**How to test mobile application manually**

To start with the fundamental conceptual approach, in our daily routine we deal with lot of applications be it in mobile or computer operating system platforms. Let’s just recall the standard definition of application software to ensure we get it right

**Mobile Application**

An application is basically code base that is packaged into executable or installable software in order to deliver a desired functionality.

The application that runs on a mobile platform is in turn called as a mobile application There are three types of mobile applications, which are

**Web based application**

These applications are designed in way that these will only operate on browser, in our discussion the apps that operate in safari browser. We might have to do a http or https call to experience the application renders web page.

**Native application**

These applications are designed in a way that these are specific to the operating system and must be installed locally to make use of them (eg: vlc media, anti virus software..etc)

**Hybrid application**

These applications extend their operations from both the browser and as well as being an installed app on top of the operating system eg: twitter, facebook..etc

**Why is mobile application testing so important?**

With the increasing demand for the mobile phones, many enterprises large, medium and small scale were mainly focusing on the mobile application. Since mobile phone is quite accessible to many audience in the market, it is easy to penetrate through the world of applications and there are fair chances to hit unexpected and extreme success.

Given the real fact above, it is essential for every mobile application development company to come up with more purposeful, accurate, secure and attractive mobile app and more importantly that should not contain any malfunction in it and should give seamless user experience.

There comes the need of good development effort and desperate need for testing to deem the app works as intended. Now, here we land into the main discourse of the blog which is as below

**How to test this mobile application?**

Well, the testing needs more plan to be able to efficiently test an application, just like normal web/ any application testing how we plan and test at various phases, same level planning should be done however there is a disparity in the test approach.

Here are some chronicles that have to be taken place for an efficient testing

**Testing of a mobile application**

This section of the blog is the epicenter of this blog. Below are the some items that comes under the functional testing scope

**Testing the specs to understand the requirements**

This comes under static testing as we are not going to perform or execute any test case that is designed. In this phase as a mobile application test engineer we must consider having conversations with BA, developers and domain specific subject matter experts if any. The main goal in this phase is to develop a crystal clear understanding of all the functionalities that are planned for implementation.

* We can focus on raising the clarifications on a requirement that’s ambiguous
* If something found to be incorrect getting that correct upon reviewing with all the stakeholders
* The outcomes of this phase would be a requirement specification document with accurate information then proceeding with test case development

**Customer/ business use cases (functional Testing)**

As a software test engineer it is the mandatory responsibility to ensure that all the intended functionality of the application is fully functional. In this phase the goal is to test all the features that are expected to be used by the end users once the application is mad available for the real world.

Eg: in a flight booking mobile application, able to search for a flights from various source and destinations, able to book ticket then process the payment..etc

**UI/UX testing**

Testing the user interface is essential, as front end is exposed to customer. No matter how much functionality delivered if the UI is not attractive and user friendly, application is not going to hit the pinnacle success. UI testing is all about the

* Verifying all the elements are at right position, with good colors and aligned properly
* Confirming that the input can be given to the system through the keyboard and buttons
* Making sure that all the agreed fields are present on the UI

**UX (user experience)**

The terms UI and UX are called out next to each other but as a software test engineer we must understand the difference between the them, UX is all about the user experience such as

* Ensuring all the inputs can be supplied properly by soft touching, prolonged touching, scrolling and accessing the buttons present on the UI
* Some native apps can be controlled via the hard panel buttons (power, volume buttons), being sure that they work properly
* Making sure the screen transition is smooth and it adds no delay while traversing
* Application properly recovers back and can resume from the place where it was after an unexpected interrupts.

**Testing on multiple devices**

As we know that we have plethora of devices in the market that runs different operating system, hence it is the basic need to verify them on all the platforms and on various devices. Getting all the mobiles and conducing testing is always challenging in terms of cost, however it ensures the confidence that we go production without any major leaks, as we are testing on real device.

