG Framework Concepts
9. TestNG Parameters – White Box Testing

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10. TestNG Data Providers – White Box Testing
11. TestNG Selenium Test Case - KavinSchool Search Project

Exercises:

2. Using ANT - Testing CoreShape Project using TestNG Framework
3. Using NetBeans IDE - Testing CoreShape Project using TestNG Framework
4. Using NetBeans IDE – KavinSchool Search Project – Selenium TestNG Framework

Week 8:- Selenium TestNG Framework Project

The week eight provides TestNG Framework concepts in detail

TestNG Selenium Java Robots

- Java Robots Concepts
- KeyEvents in Java
- Introduction to SugarCRM Website
- Recording Selenium IDE Test Case for SugarCRM Keys Project
- Reviewing SugarCRM Keys Test Case in Selenium IDE
- Exporting SugarCRM Keys Test Case into TestNG Framework
- Reviewing TestNG TestCase to handle multiple browsers
- Reviewing Selenium Test Cases to use Java Robots

Next section touches AJAX Concepts and how to test AJAX web-pages in Selenium

AJAX concepts are explored with GoogleSearch Project

- Recording GoogleSearch Test Case using Selenium IDE
- Reviewing GoogleSearch Test Case to work in Selenium IDE
- Exporting GoogleSearch Test Case in TestNG Framework
- Reviewing the Testcase and running GoogleSearch Project in NetBeans IDE using Selenium

Presentation

1. Quiz on Week 7
2. Java Robots API Concepts
3. Using Java Robots in Selenium Test Cases
4. Creating Selenium Test Case in SugarCRM Application using TestNG Framework
5. AJAX Concepts and handling in Selenium
6. GoogleSearch project using TestNG Framework with Selenium

Exercises:

- **SugarCRM Keys Project**
 - Using Selenium IDE - SugarCRM Keys Project
 - Using NetBeans IDE - SugarCRM Keys Project - Testing using Selenium with JUnit Framework
 - Using NetBeans IDE - Testing SugarCRM Keys Project using Selenium with TestNG Framework
- **GoogleSearch AJAX Project**
 - GoogleSearch using Selenium Framework - NetBeans Project

Week 9:- Implementing Data Driven Testing in Selenium Projects

The week nine will cover the remaining sections of Week 8 on TestNG concepts followed by an example project for Data Driven Testing in Selenium:

Zen Photo Project

- Data Driven Testing
 - Property Files
 - CSV Files
 - Text Files

Presentation

1. Quiz on Week 8
2. Creating Test Cases in Zen Photo Application
3. Converting test cases to Java JUnit Framework
4. Creating and running a JUnit test suite using NetBeans IDE
5. Data Driven Testing of ZenPhoto Application

Exercises:

1. Using NetBeans IDE – ZenPhoto Application Project

Week 10:- DBUnit Concepts and Selenium DBUnit Project

The week ten class introduces DBUnit Concepts and provides an example for using DBUnit along with Selenium

DBUnit

- Installing NetBeans Modules for DBUnit
- DBUnit Concepts

Exploring TellAFriend Project

- Recording and reviewing Selenium IDE Test Case for TellAFriend Form
- Concepts of E-Mail Validation and using Yahoo E-mail for validation
- Create NetBeans IDE JUnit Framework Project for TellAFriend Project
- Create NetBeans IDE Selenium Framework Project for TellAFriend Project
- Create NetBeans IDE TestNG Framework using ANT for TellAFriend Project

DBUnit concepts are explored using TellAFriend Project

- Creating TellAFriend Table
- Inserting Rows
- Creating dataset.xml
- Checking the loaded data count
- Comparing the queryset

Presentation

1. Quiz on Week 9
2. Installing MySQL WorkBench
3. Installing DBUnit - NetBeans IDE Plugin
4. DBUnit Concepts
5. Using NetBeans IDE for Database Access
6. TellAFriend Project testing using DBUnit

Exercises:

- **TellAFriend Project**
 - TellAFriend using JUnit Framework - NetBeans Project
 - TellAFriend using TestNG Framework - ANT Project
 - TellAFriend using Selenium Framework - NetBeans Project
- **TellAFriend DBUnit Project**
 - TellAFriend DbUnit - NetBeans Project
 - TellAFriend DbUnit - PHP Source Code
 - TellAFriend DbUnit - SQL Source Code