

Test automation & CI with Java

Course 6968 – 40 Hours

Overview

As software projects become more agile, the frequent need in tests increases. Like in many other areas, in order to meet these new intensive requirement, QA shifts toward automation. This means that testers must have programming skills and knowledge of automation tools .

This course takes classic testers through this path, by covering QA terms and discussing TDD as part of Agile. Then, the course relates to automation APIs, frameworks and tools like Junit, Selenium & Postman. The course end with introduction to Jenkins for combining automated tests in DevOps projects.

Who Should Attend

- Java developers that want to performs automated tests
- Java developers with background in testing, that want to focus on test automation
- Java developers that want to combine automated tests in DevOps projects

Prerequisites

- Experience in classic QA (optional)
- Experience in JavaSE programming
- Familiarity with Java web development & web-services
- Testers with basic Java background (may join in later modules)

Course Contents

Introduction to testing

- Goals
- Presenting the testing tools management architect
- Testing methodologies
- Introduction to TDD and how it is used in Agile
- White-box & black-box testing
- Introduction to Unit testing
- Benefits of unit testing

JIRA

- Introduction
- Bug-tracking
- JIRA Agile

JUnit

- Introduction to JUnit
 - Usage
 - Goals
 - Testing automation framework
 - Continuous Integration Concepts
 - Testing Philosophy
- Building tests and test suites via NGTest
 - NGTest Mechanics
 - The TestCase Super Class
 - Overriding the setUp(), tearDown(), testXXX, suite(), main() methods
 - Simple Testcase Examples
- Methodology
 - What should and shouldn't be tested?
 - Test independence rule
 - Unguaranteed Test execution order
 - Using Test Suites
 - Standard and Custom Test Runners
- Test then Refactor

Selenium

- Basic understanding of test automation framework
- Understanding the Selenium components
- Basic familiarity with Eclipse and Java
- Understanding WebDriver locators (XPath and CSS)
- Understanding the WebDriver API
- Familiarity with web automation projects architecture

Jmeter – testing performance

- Performance overview
- Scripting Overview
- Download & Configure Jmeter
- Record & Run simple Jmeter Script
- Building a Jmeter Test Plan
- Jmeter Elements
- Building Web TestPlan

Postman – testing Web-services & APIs

- Introduction
- Installation & Setup
- Sending API requests
- Debugging and logs
- Test scripts
- Monitors

DevOps – combining automated tests

- Intro to CI
 - Overview
 - Role in DevOps
 - Workflow
 - Main env. Components
 - Code repository
 - Automated builds
 - Automated tests
 - Automated deployment
 - Focusing on Testing
 - Verifying existing and creating Test Units
 - Automated tests
 - Post test automated activities
- Test automation with Jenkins
 - Introduction to Jenkins
 - Using Jenkins for Unit testing
 - Using Jenkins for Automated testing
 - Jenkins Reporting and Code Analysis
 - Jenkins Distributed Builds