

## Automation Testing with Selenium (3 Months)

**Duration:** 3 Months (~120 Hours)

**Mode:** Live Online / Classroom

**Designation after completion:** Automation Test Engineer / QA Automation Engineer

**Tools & Technologies:** Selenium WebDriver, Java/Python, TestNG, Maven, GitHub, Jenkins, Cucumber (BDD)

**Certifications prepared:** Certified Selenium Tester, Agile Testing

### Course Syllabus (12 Weeks)

#### Week 1 – Automation Basics

- What is Automation Testing? Benefits & challenges
- Selenium Components: IDE, RC, WebDriver, Grid
- Installing Selenium with Java/Python
- Assignment → Setup Selenium & automate Hello World test

#### Week 2 – WebDriver Basics

- WebDriver architecture
- Locators: ID, Name, ClassName, XPath, CSS Selector
- Assignment → Automate Google Search with locators

#### Week 3 – Web Interactions

- WebDriver commands: click, sendKeys, getText, isDisplayed
- Handling Alerts, Dropdowns, Frames, Windows
- Assignment → Automate form filling app

#### Week 4 – Framework Setup

- TestNG/JUnit setup
- Assertions, Annotations, Groups
- Assignment → Create a test suite for login functionality
- Mock Interview 1

#### Week 5 – Data-Driven Testing

- Page Object Model (POM) design
- Data-driven testing using Excel/CSV
- Parameterization in TestNG
- Assignment → Automate Registration with POM

#### Week 6 – Advanced Selenium

- Waits: Implicit vs Explicit vs Fluent Wait
- Taking screenshots in Selenium
- JavaScriptExecutor for dynamic elements
- Assignment → Automate cart checkout with explicit waits

### **Week 7 – Cross-Browser Testing**

- Running tests in Chrome, Firefox, Edge
- Headless browser automation
- Assignment → Execute login test in multiple browsers

### **Week 8 – CI/CD with Selenium**

- Introduction to Jenkins
- Running Selenium scripts with Maven in Jenkins
- Assignment → Integrate Selenium suite in Jenkins pipeline
- Mock Interview 2

### **Week 9 – BDD with Cucumber**

- Gherkin syntax & Feature files
- Step definitions in Java/Python
- Assignment → Automate login with Cucumber

### **Week 10 – Parallel Testing**

- Selenium Grid setup
- Parallel execution using TestNG XML
- Assignment → Run parallel tests in Selenium Grid

### **Week 11 – Reporting & Logs**

- Extent Reports, Allure Reports
- Log4j implementation in test automation
- Assignment → Generate automation test report

### **Week 12 – Revision & Project**

- Project: Automate e-commerce app end-to-end with Selenium, TestNG, Jenkins, Reports
- Mock Interview 3