



Automation Basics

Overview

Providing the students with all the required basics tools, techniques and concepts in order to start their new journey in the world of Automation. We will be learning and working with the leading and most popular web automation framework today: Selenium. We will cover various topics, starting from writing basic standalone tests, creating testing infrastructure needed for large scale projects, learn to write stable and easy to maintain tests using the Page objects design pattern, using correct syncing techniques, advanced reporting frameworks and advanced test execution using TestNG and its various capabilities.

Target audience

Manual QA personal, developers and anyone interested in writing and executing automatic tests. Basic background in any OOP programming language is required. (Using Variables, flow control, functions)

Syllabus

Session 1 – Programming basics and overview

- Automation overview (Types, technologies, shortcomings)
- Recording Vs programming automation
- Introduction to computer programming
- Java overview
- First Java application
- Basic Java syntax
- Using IntelliJ
- Variables

Practical exercise: Create various applications with input/variable manipulation/output

Session 2 – Flow control

- If statements
- And, Or
- Switch

- Loops – While, Do, For

Practical exercise: Create various applications that utilize new content

Session 3 – More basic concepts

- Arrays
- Strings
- Exceptions
- Basic debugging skills

Practical exercise: Create various applications that utilize new content

Session 4 – OOP basics

- What did we have before OOP
- Functions (input, output, visibility, overloading)
- OOP concepts
 - Constructor
 - Inheritance basics

Practical exercise: Implement OOP concepts

Session 5 – OOP Advanced

- Abstract
- Interface
- Polymorphism

Practical exercise: Implement advanced OOP concepts

Session 6 – Web technologies overview

- HTML
- CSS
- Basic JS

Practical exercise: Build web pages that utilize learned capabilities

Session 7 – Introduction to Selenium

- What is Selenium
- Selenium WebDriver with Java
- Maven basics
- Finding and manipulating web page elements

Practical exercise: Build and run basic test scripts

Session 8 – Page objects and infrastructure

- Page Objects design pattern
- Building infrastructure

Practical exercise: Build and run test scripts using infrastructure and PageObjects

Session 9 – Testing framework - TestNG

- TestNG basics
- Before and after methods
- Data Driven Testing
- Creating Suites

Practical exercise: Embed TestNG capabilities into our infrastructure

Session 10 – Advanced concepts

- Proper synchronization techniques
- Handling iframes
- Simulating advanced user actions

Practical exercise: Working with new Selenium concepts in test scripts