

Why Software Testing Is Important

In a software development project, errors can appear in any of the stages of the life cycle, some of them even remain undiscovered. Hence the importance of testing software development is before you. There is a high probability that the final code has errors of both design, and functionality. To identify these problems before they occur in a critical environment, it's necessary to perform Software testing, a very important part of the process, but also very expensive; however, we must bear in mind that the cost due to a failure while the software is running can be much higher.

The Software testing can be defined as the process of executing the software or application to find out any bugs or errors in it. As the name already suggests that the software testing means checking the developed software for any mistakes and problem in the initial design of the software. With the software testing validation and verification of the software program can be done and any human error can be easily detected. The software testing is a continuous process, not a single activity. Testing is a process that takes place throughout the Software Development Life Cycle (SDLC). It is good to introduce software testing in the initial stage of coding to make it error free. The software testing further deals in the following testings, such as:

Static Testing. This process of testing identifies the error in the verification process and rectifies them without executing any extra coding. This testing includes reviewing of the documents (including source code) and static analysis. This is a useful and cost effective way of testing. For example: reviewing, walkthrough, inspection, etc.

Dynamic Testing. This testing is done to check the errors in the running program and solve the coding issue in the running process. It's done during the validation process. For example unit testing, integration testing, system testing, etc.

Test Levels:

Integration Tests: The compatibility and functionality of the interfaces between the different 'parts' that make up a system are checked, these 'parts' can be modules, individual applications, client/server applications, etc. This type of testing is especially relevant in the distributed software

Validation Tests: These are the tests performed on fully integrated software to evaluate compliance with the specified requirements.

System Tests: the validated software is integrated with the rest of the system

Automation Tests: the use of special software (separate from the software being tested) to control the execution of tests and the comparison of actual outcomes with predicted outcomes.

Unit Tests: determine whether various sections of the code are acting as expected under various circumstances. Test cases describe tests that need to be run on the program to verify that the program runs as expected.

Software testing indicate errors in the software: if you wait for the software to be tested after the development is complete, you may have to start over in case of failure. Therefore, it is always advisable to test the software in its development phase.

The popularity of software depends on how comfortable it is for the customer and how satisfied they are after use. Therefore, it is always necessary to test the software and make sure that errors do not occur before the software reaches the clients.

When buying a product, customers value the quality of the product. A poor quality product can cause customers to lose confidence in you, and this can affect your business. Therefore, it is important to have the software verified to avoid errors.

People always trust products that are affordable, have low maintenance costs and provide accurate and consistent results. A software or application that is full of errors can generate additional costs, and you can lose your customers. Therefore, the test software is important.

No customer accepts a product with poorly hidden characteristics. Therefore, it is necessary to perform a software test before inserting the software or application for the clients to detect hidden errors. This sets your software apart from its competitors if you truly appreciate the software testing process.

The software test is necessary to ensure that the software does not become an error. It can cause a lot of money to be wasted, and all the efforts used to develop the application or maybe the software are wasted. I know that you never want your tool to be rejected by people, so it is important to do the software test to avoid making mistakes.

An application or software with low performance can cloud your image in the market. People will lose their trust in you, and the reputation of your company will suffer. Some experts say that this is not remarkably important, but it is, simply because while you put your software on the market without a test and the performance is not the customer's expectation, it will be difficult to convince people that it is good.

Software Testing allows you to see all aspects of the software, such as: For example, you can check the compatibility of the browser and, if you find an error, you have the option to correct them. This can save you from complaints once the software or application has reached customers.

As mentioned above, the quality of the software is very important in this competitive world. Before the product enters the real world, it must be properly tested by experts. Sometimes, a small mistake leads to a great loss and affects the reputation of the company. Therefore, the software testers are known as a quality control team.

Software testing helps developers find errors and scenarios to reproduce the error. This truly makes it so simple for the developer to fix it quickly. Besides, software testers can work in parallel with the development, accelerating the entire process.

If the tests are not effective, they can allow or maybe let defective software to reach the client causing serious problems. It is a very important element in the projects because it consumes 33% of all the effort devoted to development. In our studies, we have detected that on a total of 20 key aspects for the tests to be optimal, in a wide and varied sample of companies the average truly implemented is 8%. Also, only about 25% of professionals have specific training in this technique.

The Software Testing is very important to rectify any errors in the software application and make it error free. A human being always tends to make mistakes and by using this test human error can be easily corrected. Overall the Software Testing has numerous benefits, such as:

- The Software Testing is a tool which helps software developers to detect errors in the phase of coding and provide them the right suggestions to improve their coding of the software application.
- The Testing will help software developers to provide the accurate work to their customers and have one satisfied customer at the end of the day.
- It is very important to generate the quality work and the work which is liked by the customers. It helps software developers to create the market name by providing error free work to the clients.
- It is required to provide plenty of facilities to the customer's life delivery of the high quality product or software application which requires lower maintenance cost and hence results into more accurate, consistent and reliable results.
- It is essential to construct the high performing software applications which can work as per the customer's requirements.
- Testing the software in the running stage provides accurate reading and if you find any error in this stage, then it is easy to rectify an error in this stage and it is also less expensive.
- If you want to stay longer in the business then you definitely required to use Software Testing.

