

الجمهورية الجزائرية الديمقراطية الشعبية
République Algérienne Démocratique et populaire
وزارة التعليم العالي والبحث العلمي
Ministère d'Enseignement Supérieur et de Recherche Scientifique
جامعة عمار ثليجي الأغواط
UNIVERSITÉ AMAR TELIDJI



كلية العلوم
FACULTÉ DES SCIENCES
قسم الاعلام الالي
Département d'Informatique

GESTION DES ANNONCES DE DÉPARTEMENT D'INFORMATIQUE

Réalise par
Mohammed Youcef Sahli

Proposé par
Zohra Abdelhafidi

2020

ACKNOWLEDGMENT

First of all, I thank Allah our Creator, for giving me the strength, will, and courage to do this humble work.

Many thanks to my supervisor for providing advice and guidance from start to finish for this work.

I would like to thank everyone who contributed directly or indirectly to the completion of this work.

Finally, I would like to express my deep gratitude to my family who have always supported me and to everyone who has participated in completing this thesis. As well as all the teachers who contributed to my education.

DEDICATE

*I dedicate this work to two people who never stop sacrificing themselves for my success.
To my dear mother and father who supported me throughout my school years.
And to all my family who helped me all my life To all my dear friends and colleagues
And for everyone who taught me throughout my school life.
And to my classmates in third grade
thank you all.*

.....

ABSTRACT

Smartphones are constantly evolving and amaze us with the features and services that they offer. We use it frequently without even realizing it. Every user is spoiled for choosing which apps to install which means any type of person can find the apps that suit him best.

Among the most used and popular applications are photo and advertisement posting applications.

In this end-of-study project, we developed a mobile application with aim of advertising or informing the department students by any news without being in the university.

Via our application, we can publish or post news or incoming events that interest students

Key words : Mobile application, smartphone, Android, Android Studio, JAVA , Fire-base

CONTENTS

List of Figures	vi
Introduction	1
1 Methods and services	3
1.1 Android development	3
1.2 Firebase	4
1.2.1 Definition	4
1.2.2 Services	4
1.3 Conclusion	5
2 System Design and Modeling	6
2.1 Introduction	6
2.2 Unified Modeling Language (UML)	6
2.3 Why use UML	6
2.4 Modeling	7
2.4.1 The use case diagram	7
2.4.2 The class diagram	8
2.4.3 Sequence diagrams	8
3 Application Development	12
3.1 Introduction	12
3.2 Development environment	12
3.3 Presentation of the application	13
General summary	18
Bibliography	19

LIST OF FIGURES

1.1	Android Distribution Numbers [2]	4
2.1	use case diagram	8
2.2	class diagram	9
2.3	Authentication scenario	10
2.4	Scenario to modify account information	10
2.5	Scenario to add published	11
2.6	User search scenario	11
3.1	Internet activation	13
3.2	start interface	13
3.3	login interface	14
3.4	the main interface	14
3.5	search for users interface	15
3.6	publish post interface	15
3.7	User Profile Interface	16
3.8	User personal account interface	16
3.9	Modify personal information interface	17

INTRODUCTION

Smartphones have become an essential part of our daily life. They accompany us throughout the day, allowing us to not only make phone calls but do more through the applications installed in it. The fact that access to the Internet has become possible almost anytime and anywhere, thanks to the emergence of the third and fourth generation of cell phones, which played a huge role in the development of smartphones and the popularization of many mobile applications.

Among the applications most used and most appreciated by users of the mobile platform, there are applications for posting advertisements and posts for an organization or department. These special applications allow users to follow news of the workplace or place of study.

The problem

University is a place with many people, professors, administrative staff, and students, and there is a place to post announcements and brochures, but sometimes the news is difficult to access.

The purpose of the project

The goal of our graduation project is to create a system that allows the user to search for faculty posts and news without going to college in person, while taking advantage of the popularity of smartphones and the Android system.

Project organization

In addition to this introductory chapter, this report includes three other chapters:

In the first chapter, a study on the mobile computing technologies used.

In second chapter, we give the conceptual model using UML.

The third chapter is dedicated to the presentation of our work

In recent years, there has been a very rapid development in the field of information technology. Among these technologies are mobile development technologies. In this chapter we will see the necessary services used in this project.

1.1 Android development

It is an operating system based on Linux kernel and is currently being developed by Google .

It was launched in June 2007 after Google's 2005 takeover of the startup of the same name.

