

Automated Testing using Selenium

By,

Harshil Tarun Kanakia

Automated Testing

Automated testing is the use of specialized tools to execute pre-scripted tests on software before it's released into production. It helps ensure that the software works as expected and catches bugs early in the development cycle.

Why Use Automated Testing?

- **Speed:** Runs tests much faster than humans.
- **Repeatability:** Tests can be reused across builds and deployments.
- **Coverage:** Can test large parts of the application quickly.
- **Consistency:** Eliminates human error in test execution.
- **Continuous Integration (CI):** Essential for CI/CD pipelines.

Types of Automated Test

- **Unit Tests:** Test individual components or functions.
- **Integration Tests:** Ensure different modules work together.
- **Functional Tests:** Validate specific business logic and workflows.
- **Regression Tests:** Check that new code doesn't break existing features.
- **End-to-End (E2E) Tests:** Simulate real user scenarios.

Popular Testing Tools

- JUnit, TestNG (**Java**)
- PyTest, unittest (**Python**)
- Mocha, Jest (**JavaScript**)
- Selenium, Cypress (**Web UI Testing**)
- Postman/Newman (**API Testing**)
- CI Tools: Jenkins, GitHub Actions, CircleCI

Selenium

Selenium is an open-source framework used to automate web browsers. It allows you to simulate user actions like clicking buttons, filling forms, and navigating pages.



Selenium IDE

- The recording, debugging, executing and editing of the functional tests can be done in Selenium IDE.
- Selenium IDE commands help us to perform tasks like clicking a button or link, taking input in an edit box, obtaining a text from a webelement and so on.
- Selenium IDE tests can be converted to formats like Java, C#, Python, TestNG, and so on. Its default format is in .html.

Selenium IDE Demonstration

- **Link to download** : <https://www.selenium.dev/selenium-ide/>
- **Creating Tests** : https://www.tutorialspoint.com/selenium/selenium_ide_test_creation.htm
- **Creating Script** : https://www.tutorialspoint.com/selenium/selenium_ide_creating_script.htm