

Web Testing with Selenium 4: Concepts and Techniques

Course Summary

Description

Selenium is an open source testing tool that automated testing of Web based applications. This is a one day, comprehensive introduction which assumes no prior knowledge of testing or any programming skills. The course starts with an exploration of the Selenium 4 architecture and the Selenium "ecosystem," which is the collection of tools and related components that work with Selenium so that students can understand exactly what Selenium does and how Selenium test scripts work. Building on that base knowledge, the various Selenium testing best practices are covered along with how Selenium should be integrated into a larger testing strategy.

The latest Selenium IDE is used to write and execute scripts so that students can focus on what Selenium is doing without having to write code. Through the hands on work, students learn how to build high quality scripts that are robust and consistent testing protocols and best practices, as well as having a chance to experiment with the different Selenium capabilities and commands.

Objective

After the course, students will be able to:

- Use all of the Selenium commands correctly and effectively.
- Write high quality and maintainable Selenium test scripts.
- Evaluate and optimize a Selenium test script.
- Design a Selenium test suite to meet testing goals and objectives.
- Troubleshoot common problems encountered when running a Selenium test.
- Convert testing requirements into Selenium test suites.
- Develop Selenium execution protocols for execution: standalone or within a larger testing environment – for example, Acceptance Test Driven Development

Audience

This course is designed for testers or others who need to integrate Selenium into their testing activities but don't need to know how to write Selenium Web Driver code. It is also designed to provide developers, who will be writing Selenium Web Driver code, a conceptual understanding of the architecture, functionality and capabilities of Selenium.

Topics

- The Selenium Ecosystem
- The Selenium Web Driver
- Script Basics
- Testing with Selenium
- Finding and Working with Web Elements
- Trouble Shooting Selenium
- Planning a Selenium Project

Prerequisite

There are no prerequisites however a basic understanding of HTML is recommended.

Duration

One Day

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Course Outline

- I. ***The Selenium Ecosystem***
 - A. What Selenium 4 is and how it came to be
 - B. Selenium components: Web Driver, language bindings, Selenium Grid, etc.
 - C. SeleniumHQ: The official Selenium project
 - D. Approved third party extensions
 - E. The Selenium IDE
- II. ***The Selenium Web Driver***
 - A. The parts of the Web Driver
 - B. How Selenium interacts with different browsers
 - C. The W4C standard based on Web driver
 - D. How the Web Driver interacts with a specific web page
- III. ***Script Basics***
 - A. Structure of a Selenium script
 - B. Recording and playing back a script in the IDE
 - C. Why we use the IDE for script development
 - D. Reading from a Web page
 - E. Manipulating elements on a Web page
 - F. Writing pass/fail criteria for a script
- IV. ***Testing with Selenium***
 - A. Interface testing with Selenium
 - B. Acceptance and functional testing with Selenium
 - C. Integrating Selenium into other tools: Cucumber, etc
 - D. Regression testing with Selenium
 - E. Test planning with Selenium scripts
 - F. Test execution with Selenium scripts
 - G. Troubleshooting common test issues
- V. ***Finding and Working with Web Elements***
 - A. The concept of a "selector"
 - B. Finding elements by HTML attributes (id, name, link, etc)
 - C. Finding elements by XPATH selectors
 - D. Finding elements with CSS selectors
 - E. Using "accessors" to read information
 - F. Using "actions" to modify a Web Page
 - G. Using "assertions" to test a Web Page
 - H. Browser navigation commands
 - I. Timeouts and page loading issues
- VI. ***Trouble Shooting Selenium***
 - A. Typical Selenium issues
 - B. Issues that can only be addressed in code
 - C. Common underlying causes for script failures
 - D. Issues with pop-up, roll-overs, AJAX and others
- VII. ***Planning a Selenium Project***
 - A. Developing testing goals
 - B. Verifying the test cases
 - C. Developing the use cases for interaction
 - D. Recording the Selenium script suite
 - E. Validating and Verifying the suite