The system was first designed for touchscreen smartphones and tablets, then diversified into connected objects and computers such as televisions (Android TV), cars (Android automatic), computers (Android-x86) and smart watches (Android Wear) [1].

As of 2015, Android is the world's most used mobile operating system with over 80 % market share in smartphones, ahead of Apple's iOS [1].

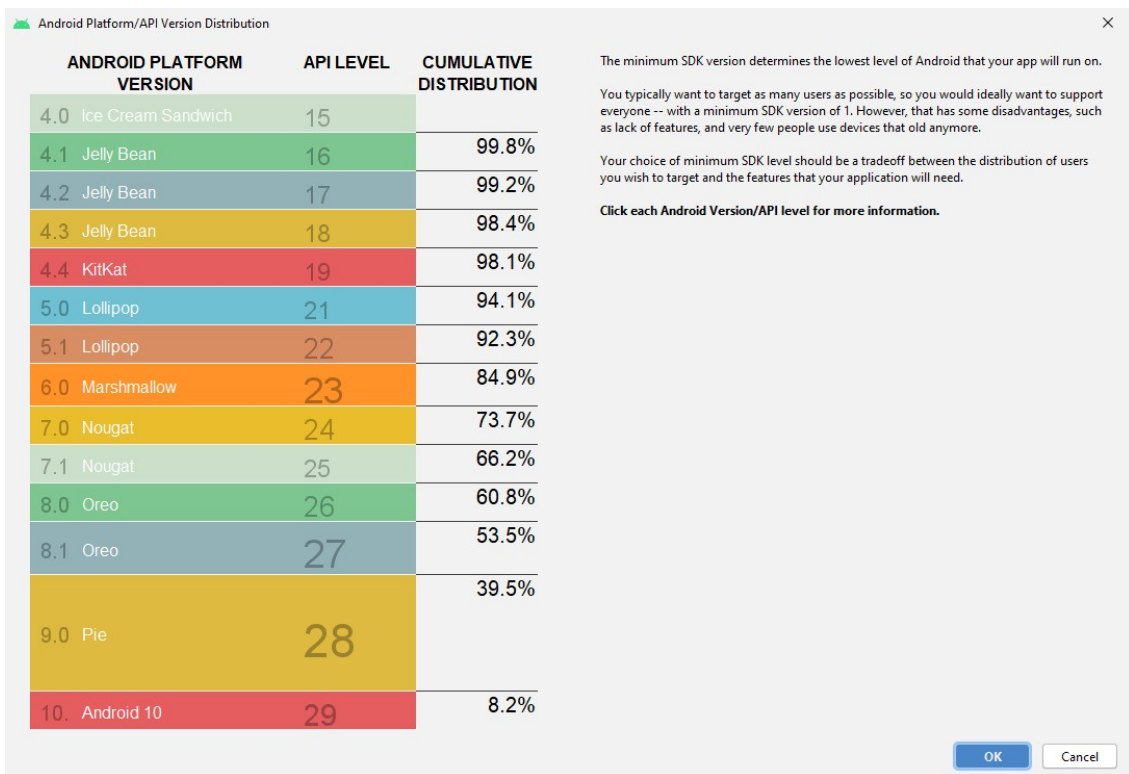


FIGURE 1.1: Android Distribution Numbers [2]

1.2 Firebase

1.2.1 Definition

Firebase is a set of hosting services for any type application (Android, iOS, Javascript, Node.js, Java, Unity, PHP, C ...). He proposes to host in NoSQL and in real time databases, content, social authentication (Google, Facebook, Twitter and Github), and notifications, or more services, such as for example a real-time communication server. Launched in 2011 under the name Envolv, by Andrew Lee and by James Templin, the service is acquired by Google in October 2014. It is now owned by the parent company of Google [3].

1.2.2 Services

Firestore Analytics Firestore Analytics is a free application measurement solution that provides information on application usage and user engagement.

Firestore Auth Firestore Auth is a service that can authenticate users using only customer-side code. It supports connection providers social Facebook, GitHub, Twitter and Google (and Google Play Games). In addition, it includes a user management

system allowing developers activate user authentication with a login by email and password stored with Firebase.

Realtime Database Firebase provides a real-time database and a backend as a service.

The service provides application developers with an API that allows synchronize application data between clients and store it in the cloud by Firebase.

Firestore Firestore provides secure (client / server) file downloads for Firebase applications, regardless of network quality. The developer can use it to store images, audio, video or any other generated content by the user. Firestore is supported by Google Cloud Storage.

