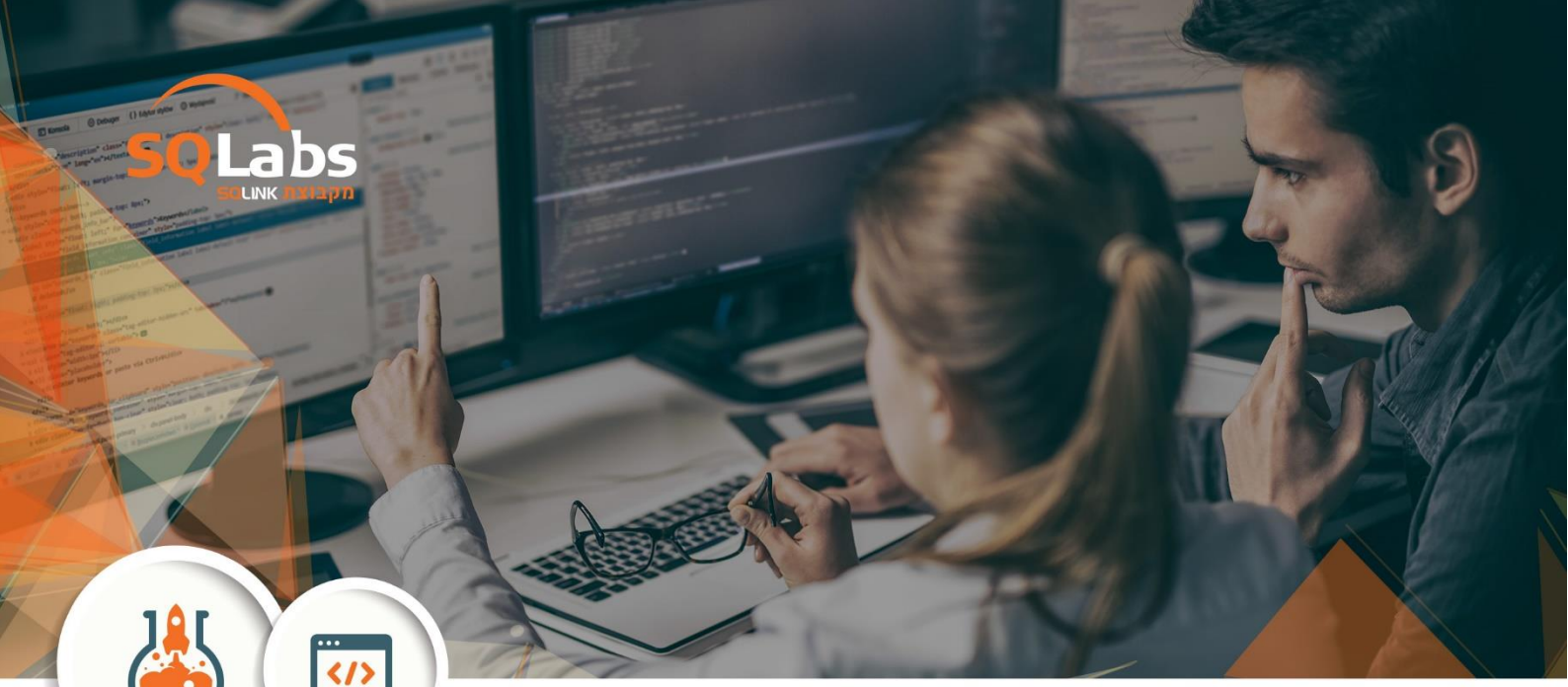

Advanced automation – 40 Hours

Overview

Enhance the knowledge and capabilities of the automation engineer by providing him with advanced concepts, techniques and tools in order to transform basic testing scripts into an end-to-end automatic testing solution coupled along with a strong CI process that tests your product for various client environments – under different browsers, OS and mobile devices.

Intended Audience / Who should attend

Anyone with the following knowledge:

- Basic programming skills (in any OOP language), including:
  - Input / output
  - Variables
  - Flow control (if, for, while, switch)
  - Data structures: arrays, Lists
  - OOP: inheritance, encapsulation, polymorphism, abstract class, interface
- Familiarity with basic web technologies: HTML, CSS
- Hands-on experience with Selenium:
  - Basic WebDriver commands (FindElements, Navigate, Click, GetText…)
  - Locators (Id, css, xpath)
  - Working with a testing framework (such as TestNG): suites, before/after methods
  - Implicit and explicit waits

Course Methodology

Ten sessions of about three full hours each. We believe that only practical hands on experience will help fully understand the material at hand. For this reason most sessions includes a practical exercise where the actual hands on experience can be gained.

Syllabus

א. Topic 1 – Correct structure of an automation project

- Infra
  - Wrapping Selenium capabilities
  - WebDriverFactory
  - HTML reporter
  - Configuration from file
- PageObjects
  - AbstractPage
- Tests
  - AbstractTest

Practical exercise: Building a new test project for our demo application

ב. Topic 2 – Advanced concepts

- Advanced xpath locators
- Selenium DB testing
- Custom explicit wait functions
- Handling reading and parsing emails (SMTP + regex)

Practical exercise: Integrate new capabilities in our project for better stability

ג. Topic 3 – Selenium grid & Remote execution

- Parallel test execution
- Selenium Grid basics
- Introduction to Docker
- Docker and Selenium
- Selenoid

Practical exercise: Run our tests on a browser inside Docker container

ד. Topic 4 – React testing

- React overview
- Selenium issues handling react apps
- Best practices testing react apps

Practical exercise: Compose tests for a react application

ה. Topic 5 – Source control

- The concept of source control
- Git basics
- Practical git
- Using git within IntelliJ
- Git flow

Practical exercise: Creating and working with code repository

ו. Topic 6 – CI & Selenium

- Continuous integration concept
- Jenkins overview
- Creating Basic CI process using Selenium
- Jenkins pipelines

Practical exercise: Creating a Jenkins job that runs our UI tests in parallel

ז. Topic 7 – Appium

- Appium overview
- Setting up Appium environment
- Identifying elements in native app
- Creating and running tests for Android & iOS

Practical exercise: Test our app on a mobile device

ח. Topic 8 – API testing

- The world of micro services
- What is API
- REST vs. SOAP
- The HTTP Protocol
- Using common tools for API testing

Practical exercise: Composing and running various API tests