Automation Testing Syllabus

Automation Testing at CSDT Centre Patna

Course Duration: 4 Months and   Course Fee: 15500/-

About CSDT Centre Patna

CSDT Centre Patna is a premier training institute in Patna, renowned for its comprehensive and industry-oriented training programs. The center offers a variety of IT courses aimed at equipping students with the skills and knowledge needed to excel in the rapidly evolving tech industry.

Automation Testing Course Overview

The Automation Testing course at CSDT Centre Patna is designed to provide students with a thorough understanding of automated testing methodologies and tools. The course curriculum is tailored to meet the demands of the software industry, ensuring that students gain practical, hands-on experience.

Course Modules

1. **Introduction to Automation Testing**
   o Basics of Software Testing
   o Manual vs. Automation Testing
   o Advantages and Disadvantages of Automation Testing
2. **Automation Testing Tools**
   o Overview of Popular Tools (Selenium, QTP, TestComplete)
   o Selection Criteria for Automation Tools
   o Open Source vs. Commercial Tools
3. **Programming Essentials**
   o Introduction to Programming Languages (Java, Python, JavaScript)
   o Variables, Data Types, and Operators
   o Control Structures: Loops and Conditional Statements
   o Functions and Exception Handling
4. **Selenium Basics**
   o Introduction to Selenium
   o Selenium IDE, WebDriver, and Grid
   o Setting Up the Selenium Environment
   o WebDriver Architecture
5. **Advanced Selenium WebDriver**
   o Writing WebDriver Test Scripts
   o Locating Web Elements
   o Handling Different Web Elements: Text Boxes, Buttons, Dropdowns
   o Managing Alerts, Frames, and Windows
   o Implementing Waits and Synchronization
6. **Frameworks and Best Practices**
   o Introduction to Automation Frameworks

- o Data-Driven, Keyword-Driven, and Hybrid Frameworks
- o TestNG and JUnit Integration
- o Page Object Model (POM)
- o Continuous Integration with Jenkins and Maven

7. **Behavior-Driven Development (BDD)**
   - o Introduction to BDD
   - o Working with Cucumber and Gherkin
   - o Writing and Running BDD Tests
   - o Integrating BDD with Selenium

8. **API and Performance Testing**
   - o Basics of API and Web Services
   - o REST and SOAP Overview
   - o API Testing with Postman and RestAssured
   - o Introduction to Performance Testing with JMeter

9. **Mobile Automation Testing**
   - o Mobile Testing Fundamentals
   - o Tools for Mobile Automation (Appium)
   - o Setting Up Appium
   - o Writing and Running Mobile Test Scripts

10. **Real-World Applications and Project Work**
    - o Applying Automation Testing in Real-World Scenarios
    - o Best Practices and Industry Standards
    - o Hands-On Project: End-to-End Automation Testing of a Sample Application
    - o Project Presentation and Review

Benefits of Automation Testing

- **Efficiency:** Automation speeds up the testing process and increases efficiency.
- **Accuracy:** Reduces human error and increases the reliability of test results.
- **Reusability:** Test scripts can be reused for different versions of an application, saving time in regression testing.
- **Coverage:** Increases the scope and depth of tests, ensuring more comprehensive test coverage.
- **Consistency:** Ensures consistent test execution, enhancing reliability and repeatability.

Key Skills for Automation Testers

- **Programming Knowledge:** Proficiency in programming languages like Java, Python, or JavaScript.
- **Automation Tools:** Experience with tools like Selenium, QTP, TestComplete, and Appium.
- **Frameworks:** Knowledge of test automation frameworks such as TestNG, JUnit, and Cucumber.
- **Continuous Integration:** Familiarity with CI/CD tools like Jenkins, Bamboo, and Git.
- **API Testing:** Understanding of API testing tools like Postman and RestAssured.
- **Performance Testing:** Basic knowledge of performance testing tools like JMeter.

Career Path in Automation Testing

1. **Junior Automation Tester:**
   o Writing and executing automated test scripts
   o Reporting and tracking defects
   o Working under the guidance of senior testers or test leads
2. **Automation Test Engineer:**
   o Designing and implementing test automation frameworks
   o Developing automated tests for new features
   o Integrating automated tests with CI/CD pipelines
3. **Senior Automation Test Engineer:**
   o Leading the design and implementation of complex test automation projects
   o Mentoring junior team members
   o Collaborating with development teams to ensure high-quality software delivery
4. **Automation Test Lead:**
   o Managing a team of automation testers
   o Defining test strategies and ensuring adherence to best practices
   o Overseeing test planning, execution, and reporting
5. **Quality Assurance Manager:**
   o Overseeing all testing activities (manual and automated)
   o Defining quality standards and metrics
   o Coordinating with other departments to ensure overall product quality
6. **Test Architect:**
   o Defining the overall test architecture and strategies
   o Evaluating and recommending testing tools and technologies
   o Ensuring scalability and maintainability of test automation frameworks

Industries and Demand

Automation testers are in demand across various industries, including:

- **Information Technology and Services**
- **Finance and Banking**
- **Healthcare and Pharmaceuticals**
- **Telecommunications**
- **E-commerce and Retail**

Why Choose CSDT Centre Patna?

- **Experienced Instructors:** Learn from industry experts with years of experience in automation testing.
- **Comprehensive Curriculum:** A well-structured syllabus covering all essential aspects of automation testing.
- **Hands-On Training:** Practical sessions and real-world projects to ensure you gain practical experience.
- **Placement Assistance:** Support with job placements to help you start your career in automation testing.
- **Modern Infrastructure:** State-of-the-art facilities and resources to provide a conducive learning environment.

Conclusion

CSDT Centre Patna offers an excellent Automation Testing course that equips students with the necessary skills and knowledge to excel in the field of software testing. With a focus on practical training and industry relevance, the course is designed to open up numerous career opportunities in the ever-growing tech industry.