



Automation Testing

1: Introduction to Automation Testing

- Understanding the basics of automation testing
- Importance and objectives of automation testing
- Advantages and challenges of automation testing
- Role of automation testers in the development process

2: Test Automation Fundamentals

- Introduction to test automation frameworks (keyword-driven, data-driven, hybrid, and behavior-driven)
- Overview of popular automation testing tools (Selenium WebDriver)
- Setting up the automation testing environment (IDE, browsers, drivers)

3: Selenium WebDriver Basics

- Introduction to Selenium WebDriver
- Installing and configuring Selenium WebDriver
- Locating elements using different locators (ID, name, class name, xpath, css selector)
- Handling different web elements (input fields, buttons, links, checkboxes, dropdowns)

4: Selenium WebDriver Advanced Features

- Working with different types of waits (implicit, explicit, fluent)
- Handling multiple browser windows and tabs
- Handling frames and iframes
- Handling alerts, prompts, and pop-ups

5: Data-Driven Testing

- Understanding data-driven testing concepts
- Reading test data from external sources (Excel, CSV, databases)
- Parameterizing test scripts using test data
- Implementing data-driven testing using Selenium WebDriver and test automation frameworks

6: Advanced Test Automation Techniques

- Implementing page object model (POM) design pattern
- Implementing page factory pattern for object repository
- Handling dynamic elements and synchronization issues
- Implementing test data management strategies

7: Introduction to TestNG

- Understanding the basics of TestNG
- Importance and advantages of using TestNG for software testing
- Comparison of TestNG with other testing frameworks (JUnit)
- Installing and configuring TestNG in a Java development environment

8: TestNG Annotations

- Introduction to TestNG assertions
- Using assertions to validate expected outcomes in test cases
- Types of assertions supported by TestNG (`assertEquals`, `assertTrue`, `assertFalse`, `assertNull`, `assertNotNull`, etc.)
- Handling exceptions and error conditions using TestNG assertions

9: TestNG Parameterization

- Understanding parameterization in TestNG
- Using data providers to supply test data to test methods
- Implementing parameterized tests using TestNG's @DataProvider annotation
- Running parameterized tests with multiple sets of test data

10: TestNG Reporting and Logging

- Understanding parallel execution in TestNG
- Configuring TestNG for parallel test execution (parallel attribute, thread count, parallel methods)
- Running tests in parallel across multiple threads or processes
- Handling synchronization and thread safety issues in parallel test execution





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