



Introduction to Selenium Using Java Language

This is a 6 weeks commitment course, 6 hours/week with 30 min break. We currently provide ONLY onsite instructor led courses for this course. 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 during the course.

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Week 1: - Introduction to Selenium IDE

This course starts with installing Selenium IDE in Mozilla Firefox. Creating simple test cases that search “Energy Efficient” key word in different domain’s search engines. You will create a Selenium Test Suite using the “Energy Efficient” test cases in Selenium IDE. The above exercises “Energy Efficient” test case allows you to understand how Selenium is dependent on the HTML structure of the application under test (AUT).

You can install the useful Firefox add-ons like Firebug, Dom Inspector, Regular Expression Tester, HTML Validator, etc. These tools will allow you understand the locator strategies, and how to aptly provide locators for different commands in Selenium. Optionally you can also install 7-Zip for opening Zipped files, and Notepad++ which allows you to look out the source codes of different programming languages.

Quick Tour of Selenium IDE - The first section introduces and provides detailed description about each of the features available within Selenium IDE. Age classification exercises will demonstrate to the students how to use different Selenium IDE options. The second section provides advanced features about how to add your own custom formatters for Selenium. The Google Map exercise demonstrates how to specifically look for an element within a page.

Optionally provides overview about Software testing life cycle (STLC) in parallel with Software development life cycle. This section is theory; students are encouraged to go through the materials on their own.

Installations:

1. Installing Firefox
2. Installing Selenium IDE
3. Installing useful tools for Selenium (Firefox Add-ons)
4. Installing 7 Zip
5. Installing NotePad++

Presentation:

1. The Selenium Project
2. Selenium Test Cases and Test Suites
3. Quick Tour of Selenium IDE - Simple Features
4. Quick Tour of Selenium IDE - Advanced Features (optional)
5. Software Testing Life Cycle (optional)
6. Exercises On Selenium IDE
7. Assignments
8. Selenium Test Suites Exercises Sheet

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Exercises:

1. Energy Efficient Test Cases for
 1. Yahoo
 2. GE
 3. Bing
 4. Google
2. Energy Efficient Test Suite
3. Export to Different languages
4. Age Classification Problem
5. Google Maps Direction Problem
6. Customized Formats to convert the Selenium Test Cases

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Week 2: - Selenium IDE Concepts and Commands

The week 2 starts with Selenium concepts like actions, assessors and asserts and explains the selenium locators and pattern matchers.

The Selenium commands are provided with examples:

- Variable Substitution
- Stored Vars and Maps
- JavaScript Evaluation
- Handling Alerts, Prompts and Confirms
- Browser commands GoBack and refresh
- Navigator Properties
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The second section introduces Regular Expression Tester Tool for Firefox plugin. Introduces regular expression Meta characters and demonstrates within Regular Expression Tester tool how to create different regular expressions from the scratch. How to use regular expressions Selenium test cases are shown with examples like ShowWinName and UserInputForm.

Installations:

1. Installing Selenium Plug-ins & Usage

Presentation

- 1) Quiz on Week 2
- 1) Selenium Commands
 - a) Actions
 - b) Accessors
 - c) Asserts
- 2) Selenium Locators and Pattern Matchers
 - a) Using Regular Expressions in Selenium IDE
 - b) Using Firebug with FirePath and Firefinder
- 3) Exercises on Week 3
- 4) Answers for Week 2

Exercises:

1. Variable Substitution - HelloWorld
2. StoredVars – Yahoo Login
3. JavaScript Evaluation – Barnes & Nobles

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4. Alert – onload alert and click alert
5. GoBack and Wait
6. Navigator Properties
7. Test Suite on Commands
8. ShowWinName – Regular Expression
9. UserInputForm – Regular Expression
10. Examples for Narrating Test Cases
11. Solved Example for Devry Popup Window
12. Different ways to find Page Load Time
13. List of courses – Example for using XPath Count

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Week 3: - Introduction to Selenium RC & JUnit Framework

