

Mobile Application for Android Técnico Lisboa

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Activities Report

Abstract—With the ongoing rise of the mobile technologies and market, Técnico Lisboa wanted to provide a mobile application as a window to its learning management system - Fénix. After founding the mobile team in March, the development of the application began. The target of the mobile application was the Android system [1]. The application was released in September, going public in the first day of classes. It received many public praise as it provided information about the students' ongoing curricular courses on their mobile phones and tablets. After the release I provided technical support and implemented additional features to the application listening to the users' feedback to create the best user experience of Fénix in the mobile world.

Index Terms—Android, Fénix, FenixEdu, IST, Mobile application

1 INTRODUCTION

Nowadays we may use more our mobile devices than our laptop or Personal Computer (PC). We've access to all kinds of information in any place and reaching this information has never been easier. Instituto Superior Técnico (IST) wanted to provide just that - a quick access to our institution data on the go.

2 THE START OF THE TEAM

2.1 Fenix@IST

Starting in January 2014, I decided to work on a side project for mobile - a Rich Site Summary (RSS) feed reader for IST so that the students could get notifications of the latest course news as they're released in Fénix.

The mobile choice was easy as I could only test the application using Android. I had to learn how the system environment worked, concerns about data and battery (that usually we don't have on other platforms). Also I had to learn how the FenixEdu API [2] worked.

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Manuscript received January 3, 2015.

This API allowed getting information on various endpoints of the Fénix system.

Since the application would be a simple course feed reader I only needed information about what courses was the person attending to. To achieve that, the application would need to authenticate the user through the IST ID and password in order to be able to retrieve personal curricular information.

Along the development I had some problems due to the fact that I've never developed neither for the Android system nor with the FenixEdu API. At the time, the FenixEdu Team had a public Java SDK so that a Java application wouldn't need to implement the communication made between the IST servers and the application. However, the SDK wasn't working for the Android environment so I had to manually implement the web requests between the application and the IST's web endpoints.

After circumventing many problems the application was ready to release mid February, just in time for the beginning of the new semester, and was published in Google's application catalog under the name of Fenix@IST.

2.2 Application acquisition

Following the application release I offered support solving many of the problems that were

	ACTIVITY					DOCUMENT						
	Objectives x2	Options x1	Execution x4	S+C x1	SCORE	Structure x0.25	Ortogr. x0.25	Gramm. x0.25	Format x0.25	Title x0.5	Filename x0.5	SCORE
(1.0) Excelent												
(0.8) Very Good												
(0.6) Good												
(0.4) Fair												
(0.2) Weak												
	2	1	4	1	8	0.25	0.2	0.25	0.25	0.5	0.5	1.95

found by the users. The application was well received by the end users since there wasn't any integrated mobile solution at the time and this provided a great way to be always on par with the latest course news.

After a while, I got contacted by Direção de Serviços de Informática (DSI) in order to talk about the application. After some discussion the application was acquired by IST and its name was changed to "Técnico Lisboa" and I joined FenixEdu as founding member of the Mobile Team along with Ricardo Barata (former IST student).

3 THE OFFICIAL IST'S MOBILE APPLICATION

3.1 Application Requirements

The application acquired by IST could only read the student's course feed and notify the user about the news of each course. IST wanted a complete Fénix mobile experience therefore new requirements were established: the application wouldn't require any user authentication and could access many of the IST's public information (canteen dishes for the day, shuttle schedule, degrees available at IST, etc...). It would also offer a private area (under the user's authentication) that would provide the user's courses, payment information and curriculum information (grades and credits). It would be a richer Fénix portal fully integrated with the Android system.

3.2 Application Development

The application development started in March 2014. Our team started implementing synchronization mechanisms that were integrated with the Android platform and then proceeded with the implementation of each component defined in the requirements document.

Initially it was planned to release the app in June 2014, but that was postponed since the application would need some adjustments in terms of functionality offered and design. After that, the release date was set to mid September 2014 to be in parallel with the entry students' registration at IST and the first week of classes. So the work continued during the

students' summer break. I've worked at DSI in the Summer along with Ricardo. The application improved greatly in this period and, at the end of August 2014, the application entered a near-release state. We then started testing the application under different conditions and fixed small issues that remained.

