12/15/2019

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**MANUAL TESTING**

Testing is a critical phase of Software Development Life Cycle. Manual testing is a type of software testing where testers execute test cases without using any automation tools to produce defect-free software that meets the requirements. The tester prepares a test plan document which describes the detailed and systematic approach to testing of software applications. Test suites and cases designed during the design phase should have 100% coverage. As manual testing involves complete test cases it is a time-consuming test.

In order to successfully conduct manual tests, the requirements of the software need to be well understood. By understanding the requirements, we will know what needs to be tested and what classifies a defect. This is a crucial part of manual testing as the main goal is to make sure the software is bug-free.

It is true that test automation reduces the testing time, but it is not possible to start test automation at any time during software development. Also 100% automation testing is not possible this makes manual testing essential. Test automation should be started when the software has been manually tested and is stable to some extent.

Although manual testing primarily reviews and tests a software from an end-user perspective, manual testing may also be performed by software developers/testers using their knowledge and experience to identify defects within software.Although it requires a large amount of work, manual testing is necessary in order to ensure a good user experience and a high level of quality. A human tester is always going to find things an automated test cannot. The keys to successful manual testing include understanding the requirements of the software, writing good test cases, and logging thorough bug reports.

**Types of Manual Testing**

1. Black Box Testing
2. White Box Testing
3. Unit Testing
4. System Testing
5. Integration Testing
6. Acceptance Testing

**Tests That Cannot Be Automated**

1. Exploratory Testing
2. User interface testing
3. Ad-hoc Testing

**When Do We Prefer Manual Testing?**

* When the project is in initial development stage.
* When testing user interface especially their visual aspects.
* When exploratory or ad-hoc testing needs to be performed.
* If the project is a short term and writing automation scripts will be time consuming
* If the test case is not automatable.

**Advantages of Manual Testing**

* Manual testing can be done on all kinds of applications
* It is preferable for short life cycle products
* Newly designed test cases should be executed manually
* Application must be tested manually before it is automated
* It is preferred in the projects where the requirements change frequently and for the products where the GUI changes constantly
* It is cheaper in terms of initial investment compared to Automation testing
* It requires less time and expense to begin productive manual testing
* There is no necessity to the tester to have knowledge on Automation Tools

**Disadvantages of Manual Testing**

* Manual Testing is time-consuming mainly while doing regression testing.
* it is conducted by humans so there will always be chances for errors and mistakes.
* Expensive over automation testing in the long run
* It is not possible to reuse because this process can’t be recorded