The week three focuses on introducing JUnit Framework to the students along with Selenium Remote Control concepts

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

Parameterized Parameters

- Parameterized Annotation
- org.junit.runners
- @Parameterized.parameters
- Parameterized.class
- Collection and Constructors
- Parameterized CubeTest

Selenium Test Cases using JUnit Framework

- 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
- Creating Eclipse IDE Kavin School Search Project
- Running Selenium KavinSchool Search Project
- Using DataPoints and Theories using Selenium
- Using Parameterized parameters in Selenium

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Installations:

1. Installing JDK
2. Installing Eclipse IDE
3. Installing Selenium Server
4. Installing Selenium Server Launcher

Presentation

1. Quiz on Week 2
2. Selenium RC Overview
3. Selenium RC Browser Modes
4. Running Selenium RC in Interactive Mode
5. Using Selenium Server Launcher
6. Exploring JUnit & JUnit 4.x Concepts
7. JUnit DataPoints and Theories – Using with Selenium RC
8. JUnit Parameterized Parameters – Using with Selenium RC
9. JUnit Suites and Reports – Using with Selenium RC
10. JUnit Selenium Test Cases - KavinSchool Search Project

Exercises:

1. Example for Selenium RC in interactive mode
 1. Using Session ID
 2. Without Using a Session ID
2. Using Eclipse IDE - KavinSchool Search Project - Testing using Selenium with JUnit Framework

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Week 4:- Implementing Data Driven Testing in Selenium Projects

The week four will cover the Data Driven Testing in Selenium:

Zen Photo Project

- Data Driven Testing
 - Property Files
 - CSV Files
 - Text Files
 - Excel File
 - MySQL Database

Presentation

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

Exercises:

1. Selenium IDE – ZenPhoto Test Case
2. Using Eclipse IDE – ZenPhoto Application Project

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Week 5:- Introduction to Selenium Web Driver, Code Coverage and Jenkins

Introduction to Web Driver

- Introduction to Selenium Web Driver
- Using the following Drivers
 - Firefox
 - Internet Explorer
 - Google Chrome
 - HTMLUnit – Headless browser
- Bing Energy Efficient Web Driver Project

Simple Calculator Project

- Provides how to use code Coverage tool Cobertura within Eclipse IDE, and Jenkins
- Allows you to understand how to use Maven for your builds
- Allows you to understand how the code changes will break your builds

Installations:

1. Install Maven Ver1
2. Install TortoiseSVN Ver1
3. Install Subclipse Ver1
4. Install M2E Ver2
5. Install eCobertura Ver1
6. Install Jenkins Ver1
7. Install Jenkins Plugins Ver1
8. Configure Jenkins Ver1

Presentation

1. Introduction to Web Driver
2. Using Different drivers in Web Driver
3. Using WebDriver for different browsers
4. Simple Calculator Project - Create in Eclipse IDE
5. Simple Calculator Project - Adding to Subversion
6. Simple Calculator Project - eCobertura (Eclipse Plugin) Usage
7. Simple Calculator Project - Cobertura - Maven Report Generation
8. Simple Calculator Project - Jenkins – Continuous Integration

Exercises:

- **Web Driver Project**

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- Bing Energy Efficient Project
- **Junit Maven Jenkins Subversion Integration Project**
 - Simple Calculator

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Week 6:- Page Objects Pattern & Selenium Grid

Web Driver

- Page Objects Pattern
- Creating osTicket Project using Page Objects Pattern

Selenium Grid

- Configuring and running Selenium test cases using Selenium Grid

Presentation

1. WebDriver Page Object Pattern
2. Creating WebDriver Framework using Page Objects Pattern
3. Selenium Grid Overview
4. Selenium Grid Architecture
5. Selenium Grid Configuration
6. Running Selenium Test Cases using Selenium Grid in IE, FF and GC

Exercises:

- **Web Driver Page Object Pattern Project**
 - osTicket Project
- **Running Selenium Test Cases in Selenium Grid**
 - Bing Energy Efficient Project