

Automation Testing



e-Learning Course

Automate. Accelerate. Succeed!!

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COURSE MODULES

Module 1: Introduction to Automation Testing

- *What is Automation Testing?*
- *Benefits of Automation Testing*
- *Manual Testing vs. Automation Testing*
- *Types of Automation Testing*
- *When to Automate and When Not to Automate*
- *Overview of Automation Tools (Selenium, Appium, TestNG, etc.)*

Module 2: Core Java for Automation

- *Java Basics: Variables, Data Types, Operators*
- *Control Statements: Loops, If-Else, Switch Case*
- *Object-Oriented Programming (OOP) Concepts*
- *Exception Handling*
- *Collections Framework (List, Set, Map)*
- *File Handling and I/O*
- *Introduction to Maven and Build Tools*

Module 3: Selenium WebDriver - Basics & Advanced

- *Introduction to Selenium and WebDriver Architecture*
- *Setting Up Selenium with Java & Eclipse/IntelliJ*
- *Locators in Selenium (ID, Name, XPath, CSS Selector, etc.)*
- *Handling Web Elements (Textbox, Dropdowns, Buttons, etc.)*
- *Handling Frames, Alerts, and Windows*
- *Browser Navigation Commands*
- *Handling Dynamic Web Elements*
- *Synchronization: Implicit, Explicit, and Fluent Waits*

Module 4: Advanced Selenium & Framework Design

- Page Object Model (POM) and Page Factory
- Data-Driven Testing using Excel (Apache POI)
- Selenium Grid for Parallel Execution
- Handling JavaScript Alerts and Popups
- Handling Cookies and Sessions
- Capturing Logs and Debugging Issues
- Integration with Version Control (Git & GitHub)

Module 5: TestNG and JUnit for Test Automation

- Introduction to TestNG and JUnit
- Writing Test Cases with TestNG
- TestNG Annotations and Execution Order
- Assertions in TestNG
- Parameterization using XML and Data Providers
- Running Tests in Parallel
- Generating HTML Reports with TestNG
- JUnit vs. TestNG: Key Differences

Module 6: Automation Framework Development

- Introduction to Automation Frameworks
- Types of Frameworks: Hybrid, Data-Driven, Keyword-Driven, BDD
- Creating a Selenium Hybrid Framework from Scratch
- Implementing Logging (Log4j)
- Reporting using Extent Reports & Allure Reports
- Implementing Continuous Integration (CI) with Jenkins
- Running Tests from Jenkins & Scheduling Jobs

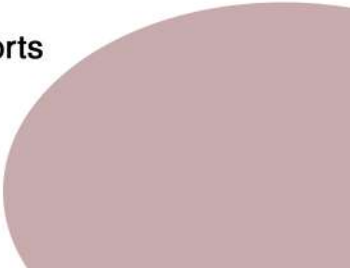
Module 7: API Automation Testing (REST Assured)

- Basics of API Testing
- HTTP Methods (GET, POST, PUT, DELETE)
- REST Assured Setup and Configuration
- Writing API Test Cases using REST Assured
- Validating Responses & Status Codes
- JSON & XML Parsing
- API Authentication (OAuth, Bearer Token, Basic Auth)
- Integrating API Tests with CI/CD

Module 8: Mobile App Automation (Appium - Optional)

- Introduction to Mobile Automation
- Appium Architecture and Setup
- Locating Mobile Elements (UIAutomator, XCUITest)
- Writing Test Cases for Android & iOS
- Running Appium Tests on Real Devices & Emulators
- Hybrid App Testing using Appium

Module 9: Performance Testing with JMeter (Optional)

- Introduction to Performance Testing
 - Installing and Configuring Apache JMeter
 - Creating Test Plans & Load Tests
 - Analyzing Test Results & Performance Reports
 - Integrating JMeter with Selenium
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Module 10: CI/CD Integration and DevOps Practices

- Introduction to CI/CD in Test Automation
 - Setting up Jenkins for Automated Test Execution
 - GitHub Actions & Selenium Integration
 - Dockerizing Selenium Tests
 - Running Selenium Tests in Kubernetes
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