1.3 Conclusion

In this chapter, we study some of the information technologies we used and give some definitions and examples that can be useful for us in developing our application.

2.1 Introduction

Analysis and design is an important and essential phase in the development of good software. This phase consists of listing the expected results in terms of functionality and performance and describing the operation of the future system using a modeling language .

In order to achieve a high-performance program . We chose UML (Unified Modeling Language) to design the app [4] . In this chapter we will discuss:

- UML (Unified Modeling Language)
- why use UML language.
- Analysis and design of our application.

2.2 Unified Modeling Language (UML)

UML is a Unified modeling language used in software development and object-oriented design, it represents a means to specify and represent the components of the system . [5] [6] .

2.3 Why use UML

The reasons that led us to choose the UML modeling language are that

- UML is a language independent of programming languages.

-
- UML is a language offering a set of tools covering the whole development cycle of a system.
 - UML allows to model in a simplified way a complex system thanks to a set of diagrams. Its diagrams are classified into 2 categories

structural diagrams which describe the static aspect of the system and behavior diagrams which allow to describe the functioning and the dynamics of the system.

These combined diagrams provide a complete view of the system.

2.4 Modeling

We choose three UML diagrams to model your application:

- 1) Use case diagram.
- 2) Sequence diagram.
- 3) Class diagram.

2.4.1 The use case diagram

The use case diagram allows to determine the functional requirements of the system and to describe the behavior of the system from the point of view of its users.

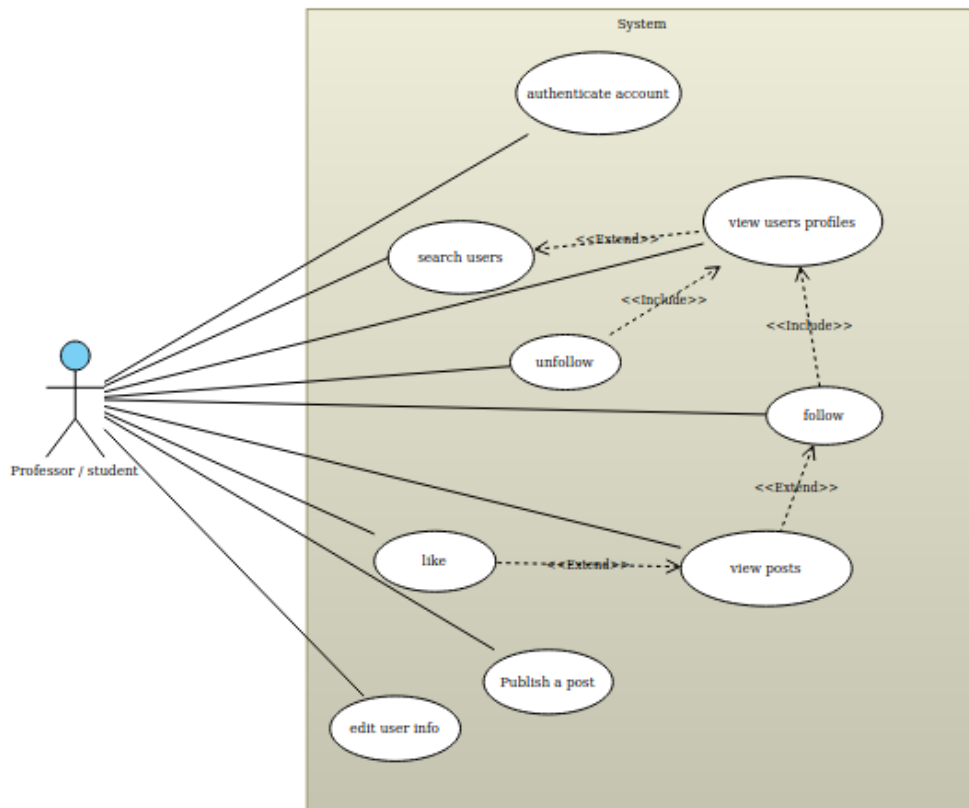


FIGURE 2.1: use case diagram

2.4.2 The class diagram

In software engineering, a class diagram in Unified Modeling Language (UML) is a type of static topology diagram that describes the structure of a system by showing the system's classes, their properties, processes (or methods), and the relationships between objects.

2.4.3 Sequence diagrams

Sequence diagrams provide a way to document the possible scenarios associated with each use case described in the system.



