**Difference between Manual Testing and Automation Testing.**

The field of software testing is broad. Generally, we can divide it into two major categories: manual testing and automated testing. Before discussing the major differences between the two, it is necessary to explain what they are briefly.

**Manual Testing:** it is the procedure in which testers check, perform and look for defects within the application or software they are testing. Testers execute the test cases and produce the test reports without support from scripts, tools, or software.

**Automation Testing:** as in Manual Testing, the aim is to test applications and software, but here the tester will use codes and testing scripts that automate the testing procedure and reduce the time required. Those tools help testers to fix applications or software that they might not perform as expected.

Let’s look at the major differences between the two test methods.

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| Argument | Manual Testing | Automation Testing |
| Method | Tester test manual process. | Tester uses automation tools. |
| Processing time | It is time-consuming and depends on human resources. | It is a faster process. |
| Initial investment | It is lower than Automation Testing. | It is higher than Manual Testing. |
| Reliability | It is not accurate as it is compromised by human error. | It is reliable because is processed through tools so there is no testing fatigue. |
| Human observation | It allows human observation, which may be useful to offer a user-friendly system. | It can not do that, as its name explains is automated. So do not involve human opinions. |
| Programming Testing knowledge | There is no programming. | It is a must in Automation. |
| Ideal approach | It is useful when the test case should run only once or twice. | It is useful when we have to run the same test case over and over again. |
| Deadlines | It has a higher risk of missing out the deadline already agreed. | It has no risk whatsoever about this. |
| Framework | It does not have a framework but could use guidelines, checklists, and exigent processes to draft test cases. | It uses a framework like Data, Driver, keywords, Hybrid to speed up the process. |
| When to use it? for | Manual testing is suitable for Exploratory, Usability and Adhoc Testing. | Regression T., Performance T., Load T., or highly repeatable functional test cases. |

## **Manual Testing Pros and Cons**

**Pros of Manual Testing:**

* Get fast and accurate visual feedback
* It is less expensive as you don’t need to spend your budget on automation tools and processes.
* Human judgement and intuition always benefit the manual element
* While testing a small change, an automation test would require coding, which could be time-consuming. While you could test manually on the fly.

**Cons of Manual Testing:**

* Less reliable testing method because a human conducts it. Therefore, it is always prone to mistakes & errors.
* The manual testing process can’t be recorded, so it is not possible to reuse the manual test.
* In this testing method, specific tasks are difficult to perform manually, which may require additional time during the software testing phase.

## **Automated Testing Pros and Cons**

**Pros of automated testing:**

* Automated testing helps you to find more bugs compared to a human tester
* As most of the part of the testing process is automated, you can have a speedy and efficient process
* The automation process can be recorded. This allows you to reuse and execute the same kind of testing operations.
* Automated testing is conducted using software tools, so it works without tiring and fatigue, unlike humans in manual testing.
* It can easily increase productivity because it provides fast & accurate testing results.
* Automated testing supports various applications.
* Testing coverage can be increased because of automation testing tools never forget to check even the smallest unit.

**Cons of Automated Testing:**

* Without a human element, it’s difficult to get insight into visual aspects of your UI like colours, font, sizes, contrast or button sizes.
* The tools to run automation testing can be expensive, which may increase the cost of the testing project.
* The automation testing tool is not yet fool proof. Every automation tool has its limitations which reduce the scope of automation.
* Debugging the test script is another major issue in automated testing. Test maintenance is costly.