

<h1>Automation Testing</h1>
2.1 Introduction to Automation Testing
<ul style="list-style-type: none"> ● Manual vs Automation Testing ● Benefits of Automation Testing ● When to Automate?
2.2 Types of Automation Testing
<ul style="list-style-type: none"> ● Unit Testing ● Integration Testing ● End-to-End (E2E) Testing ● Functional vs Non-Functional Testing
2.3 Automation Testing Frameworks
<ul style="list-style-type: none"> ● Selenium WebDriver ● Appium (for mobile automation) ● TestNG/JUnit ● Cucumber (for Behavior Driven Development - BDD) ● Robot Framework
2.4 Setting Up the Testing Environment
<ul style="list-style-type: none"> ● Configuring IDE (Eclipse, IntelliJ) ● Installing and Setting Up Automation Frameworks ● Writing First Automation Test Script
2.5 Writing Efficient Test Scripts
<ul style="list-style-type: none"> ● Best Practices for Writing Test Cases ● Using Assertions ● Data-Driven Testing ● Page Object Model (POM) for Test Scripts
2.6 Continuous Integration and Testing
<ul style="list-style-type: none"> ● Integrating Automation with CI/CD (Jenkins, GitLab CI) ● Running Tests Automatically on Code Push
2.7 Performance and Load Testing
<ul style="list-style-type: none"> ● Introduction to Performance Testing (JMeter, LoadRunner) ● Identifying Bottlenecks with Load Testing
2.8 Mobile App Automation Testing
<ul style="list-style-type: none"> ● Appium Setup for iOS and Android ● Running Automated Tests on Mobile Devices
2.9 API Testing Automation
<ul style="list-style-type: none"> ● Introduction to API Testing with Postman ● Automating API Testing with RestAssured
2.10 Test Reporting and Analysis
<ul style="list-style-type: none"> ● Generating Reports (Extent Reports, Allure Reports) ● Interpreting Test Results and Debugging Failures
2.11 Emerging Trends in Automation Testing
<ul style="list-style-type: none"> ● AI and Machine Learning in Automation ● Self-Healing Test Scripts ● Codeless Test Automation Tools
2.12 Best Practices and Real-World Case Studies
<ul style="list-style-type: none"> ● Lessons from Industry Implementations

- Common Pitfalls and How to Avoid Them