Figure 2.2: class diagram

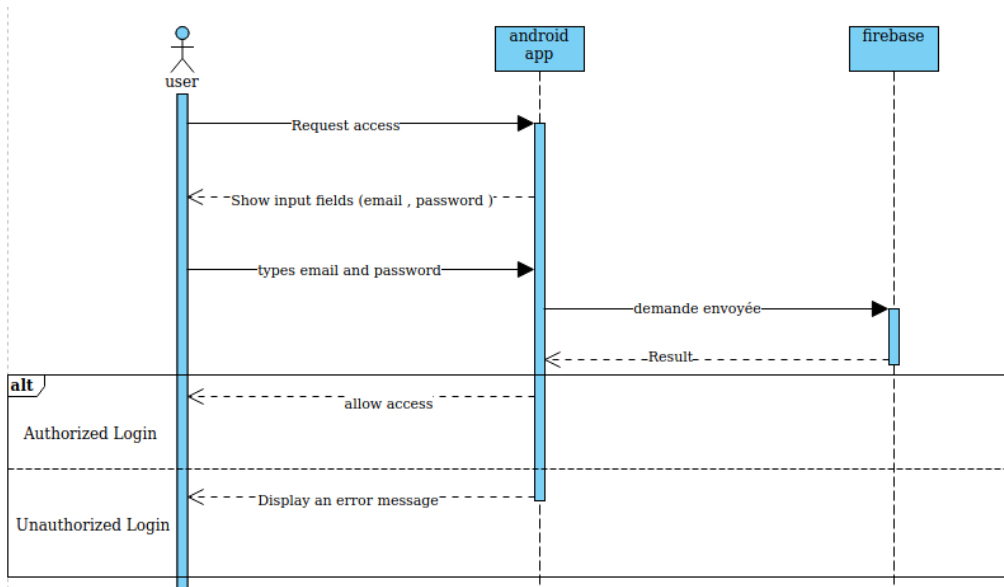


FIGURE 2.3: Authentication scenario

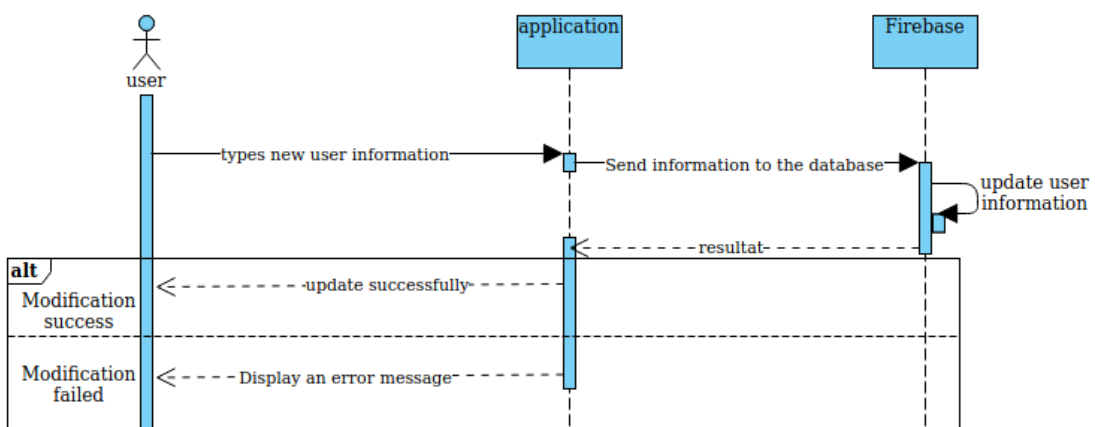


FIGURE 2.4: Scenario to modify account information

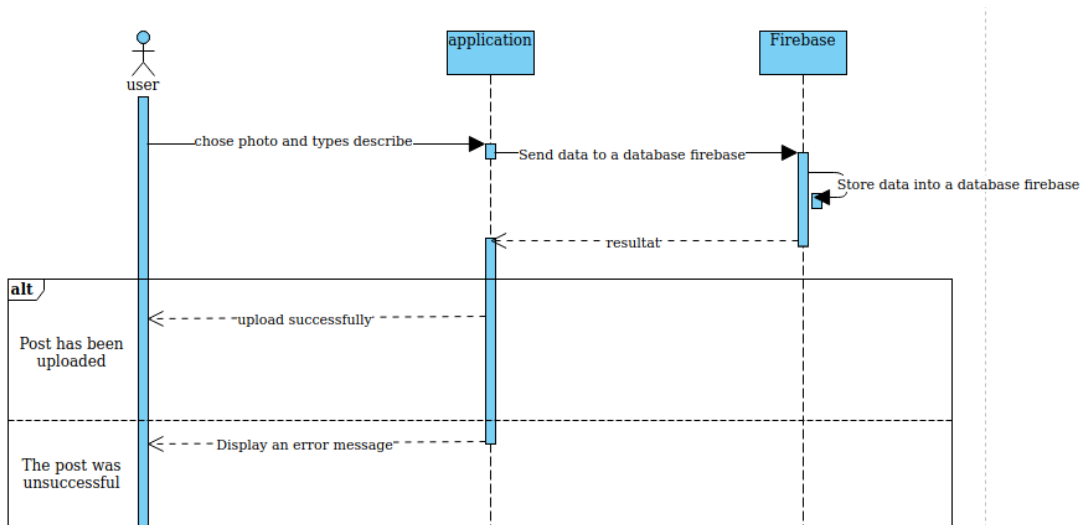


FIGURE 2.5: Scenario to add published

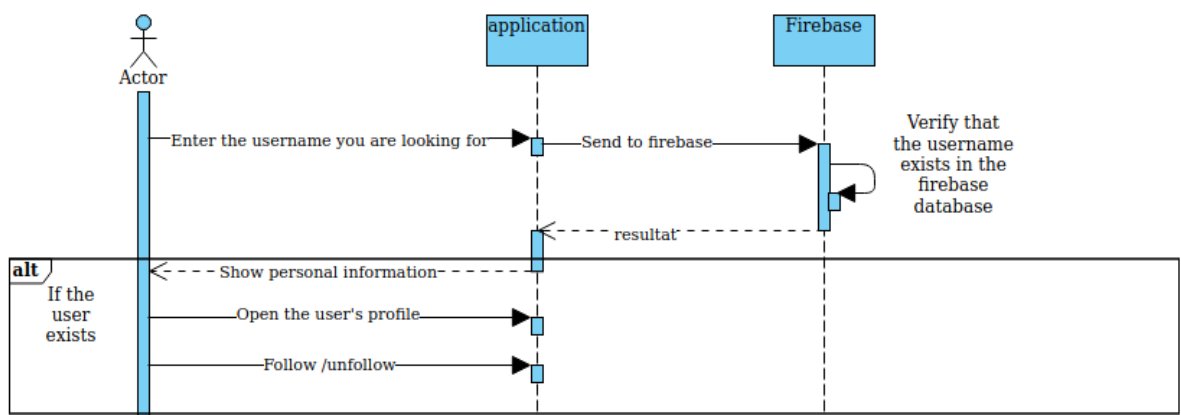


FIGURE 2.6: User search scenario

3.1 Introduction

After designing the application from a static and dynamic point of view, we start the implementation part.

3.2 Development environment

The hardware and software tools used during the development of our application are as follows:

Hardware tools

- PC : We used a PC (lenovo g50-30) for the the application (
 - Operating system : Linux Mint Mate).

- Mobile device: Condor p8 lite (Android 7.0) was used.

Software tools

- IDE : Android Studio 3.1.

