**What is Automation Testing?**

Automation Testing is the method of testing software products with special testing tools and frameworks to minimize human intervention and maximize quality.

With Automation Testing, one can perform necessary repetitive tasks and those tasks that are hard to achieve with manual testing.

## Why Test Automation?

**Test Automation** is the best way to increase the effectiveness, test coverage, and execution speed in software testing. Automated software testing is important due to the following reasons:

* Manual Testing of all workflows, all fields, all negative scenarios is time and money consuming
* It is difficult to test for multilingual sites manually
* Test Automation in software testing does not require Human intervention. You can run automated test unattended (overnight)
* Test Automation increases the speed of test execution
* Automation helps increase Test Coverage
* Manual Testing can become boring and hence error-prone.

Test Automation stages

Timeline

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## Automation Testing Tools

QTP, Selenium, Katalon, Silkuli

[Selenium](https://intellipaat.com/blog/tutorial/selenium-tutorial/introduction/) is a free, open-source automated testing suite for web applications.

Selenium WebDriver is a collection of open source APIs which are used to automate the testing of a web application.

This is implemented through a browser-specific driver(ChromeDriver, FirefoxDriver ), which sends commands to the browser and retrieves the results.

### **How Selenium WebDriver Works**

On a high-level, Selenium WebDriver works in three steps:

* Test commands are converted into an HTTP request by the JSON wire protocol.
* Before executing any test cases, every browser has its own driver which initializes the server.
* The browser then starts receiving the request through its driver.

Diagram

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Selenium WebDriver Advantages

* Selenium WebDriver supports seven programming languages: Java, C#, PHP, Ruby, Perl, Python, and .Net.
* It supports cross-browser interoperability that helps you perform testing on various browsers, namely, Firefox, Chrome, IE, Safari, etc.
* Tests can be performed on different operating systems: Windows, Mac, Linux, Android, and iOS.
* Selenium WebDriver overcomes limitations of Selenium v1, such as file upload, download, pop-ups, and dialog barrier

Limitations

* Selenium is useful for testing web applications only. Neither desktop (software) testing nor the testing of mobile applications is possible with Selenium.
* Detailed test reports cannot be generated.
* Testing images is not possible.