

Selenium Automation Framework Example

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Introduction to Automation testing:

Testing is an essential part of a software development process. While testing intermediate versions of products/projects being developed, testing team needs to execute a number of test cases. In addition, prior to release every new version, it is mandatory that the version is passed through a set of “regression” and “smoke” tests. Most of all such tests are standard for every new version of product/project, and therefore can be automated in order to save human resources and time for executing them.

Benefits of using automated testing are the following:

- Reduction of tests' time execution and human resources required
- Complete control over the tests' results (“actual results” vs “expected results”)
- Possibility to quickly change test's preconditions and input data, and re-run the tests dynamically with multiple sets of data

Automation workflow for the application can be presented as follows:

- First of all it is required to identify tasks that an application has to accomplish.
- Second, a set of necessary input data has to be created.
- Third, expected results have to be defined in order one can judge that an application (a requested feature) works correspondingly.
- Fourth, Executes a test.
- Finally, Compares expected results with actual results, and decides whether the test has been passed successfully.

Environment Specifications:

1. Selenium Webdriver (Supports all major browsers, we use Mozilla, chrome and IE)
2. Eclipse IDE
3. Java
4. TestNG
5. AutoIT Tool (Used to handle Windows popups for Document [Uploads](#) and [Downloads](#).)
6. [JExcel](#) or [Apache POI](#) to perform operations with excel like read, write and update the excel sheet

This Framework has the following tools:

1. **Selenium** - Selenium is a well know open source testing framework, which is widely used for testing Web-based applications.
2. **Eclipse IDE**: Eclipse is an integrated development environment (IDE) for Java. The Eclipse IDE is the most known product of the Eclipse Open Source project.
3. **TestNG** - Is a testing framework inspired from JUnit and NUnit. It has extended new functionalities which made it more powerful and easier than the other testing frameworks.
4. **AutoIT** - AutoIt v3 is a freeware BASIC-like scripting language designed for automating the Windows GUI and general scripting. It uses a combination of simulated keystrokes, mouse movement and window/control manipulation in order to automate tasks which is not possible with selenium.