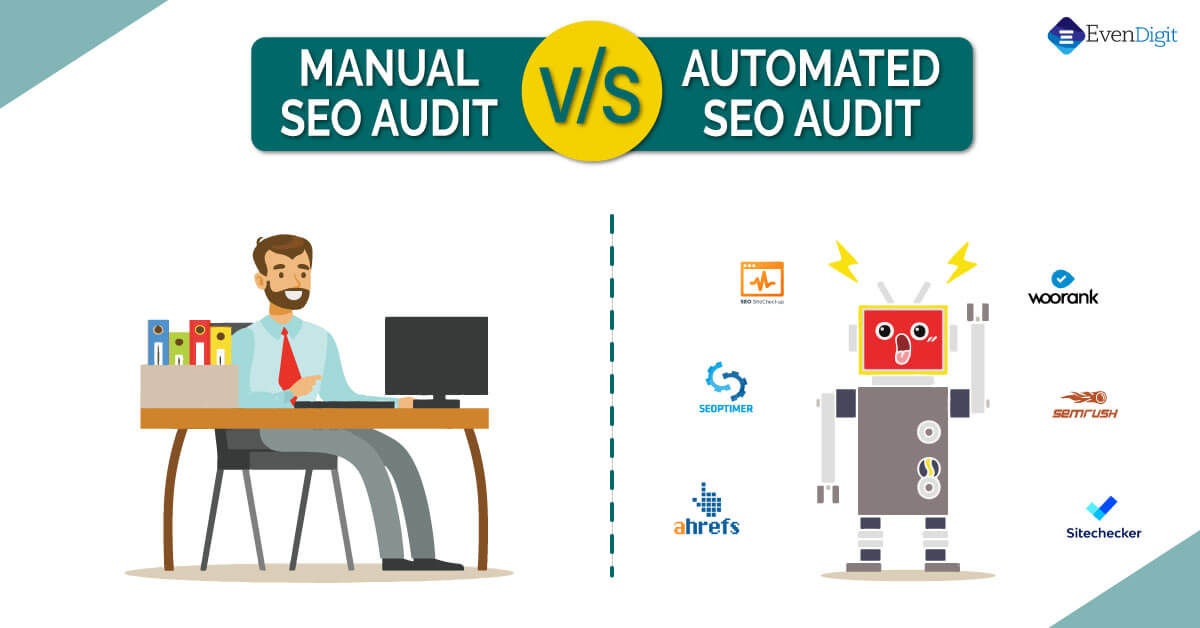
3.4 I can explain the effectiveness of tests and reflect on their purpose

There is no ‘better’ or ‘worse, testing when it comes to automation vs manual testing, both have their pros and cons, they are just 2 different ways of testing. Both manual and automation testing is needed. Manual testing handles complex test cases, while automated testing handles simpler, more repetitive tests. So, manual testing is still important. But adding automated testing makes manual testing more efficient. Testing is a vast domain. When a software application is developed, it goes through various stages of testing. The tests may vary from being functional to non-functional, and subject to test requirements. Testing is part of the product development cycle and is vitally important for ensuring the product is as good as it can to be.

There are 2 ways of carrying out software tests - **Manual** and **Automated.**



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Manual test execution-

Manual testing is important when automation testing is either not possible, suitable or affordable.

Manual testing is more suitable for short and smaller projects with a limited budget, automation testing is not free, with added management and maintenance costs. Manual testing, as the term suggests, refers to a test process in which a QA (quality assurer) manually tests the software application in order to identify bugs. To do so, the QA follows a written test plan that describes a set of unique test scenarios. The QA is required to analyse the performance of the web or mobile application from an end user’s perspective.

One of the tasks set in the web development course, was to manually test our website, which we created ourselves, I checked certain elements, like buttons, colours and text visually and manually to ensure that they are functioning according to requirements in terms of functionality and performance.

Effectiveness and advantages of manual testing:

* It is excellent for accurate user interface testing.
* Software testers don’t need to rewrite the entire to resolve quick fixes in the application.
* Manual testing is less extensive and has a smaller immediate cost when compared to automated testing.
* Manual testing can help us replicate the accurate user experience both mobile and apps.
* It is easier to resolve extremely complex test cases by manual testing rather than automated testing.

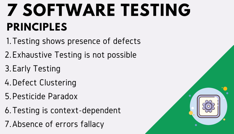
Automated testing-

Some teams don’t have the time or resources to be manually testing software. Automation testing can help with this. It can significantly reduce the time it takes to test products because it runs quickly and efficiently. This puts time back into the hands of developers and production managers, who can divert their efforts into other aspects of the project. It can greatly boost productivity as a result. Automated testing helps testers and developers, by catching problems quickly before sending to quality assurance. Utilizing automation testing helps ease the workload and provide clear and accurate results. Automated testing is very effective, as it can also deliver more accurate and reliable results than manual testing alone.

Purpose and effectiveness of Automated testing:

* **Simplifies testing** - Testing is a routine part of the operations of most tech companies. Making it as simple as possible is key. Using automation is extremely beneficial. When automating test tools, the test scripts can be reused.
* **Speeds up the testing process** - Machines and automated technology work faster than humans, along with improved accuracy, in turn, this shortens the software development cycles.
* **Reduces human intervention** - Tests can be run at any time of day, even overnight, without needing humans to oversee it. Plus, when it’s conducted automatically, this can also reduce the risk of human error.
* **Saves time and money** - Testing can be time-consuming. Though automation may require an initial investment, it can save money in the long run to become more cost-effective. Team members use their time in other areas and are no longer required to carry out manual testing in many situations. This improves their workflow.

There are 7 Principles of software testing:



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