3.3 Application Release

In September 2014 the application was ready to be released. We had to coordinate with various departments at IST in order to advertise the application and make it public knowledge.



Figure 1. Android Application as an headline in IST's webpage *figura obr estar referida no texto!*

The students that would enrol for the first time at IST would also be able to install the application as they were in the queue to proceed with their registration. It was also advertised through social media tools such as Facebook. A mobile website was also setup to introduce the application to everyone [3].

Our team also created a stand in the first week of registrations so that we could offer on-site support to every user that could have a problem or suggestion to the application.

4 CONCLUSION

Looking at a bigger project like this one made, me realize some of the real world problems - in this case a product that a institution was in need to provide.

This was indeed a big project for a team of 2 elements but after surpassing all technical difficulties that are part of engineering design

we were very proud to provide a great solution to all of IST's community.

As of December 2014 this project is still active and we continue to add new functionalities and listening to all the feedback received in order to provide the best Fénix experience on mobile. Right now our team has new systems to explore and we'd hope to bring it to every one of them in the near future.

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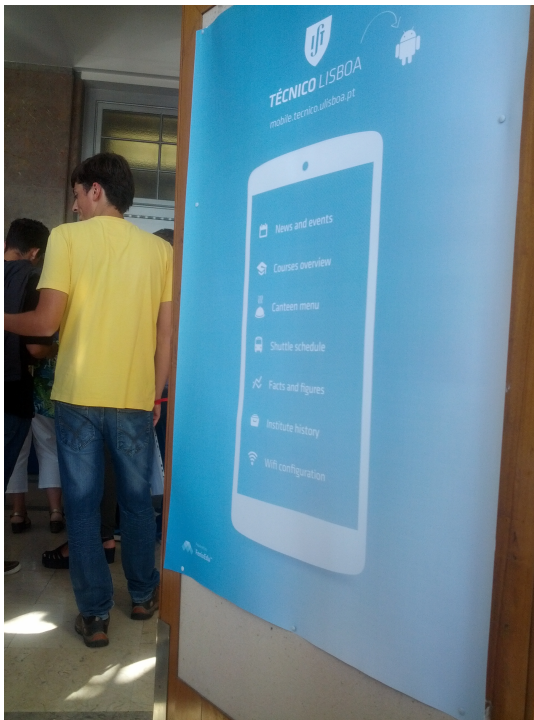


Figure 2. Our stand with the mobile application poster

ACKNOWLEDGMENTS

I'd like to thank the FenixEdu team who helped me incorporate this small project into something that is now part of IST's institution and helped conquer the mobile field that lacked until now. Special thanks to Ricardo Barata who I've worked directly with and that without him the project would not be what it is today.

REFERENCES

- [1] <http://www.android.com/> (visited on 2nd January 2015)
- [2] <http://fenixedu.org/dev/api/> (visited on 2nd January 2015)
- [3] <https://mobile.tecnico.ulisboa.pt/> (visited on 2nd January 2015)

APPENDIX

STATEMENTS OF EXECUTION

Relatório de Atividades

Bolsa de Iniciação à Investigação Científica

Durante o período relativo à bolsa de iniciação à investigação científica na DSI no âmbito do desenvolvimento de aplicações web, tive como principal actividade o apoio à equipa de desenvolvimento do projecto Fénix, no qual se destacam as seguintes tarefas:

- Adaptações, reformatações e melhorias na Framework de workflow da DSI/Fénix/Bennu;
- Apoio a tarefas diversas no âmbito dos sistemas Fénix/Bennu;
- Apoio ao desenvolvimento de novas soluções arquiteturais no âmbito do sistema Fénix.

Lisboa, 28 de outubro de 2014

O Bolseiro,

O Orientador Científico,

Frederico Miguel Reis Sabino

Prof. Luís Guerra e Silva