Sometimes we may consider these on emulators or simulators or on the cloud computing system, this can happen in two cases

* When the business has taken cost cutting initiation
* When the testing has to kick-off in lower environments before even the full application is developed

In either of above cases however it yields better results and saves the cost, we can’t actually test some of the device interrupt scenarios also since we are not testing the real hardware, we may pass tests but they may fail in production

**Testing on multiple screen sizes**

Now a days smart devices are available in various sizes and we name them basis their look and purpose. Some of them we know are Ipad, Ipod, tablet, smart phone..etc. So testing as how the application fits to various screen sizes is very important. While this testing we should be observing carefully if any of the below happens and report that as failure immediately

* If any particular window / screen crops
* If the test text/ fields are overlapping
* If the screen fits when we toggle between the portrait and landscape mode

**Testing multiple browser**

The goal of the testing is to ensure the application supports cross browser testing, i.e. the ability of the application to be able to run on different browsers that available such as chrome, safari, UC..etc

**Compatibility testing**

The goal of compatibility testing is mainly about determining how well the application copes up with different operating systems. We have smartphones in the market that runs different OS. We should consider testing them with all of these either with the help of simulators/ emulators or with the real devices. Below is the list of a few operating systems.

* Android
* IOS
* Windows
* Symbian
* Blackberry

**Usability testing**

This test has to be performed to understand how easy for an end user to access the application. This is all about validating how efficiently the application serves the customer, look and feel of the GUI. The customer satisfaction is well determined in this testing.

**Security testing**

Security comes first, because any compromise in security standards can greatly bring down the reputation of an organization. The testing should be done in such as a way that the application shouldn’t be overwhelmed by volumetric injection, protocol hacks or any other cross site scripting attacks should be identified. Also we should ensure that the data is properly encoded during in/out bound transactions

**Performance testing**

This testing should be done to ensure the mobile application responds under critical load. There are a few ways where we can subject the application to a stressed condition, some of the examples are

Increasing the input bound traffic to see how it scales up to serve for the need of an hour

Injecting lot of volume of data to see how the application behaves

Hitting the application URL with numerous concurrent users, to see if the application hangs

While doing performance testing on mobile apps, we should keep the NFR (non- functional requirement) document with us. That document acts as bible to understand the threshold values of each type of performance attribute.

**Localization testing**

With the globalization now the organizations are trying to hit the market around the globe, since we aware that people at different places speak different languages, given this the designed application must be available in as many language as possible to gain the users from all locations. In this testing we will be focusing on how the application text and screens are being displayed in different languages and there is no translation or content mismatch

**Certification compliance testing**

Before going to market, in order prove that we are trustworthy we should be procuring or undergo certain certificate standards to build the trust in the market. The goal of the testing is to verify that the application abide to the standards of all the applications

Eg: able to satisfy the X509 certificate for authentication

**Best mobile testing practices to adopt**

We learnt about the testing methodologies to carry out to test a mobile application, now it is time to discuss some of the best practices

**Choice of real devices**

Albeit its cost oriented, testing on real devices is highly recommended below are some of the advantages.

* We are very much testing the application on the real device.
* There is no difference we see between the test and how the customer uses it when it gets to the market.
* All the interrupts and hardware exploratory scenarios can be replicated
* All system level (E2E) cases can be tested hassle free

But this is legitimately debatable, but its best practice to use real device to test the customer friendly scenarios ones the application is fully ready.

**Choice of emulators/ simulators**

Emulators/simulators are important to be used even though we just finished our discussion about real devices. The lore here is, when to use what type of approach makes more sense. The simulators/ emulators are best used when the application isn’t that stable and developers wanted to test them at a component level or at an integration level. Even at the system level it helps by avoiding procuring lot of hardware.

**Implementing cloud based testing**

Cloud based testing is undoubtedly a best solution as all the resources are readily available to us. Unlike the on-premise environment we need not bother about the infrastructure setup. We will have all the mobile types available on the cloud resource all we need is install the application and start testing. This saves lot of time and cost, because the cloud works on the concept of “pay-as-you-go policy.

**Implementing the automation testing**

By far we have discussed only about how a mobile application should be tested manually by honoring the topic we selected. But still it is highly recommended to bring in automation to help with faster execution of the test scripts with less or no manual effort.

Hope the content is going to have a great level of impact on your mobile application testing knowledge, thank you for walking through the content.

More we learn more we grow ☺