

A4Q Selenium Tester Foundation Course Overview

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Alliance for Qualification



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Revision History

Version	Date	Remarks
Version 2018	5 August 2018	1. Release version

General Description

The Selenium Tester Foundation is a practical training course aimed at test professionals who desire a basic understanding of Selenium WebDriver for creating web application tests. Participants will learn about factors to consider when deciding to automate testing as well as specific techniques for navigation, interacting with GUI elements, logging, reporting, and more. Upon the successful completion of the course, a participant will be able to create and run Selenium WebDriver tests without supervision.

This is a three-day course with time for the exam on the third day. It consists of equal parts lecture/demonstrations and hands-on exercises. The certification exam is a 60 minute, 40 question, multiple-choice exam. Attendance at an accredited Selenium Tester Foundation training course is highly recommended. To attain the Selenium Foundation certification candidates must pass the A4Q Selenium Tester Foundation certification exam.

By the end of the course, attendees should be able to:

- Correctly apply test automation principles to build a maintainable test automation solution
- Be able to choose and implement correct test automation tools
- Be able to implement Selenium WebDriver scripts that execute functional web application tests
- Be able to implement maintainable scripts

This course is ideal for automators and those who want to learn automation using the Selenium WebDriver toolset. While this course is accessible to anyone wanting to acquire a basic, hands-on knowledge of Selenium, the main audiences are:

- People with no test automation experience who are starting to automate in Selenium (or who want to get a job doing that)
- People with some GUI test automation experience who are new to Selenium or starting to automate in Selenium (or who want to get a job doing that)
- People with some non-GUI test automation experience who are new to Selenium and starting to automate in Selenium (or who want to get a job doing that)

Attendees should have general knowledge of basic programming and some knowledge of Python.

Course Outline and Timing

Chapter 1. Test Automation Basics (105 Min)

Chapter 2. Internet Technologies for Test Automation of Web Applications (195 Min)

Chapter 3. Using Selenium WebDriver (495 Min)

Chapter 4. Preparing Maintainable Test Scripts (225 Min)

Learning Objectives

1. Chapter 1

STF-1.1 (K2) Explain the objectives, advantages, disadvantages and limitations of test automation

STF-1.2 (K2) Understand the relation between manual and automated tests

STF-1.3 (K2) Identify technical success factors of a test automation project

STF-1.4 (K2) Understand risks and benefits of using Selenium WebDriver

STF-1.5 (K2) Explain the place of Selenium WebDriver in TAA (Test Automation Architecture)

STF-1.6 (K2) Explain the reason and purpose for metric collection in automation

STF-1.7 (K2) Understand and can compare objectives of using Selenium toolset (WebDriver, Selenium Server, Selenium Grid)

2. Chapter 2

STF-2.1 (K3) Understand and can write HTML and XML documents

STF-2.2 (K3) Apply XPath to search XML documents

STF-2.3 (K3) Apply CSS locators to find elements of HTML documents

3. Chapter 3

STF-3.1 (K3) Use appropriate logging and reporting mechanisms

STF-3.2 (K3) Navigate to different URLs using WebDriver commands

STF-3.3 (K3) Change window context in web browsers using WebDriver commands

STF-3.4 (K3) Capture screenshots of web pages using WebDriver commands

STF-3.5 (K4) Locate GUI elements using various strategies

STF-3.6 (K3) Get state of GUI elements using WebDriver commands

STF-3.7 (K3) Interact with GUI elements using WebDriver commands

STF-3.8 (K3) Interact with user prompts in web browsers using WebDriver commands

4. Chapter 4

STF-4.1 (K2) Understand which factors support and affect maintainability of test scripts

STF-4.2 (K3) Use appropriate wait mechanisms

STF-4.3 (K4) Analyze GUI of a system under test (SUT) and use Page Objects to make its abstractions

STF-4.4 (K4) Analyze test scripts and apply Keyword Driven Testing principles to building test scripts

Course Materials

This course includes the following materials:

Name	Description
Course Outline	A general description of the course along with learning objectives, course materials and an outline of the course topics, including approximate timings for each section.
Noteset	A set of approximately 300 PowerPoint slides covering the topics to be addressed.
Exercise Solutions	A set of detailed solutions for all exercises in the course.
Selenium Foundation Mock Exam	A practice exam containing questions and answers to assess your readiness for the Selenium Foundation exam.
Exercise Materials	Includes installable virtual machine complete with tools, exercises, and exercise solutions
Bibliography and resources	A set of further readings, Web sites, tools and other resources to help implement the concepts.

The printed course materials are provided in a binder in a way which makes it convenient for course attendees to remove portions as needed for reference; e.g., during exercises.

Session Plan

The course runs for three days, with one hour set aside on the third day for the Selenium Foundation exam if desired. Each day is about 360 minutes of class time, from 9:00 to 5:30. For accredited course offerings, material is covered as described.

For custom courses, material may be deleted, added, or expanded upon as needed.

Please note that timings are approximate, depending on attendee interest and discussion. All of the lectures include exercises and/or knowledge-check questions.

The following shows this session plan in relationship to the chapters and sections of the Selenium Tester Foundation syllabus.

Introduction and Review (20 minutes)**1.0 Test Automation Basics (105 minutes)**

- 1.1 Test Automation Overview (21 minutes)
- 1.2 Manual vs. Automated Tests (15 minutes)
- 1.3 Success Factors (15 minutes)
- 1.4 Risks and Benefits of Selenium WebDriver (12 minutes)
- 1.5 Selenium WebDriver in Test Automation Architecture (12 minutes)
- 1.6 Reasons and Purpose for Metric Collection in Automation (12 minutes)
- 1.7 The Selenium Toolset (15 minutes)

2.0 Internet Technologies for Test Automation of Web Applications (195 minutes)

- 2.1 Understanding HTML and XML (65 minutes, one exercise)
- 2.2 XPath and Searching HTML Documents (65 minutes, one exercise)
- 2.3 CSS Locators (65 minutes, one exercise)

3.0 Using Selenium WebDriver (495 minutes)

- 3.1 Logging and Reporting Mechanisms (45 minutes, one exercise)
- 3.2 Navigate to Different URLs (45 minutes, one exercise)
- 3.3 Change the Window Context (60 minutes, three exercises)
- 3.4 Capture Screenshots of Web Pages (30 minutes, one exercise)
- 3.5 Locate GUI Elements (150 minutes, five exercises)
- 3.6 Get the State of GUI Elements (75 minutes, three exercises)
- 3.7 Interact with GUI Elements (60 minutes, two exercises)
- 3.8 Interact with User Prompts in Web Browsers (30 minutes, one exercise)

4.0 Preparing Maintainable Test Scripts (225 minutes)

- 4.1 Maintainability of Test Scripts (40 minutes)
- 4.2 Wait Mechanisms (20 minutes)
- 4.3 Page Objects (60 minutes, one exercise)
- 4.4 Keyword Driven Testing (105 minutes, two exercises)