That's why every software developer must utilize the Software Testing to improve the performance of their software application and provide one efficient program. The good performing software is the indication of the bright future of a software developer and the Software Testing is the path to achieve it.

More reasons why Software Testing is critical:

Software Testing Saves Money

Testing has many benefits and one of the most important ones is cost-effectiveness. Having testing in your project can save money in the long run. Software development consists of many stages and if bugs are caught in the earlier stages it costs much less to fix them. That is why it's important to get testing done as soon as possible. Getting testers or QA's who are technically educated and experienced for a software project is just like an investment and your project will benefit budget-wise.

Why you may ask? Imagine you just downloaded a banking app and it has one of the smallest commissions around the market for sending money fast. You tried to "Sign Up" and an "Error" message showed up. Now due to that problem, not only you, but many other users can't "Sign Up" and use that product. So their business has already lost money because transactions are not made and unresolved the issue in the very start. Thus, users will go and find another similar app that works and probably will never return to that one because of the bad experience they had. Testing essentially helps you save time and money in the long run because issues are resolved before bigger problems occur. The maintenance costs are also lower and in the end if product works 100% as it should, no exponential damage is done to your business cost-wise.

- In May of 1996, a software bug caused the bank accounts of 823 customers of a major U.S. bank to be credited with 920 million US dollars.
- Suncorp Bank – In February 2017, a malfunction during a routine upgrade caused the disappearance of money from customers' bank accounts. Additional customer complaints included overdrawn and locked out accounts.

Security

Another important point to add is security. This is probably the most sensitive and yet most vulnerable part.

There have been many situations where user information has been stolen or hackers have gotten to it and used it for their benefit. That is the reason people are looking for trusted products that they can rely on. As a user of many products and apps, I am always looking for products that I would give my information to with confidence and know that it will be safe; perhaps so do you. Our personal information and what we do with it should stay as private as possible, especially using services where it is a vulnerability to us, for example, banking information, security details etc.

How testing can help your product security:

- The user gets a trustworthy product;
- Keeps user's personal information and data safe;
- Vulnerability free products;
- Problems and risks are eliminated beforehand;
- Saves a lot of troubles later on;

Sometimes even the smallest security issues have brought huge problems to businesses around the world, so it should always be important to assure top-notch quality products to customers.

As of this year European Union has new General Data Protection Regulation (GDPR) and it mandates companies to be more careful with their users' personal data. Fines for missteps are huge and companies must comply with the new regulation.

- Cairns Hospital – A catastrophic glitch affecting five Australian hospitals was introduced during the application of security patches designed to counter potential future cyber-attacks. It required more than two weeks for the hospitals to recover their electronic medical record systems.
- China Airlines Airbus A300 crashed due to a software bug on April 26, 1994, killing 264 innocent lives.

Product Quality

In order to make your product vision come to life, it has to work as planned. Following product requirements is imperative, to an extent, because it helps you get the wanted end results.

Products always serve users in some ways, so it's very important that it brings the value it promises, hence it should work properly to ensure great customer experience. Development of an app, for example, has many processes included and testing gets a glimpse of every bit – it checks if the app's graphics are aligned properly, tests the main functionality, checks if menus are intuitive, etc. After developers fix issues, sometimes another issue may appear unexpectedly somewhere else, that's just how testing goes sometimes, so it's great to find those issues to be resolved and be a part of quality product being delivered to marketplace.

Device compatibility is also checked for the product, for example, an app's compatibility on many devices and operating systems. Testing companies usually have many devices and tools available to cover as many testing scenarios as possible.

Customer Satisfaction

The ultimate goal for a product owner is to give the best customer satisfaction. Reasons why apps and software should be tested is to bring the best user experience possible. Being the best product in this saturated market will help you gain trustworthy clients which will have great long-term effects. Once users will have amazing customer experience they will, without a doubt, tell their friends and word to mouth will make it advertise itself, but this works both ways.

Customer trust is not easy to earn, especially if your product is glitching and functioning only 60% of the time. You are a user of many products and perhaps have had horrible experiences that made you delete the app and tell others not to use it. These days the market is so saturated that first impression is important, otherwise users will find another product that meets his needs.

All could be eliminated if you invest in testing at the start product development, because bringing the biggest value in this saturated market will make your business stand out.

- British Airways – For the sixth time last year – a major IT software failure led to massive cancellations on local flights and significant delays on international flights. According to NPR.org – it took over three days of cancellation chaos to resolve the problems that plagued BA during this outage.

Conclusions

The software testing community is one of the most active discussions and debates, and that is exactly how we like it. However, we can agree on at least one thing: software testing is an integral part of software development. An error can make a simple task take a little more time or effort. In any case, when this error becomes invisible, it can affect real people. So software testing is important to all of us.