

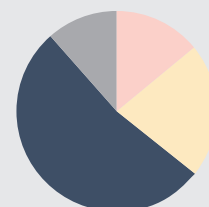
# AUTOMATED SOFTWARE TESTING

Automated Software Testing is the process of software verification in which the basic function and test steps, such as **running, initialization, execution, analysis and delivery of results are performed automatically by a programming language framework**. Automated testing is extremely beneficial and has the potential to transform how large, complex, software-based systems are tested and delivered.

## IMPORTANCE OF AUTOMATED SOFTWARE TESTING

TEST RUNS & RESULTS

|            |            |
|------------|------------|
| 29 Blocked | 171 Passed |
| 94 Retest  | 41 Failed  |



### TESTING SAVES TIME AND MONEY

Once created, automated tests can be run over and over again at no additional cost and they are much faster than manual tests. Automated software testing can reduce the time to run repetitive tests from days to hours. A time savings that translates directly into cost savings.

### TESTING VASTLY INCREASES YOUR TEST COVERAGE

Automated software testing can increase the depth and scope of tests to help improve software quality. Lengthy tests that are often avoided during manual testing can be run unattended. They can even be run on multiple computers with different configurations. Test automation can easily execute thousands of different complex test cases during every test run providing coverage that is impossible with manual tests.

### TESTING IS MORE RELIABLE

When a developer writes a test and adds it to the test suite that is performed on each deployment, the test just cannot be forgotten. A manual tester, on the other hand, can simply forget to perform some specific tests. He may even choose not to perform some tests at some deployments intentionally, assuming some parts of the system have been tested so many times before that there is no need to test them again / so often.

### TESTING IMPROVES QUALITY

Automated tests perform the same steps precisely every time they are executed and never forget to record detailed results. Testers freed from repetitive manual tests have more time to create new automated software tests and deal with testing complex features.

## DOES WHAT MANUAL TESTING CANNOT

A human tester cannot manually create 100.000 users to check if the application achieves the performance requirements. For example, to check if the generation of statistics from that number of users will take less than a certain amount of time.

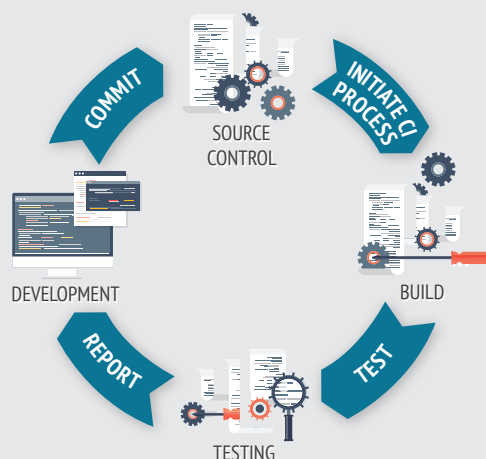
## HELPS DEVELOPERS AND TESTERS

Shared automated tests can be used by developers to catch problems quickly before sending to Quality Assurance. Tests can run automatically whenever source code changes are checked in and notify the team or the developer if they fail.

Features like these save developers time and increase their confidence.

## IS PERFECT FOR MOBILE APP DEVELOPMENT

Developing mobile applications is very different from developing PC software or even embedded software. Mobile development is meant to be agile, and a lot of great tools and practices have been developed for that agility.



### MANUAL SOFTWARE TESTING

Is not accurate at all times due to human error, hence it is less reliable.

Is time-consuming, taking up human resources.

Is only practical when the test cases are run once or twice, and frequent repetition is not required.

Executed in regression testing might not catch defects for frequently changing requirements

On different machines with different OS platform combinations cannot be done concurrently.

### AUTOMATED SOFTWARE TESTING

**Is more reliable**, as it is performed by tools and/or scripts.

Is executed by software tools, so it **is significantly faster** than a manual approach.

**Is a practical option** when the test cases are run repeatedly **over a long time period**.

**Is very helpful** with regressions in testing where code changes frequently.

Can also be done on different machines with **different OS platform** combinations, concurrently.



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