BRIGHT INFOTECH

Automation Testing Course Details

1. Introduction to Automation Testing

- **Overview of Automation Testing**
  - Definition and Importance
  - Benefits of Automation Testing
  - Manual vs. Automation Testing
- **Types of Automation Testing**
  - Functional Testing
  - Non-Functional Testing (Performance, Load, etc.)

2. Automation Testing Fundamentals

- **Key Concepts**
  - Test Automation Frameworks
  - Test Automation Tools Overview
  - Record and Playback Mechanism
- **Criteria for Automation**
  - Test Cases Suitable for Automation
  - Return on Investment (ROI) in Automation

3. Introduction to Selenium

- **Overview of Selenium**
  - Components of Selenium
  - Selenium WebDriver Architecture
- **Setup and Configuration**
  - Installing Selenium WebDriver
  - Setting up Development Environment (Java, Eclipse/IntelliJ)

4. Selenium WebDriver Basics

- **Basic Operations**
  - Launching Browsers
  - Locating Elements (By ID, Name, XPath, CSS Selector, etc.)
- **WebDriver Commands**
  - Browser Navigation Commands
  - WebElement Commands (Click, SendKeys, Clear, etc.)
  - Handling Browser Windows and Frames

5. Advanced Selenium WebDriver

- **Synchronization in Selenium**
  - Implicit Wait
  - Explicit Wait
- **Handling Web Elements**
  - Handling Dropdowns and Select Elements
  - Handling Alerts and Popups
  - Handling Multiple Windows/Tabs
- **Advanced User Interactions**
  - Mouse and Keyboard Actions
  - Drag and Drop

6. Test Automation Frameworks

- **Introduction to Frameworks**
  - Types of Frameworks (Data-Driven, Keyword-Driven, Hybrid)
- **Building a Test Automation Framework**
  - Project Structure
  - Creating Utility Functions
  - Implementing Page Object Model (POM)
- **Data-Driven Testing**
  - Parameterization Using Excel
  - Reading and Writing Data from Excel (Apache POI)
  - Handling Test Data

7. Introduction to TestNG

- **Overview of TestNG**
  - Installing TestNG
  - Creating and Running TestNG Tests
- **TestNG Annotations**
  - @Test, @BeforeMethod, @AfterMethod, @BeforeClass, @AfterClass
- **TestNG Features**
  - Grouping Tests
  - Parameterization
  - TestNG XML Configuration
  - Parallel Test Execution

8. Continuous Integration with Jenkins

- **Introduction to Jenkins**
  - Installing Jenkins
  - Configuring Jenkins
- **Integrating Selenium with Jenkins**
  - Creating and Running Jenkins Jobs
  - Configuring Build Triggers

- Generating Test Reports

9. Version Control with Git

- **Introduction to Git**
  - Basic Git Commands
  - Setting up Git Repository
- **Working with Git**
  - Cloning Repositories
  - Branching and Merging
  - Resolving Conflicts

10. Introduction to Cucumber (BDD)

- **Behavior-Driven Development (BDD)**
  - Introduction to Cucumber
  - Gherkin Syntax
- **Writing Cucumber Tests**
  - Creating Feature Files
  - Step Definitions
  - Running Cucumber Tests

11. Other Automation Tools Overview

- **Overview of Popular Tools**
  - QTP/UFT
  - Appium for Mobile Testing
  - JMeter for Performance Testing
- **Choosing the Right Tool**

12. Best Practices in Automation Testing

- **Writing Maintainable Test Scripts**
  - Code Reusability
  - Modularization
- **Handling Dynamic Elements**
  - Strategies for Dynamic Locators
- **Error Handling and Reporting**
  - Implementing Robust Error Handling
  - Generating and Analyzing Test Reports

13. Real-World Project

- **Project Planning and Design**
  - Identifying a Real-World Application
  - Requirement Gathering and Analysis
- **Test Script Development**
  - Writing and Executing Automated Test Cases

- Reviewing and Finalizing Test Scripts
- **Test Execution and Reporting**
  - Running Automated Test Suites
  - Logging Defects and Reporting Results
- **Project Presentation**
  - Creating a Project Presentation
  - Demonstrating Automation Testing Process and Findings