

What is Selenium?

Selenium is a suite of different tools meant for browser automation, including Selenium WebDriver and Selenium Grid. Although not limited to be used for testing web applications, it has become the most sought after tool by software testers. With support for all of the widely used browsers, it has also grown beyond just being another software testing library. It is the backbone of countless browser automation tools, APIs and frameworks. The WebDriver interface introduced by Selenium WebDriver is under review for becoming a W3C standard, which would further increase its importance in the space of test automation.

About the Course

SeU - Certified Selenium Engineer (CSE) is a practitioner level course for testers involved in web test automation. The course covers Selenium as a browser automation library from the ground up and includes coverage of advanced concepts such as page object design, custom implementation of listeners etc. Test automation constructs and design are kept to a minimum to better focus on code constructs that enable usage of Selenium in a properly designed manner. This course, together with future test automation design-focused courses from Selenium United, provides testing practitioners everything that is required to become successful test automation engineers in the web test automation space.

Who should take it?

If you are a tester mainly focused on manual testing and want to step into the world of test automation, this course is for you.

If you are a test automation engineer who has just started with Selenium or you have done test automation with other tools, and now want to explore Selenium, this course is for you.

If you are an engineer with an intermediate level of Selenium knowledge, and require some support on how the Selenium components best fit together for professional Selenium-based automation, this course is also for you.

How is it different from other similar courses?

SeU - Certified Selenium Engineer (CSE) offers its participants the un-diluted Selenium experience. Other similar courses tend to cover non-Selenium topics such as TestNG, Reporting, CI, Cucumber etc, which tends to bulk up the course, but alter the focus on key features of Selenium that are crucial in practice. This is why SeU - Certified Selenium Engineer (CSE) allows the participants to focus more on the critical Selenium concepts, so they better understand how to implement Selenium into their daily work.

Another important differentiator is that Selenium United believes in the importance of practical training, which is why over 70% of the course consists of hands-on exercises, which allows participants to also gain experience and implement as they learn.

Course Overview

- SeU - Certified Selenium Engineer (CSE) is a hands-on course that deals with the Selenium concepts in a very practical way (30% theory, 70% practical)
- This course is a comprehensive certification aimed at anyone involved in developing and implementing automated web app automation using Selenium
- This course also provides full coverage of web test automation using Selenium, including all relevant techniques and terminology from the most basic to the most advanced concepts
- SeU - Certified Selenium Engineer (CSE) is a 3-day course, followed by a 60-minute certification exam at the end of the last day.

Course Benefits

- Participants receive to-the-point information in a practical setting that is relevant for today's professional testers (30% theory, 70% practical)
- Material developed by an international team of experts and available for licensing
- Certificate issued by an internationally renowned certification body
- Supported by important companies in the industry

Prerequisites

- Basic knowledge of Eclipse is recommended
- Basic knowledge of core Java is mandatory (refer to Java knowledge prerequisites at the end of this document)

Exam Guidelines

- 40 multiple-choice questions
- 60 minutes
- No negative marking
- Online or paper-based
- 65% required to pass (26/40)

Course Outline

Chapter 0 - Course Introduction

- Rules of the Selenium United training and certification program
- Exam related information

Chapter 1 - Web UI Automation

- Introduction
- UI Automation with Actual Browsers
- UI Automation with Actual Browsers with Screen Size Simulation
- Using Headless Browsers
- Web UI: User vs Browser point of view

Chapter 2 – Introduction to Selenium

- History
- Power of Selenium
- Selenium Suite
- Simplified Selenium Architecture

Chapter 3 - Automating the Web UI with Selenium

- Introduction
- Browser Level Automation
 - Launching/closing different browsers
 - Navigation
 - Inquire window and URL information
- Page Level Automation
 - Inquire page level information
 - Element Identification in depth
 - ID
 - Name
 - Class Name
 - Link Text
 - Partial Link Text
 - CSS Selectors – coverage of different variants
 - Xpath – coverage of different variants
- Element Level Automation
 - State inquiry
 - Basic Actions

Chapter 4 - Advanced Automation Constructs using Selenium

- Better Waiting
- Handling Dropdown lists using Select object
- Element Multi-Match Handling
- Nested Element Handling
- Upload File
- Handling Alert
- Handling Windows/Tabs
- Handling Frames
- Taking Screenshots
- JavaScript execution
- Action Chains
- Keyboard interaction
- Handling Cookies
- Headless Browser Automation with HtmlUnitDriver

Chapter 5 - Putting Together a Basic Framework

- Long Exercise: Automating End To End Scenarios
- Refactoring the code to create and use a WebAutomator class which wraps construction and interactions with WebDriver
- Next Steps: (High Level Walkthrough and Demos)
 - Implementing Event Listener
 - Page Object Design Pattern
 - Using Page Factories
 - Pages as Loadable Components
 - Selenium Grid

Java Knowledge Prerequisites

The facilitator of the workshop will briefly cover relevant Java concepts as they are used in the course. Please note that Java concepts cannot be fully explained within this 3-day course. An extra day may be required if these prerequisites aren't met by the candidates.

Participants who are well versed with the following concepts would be able to focus on the Selenium concepts in a much better manner, without diluting their attention to understand Java constructs.

No direct core Java questions would be included in the exam.

- Concept of main() method
- Compiling and running Java code
- Primitive data types

- Classes counterparts of primitive data types (e.g. Integer for int)
- Arrays
- Basic collections: List, Map
- String formatting and manipulation
- System.out and System.err
- Conditional control structures: if/else/else if, switch
- Looping Control structures: for (the 2 styles), while
- Exception Handling – throw, throws, try-catch-finally, Exception hierarchy
- Writing a Class with getter, setter and other methods
- Constructors and Class instantiation
- Class variables vs object variables
- Access modifiers – public, private, protected
- Class methods vs object methods
- Enum's
- Packages
- Overloading of methods
- Inheritance
- Abstract classes and abstract methods
- Overriding of methods
- Object Composition

Free E-Learning Video Tutorial Series for meeting the Prerequisites of CSE

Explore most of the Java prerequisites with a tutorial series by Derek Banas on YouTube:

<https://www.youtube.com/watch?v=TBWX97e1E9g&list=PLE7E8B7F4856C9B19>