MINISTERUL EDUCAȚIEI REPUBLICII MOLDOVA

UNIVERSITATEA TEHNICĂ A MOLDOVEI

Facultatea „Calculatoare, Informatică și Microelectronică"

FILIERA ANGLOFONĂ

RAPORT

Lucrare de laborator nr. 0

la Programarea Aplicațiilor Mobile

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Chișinău-2017

Laboratory Work 0

Subject: The choice argumentation of the mobile operating system.

Purpose of work:
- Study different mobile operating systems.
- Study their advantages and disadvantages.
- Choose an IDE and mobile OS to work on.

Introduction

The following work is of extreme importance regarding the fact, that every success is hard work and meticulous planning, a strategy well thought out and a research done perfectly well.

It is clear that, the future of any software product is determined by its base, the roots, and in this case, the roots are the mobile platform that is going to be chosen. If the roots are not good enough, the future of the software product is not bright. There is literally no point in developing a project that will shortly cease being required, or supported by its platform due to a flaw in the very beginning, of the planning phase.

Anything can happen, thus the chosen platform should be thoroughly analyzed for further futility, since we live in a progressive, exponentially and technologically advancing world.

That's merely one, but a fairly significant factor to mind in the beginning, but there's a lot more.

Factors to consider

1. Long-term risk
As mentioned in the previous part, one and the most important factor to consider is the long-term risk. It is basically studying if the platform you choose is a stable enough one, or an obvious risk, that soon might cease existence. It's a critical deep research that may help prevent total failure.
The conclusion of how big is this risk, however, is represented by a complex study of all the other factors.

2. Performance and stability
It is obvious that users like flawless, high performance. Nobody enjoys bugs, lags and screen freezes.
A trivial factor to consider when choosing a mobile platform is how the system is handling apps, and how the whole experience feels in general.
A good amount of research should be dedicated to analyzing the way the system operates with the amount of resources it is given, and how it is shared with the apps, checking if it meets the app requirements.
The more stable the system is, the better user experience would be and the greater the apps will run.

3. Audience coverage
Another, very significant factor to mind is the amount of people that uses the specified platform, and also its potential evolution. The quantity of people using a mobile device on a given platform, is directly proportional to the potential income and coverage the product might attain.
Therefore, this point is the most important in terms of the finantial aspect.

Alternatives

There are obviously a lot of alternatives, but for a serious, potentially profitable selection, these are the top mobile operating systems currently stick with their positions in the mobile market:

Android OS

The obvious choice. It's an open source OS that allows developers to work as they desire, the way they want to do it, creatively. Nowadays it has become much easier to make any Android app by online tools which furthermore don't require deep programming knowledge. And that is why there are millions of latest Android apps invented daily and publicly stored in Google Play store.
Because of adaptability in apps and productivity in OS including the availability of free apps, the Android OS is the leader and dominant OS with wide numbers of users - thus make it first in the list of best operating system for mobile phones.
Multitasking, highly customizing capability, various widgets - these are the best features of Android.
It is the most popular OS, requires nearly no investments to develop on and publish.

iOS

iOS is not best at everything, yet it offers the best package of mobile functions. Still, in comparison, iPhone has the best camera features, video recordings with slow motions and up to this day holds the best music producing tech specifications.
This system is provided to be minimalistic, simple and appealing to the user. It is the system of the most expensive smartphones, therefore it's a kind of a niche, still, it's the second most popular OS according to the statistics.
It's programmed in C, C++, Objective-C, Swift.
This choice definitely has financial potential and user coverage, but it needs considerable investments(macOS and/or iPhone device for testing, high AppStore fees).

Windows OS , BlackBerry OS, S40 OS and more

These are very narrow oriented OS that aren't covering even 10% taken from the total user coverage even if taken all together. There are other smartphones operating systems that are coming in future to fight against the most popular OS. Some of those are: Firefox OS, Ubuntu Phone OS, Samsung Tizen, Open WebOS, Jolla Sailfish, Amazon Fire OS and much more. Most of them are in developing stage and running in Linux based platform just like Android. Looking at the statistics though, nothing big is expected from any of these so far.

Final Choice: Android OS

After trying to work with xamarin forms, spending a month to make a pomodoro cross-platform app, that is probably not working on iOS, because there was no way of testing it, the decision was taken: no more. Trying Android studio next, it was obvious, the workflow is immensely superior. A similar task was done within a day or two. Therefore the choice is obvious, native Android OS development is the way to go.

Here are some pros and cons about the choice:

Pros

- Android has lot of scope for improvment and research.
- Android market share is higher than any other.
- Huge community to get help from.
- Proper development tools. (Android SDK, Android Studio, etc.)

Cons

- The contraints in memory and processing power limit applications to be smaller.
- Java programming language. (It's easily learnable though)

Conclusion

Mobile App development platform is a broad field, offering a wide array of possibilities. So you need to make a mobile app development decision that is:

Deciding on a mobile app development platform

The aim is to deliver the mobile app to the right audience, at the right time-regardless of the device and development tool. These are some things to consider when deciding on a development platform:

Knowing the target audience:
Do you see higher mobile engagement rate from Android or iOS users? It is needed prioritize the potential customer needs as the first thing over them all.

Deciding on technical features the app should include:
Understanding what technical features each mobile platform provides can help with much with the workload while developing the app.

Financial aspect:
Each mobile platform offers different income opportunities. If it is required to acquire proper cash flowing in constantly, target the mass market with a large audience for the product in the making.

Looking at the future of the mobile platform:
When selecting a mobile platform asking a simple question of whether it is stable or not, and will it survive tomorrow, is crucial. Mobile app industry is bringing many shifts on a day by day basis, and therefore it is a should, to think of long-term consequences of choosing a particular mobile platform.

Bibliography

- **Factors to consider when choosing a mobile platform**
  https://www.scnsoft.com/blog/9-factors-to-consider-when-choosing-a-mobile-platform

- **How to choose the right development platform for a mobile app**
  https://mlsdev.com/blog/56-how-to-choose-the-right-development-platform-for-a-mobile-app

- **Top mobile operating systems**
  http://www.problogbooster.com/2016/02/Top-Mobile-Operating-Systems-Mobile-OS-Overview-Guide.html

- **Handwritings from Mobile Applications Programming course** of Lector:
  prof.univ. I.Antohi.
  Chișinău: UTM
  2017