**What is Automation Testing?**

[Manual Testing](https://www.guru99.com/manual-testing.html) is performed by a human sitting in front of a computer carefully executing the test steps.

Automation Testing means using an automation tool to execute your test case suite.

The automation software can also enter test data into the System Under Test, compare expected and actual results and generate detailed test reports. Test Automation demands considerable investments of money and resources.

Successive development cycles will require execution of same test suite repeatedly. Using a test automation tool, it's possible to record this test suite and re-play it as required. Once the test suite is automated, no human intervention is required. This improved ROI of Test Automation. The goal of Automation is to reduce the number of test cases to be run manually and not to eliminate Manual Testing altogether.

## **Framework for Automation**

A framework is set of automation guidelines which help in

* Maintaining consistency of Testing
* Improves test structuring
* Minimum usage of code
* Less Maintenance of code
* Improve re-usability
* Non Technical testers can be involved in code
* The training period of using the tool can be reduced
* Involves Data wherever appropriate

There are four types of frameworks used in automation software testing:

## **Automation Tool Best Practices**

To get maximum ROI of automation, observe the following

* The scope of Automation needs to be determined in detail before the start of the project. This sets expectations from Automation right.
* Select the right automation tool: A tool must not be selected based on its popularity, but it's fit to the automation requirements.
* Choose an appropriate framework
* Scripting Standards- Standards have to be followed while writing the scripts for Automation. Some of them are-
  + Create uniform scripts, comments, and indentation of the code
  + Adequate Exception handling - How error is handled on system failure or unexpected behavior of the application.
  + User-defined messages should be coded or standardized for Error Logging for testers to understand.
* Measure metrics- Success of automation cannot be determined by comparing the manual effort with the automation effort but by also capturing the following metrics.
  + Percent of defects found
  + The time required for automation testing for each and every release cycle
  + Minimal Time is taken for release
  + Customer Satisfaction Index
  + Productivity improvement

The above guidelines if observed can greatly help in making your automation successful.

## Benefits of Automation Testing

Following are benefits of automated testing:

[](https://www.guru99.com/images/automationbenefits.png)

* 70% faster than the manual testing
* Wider test coverage of application features
* Reliable in results
* Ensure Consistency
* Saves Time and Cost
* Improves accuracy
* Human Intervention is not required while execution
* Increases Efficiency
* Better speed in executing tests
* Re-usable test scripts
* Test Frequently and thoroughly
* More cycle of execution can be achieved through automation
* Early time to market