- Languages used:
 - ◁ JAVA programming language.
 - ◁ XML description language.
- Data file: JSON files (Firebase).

3.3 Presentation of the application

Below we will introduce the application through the users, and their component interfaces using screenshots.

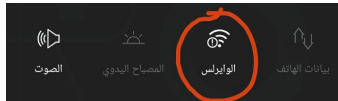


FIGURE 3.1: Internet activation

Before starting the application, the Internet connection must be activated:



FIGURE 3.2: start interface

The first interface that is displayed after running the application, this interface will ask that I log in if you are not logged in .

(start interface appears only if you are not logged in) .

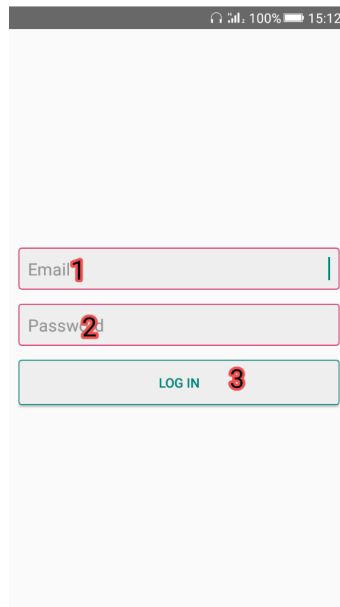


FIGURE 3.3: login interface

This interface will require that you enter the e-mail in the field (1) and the password in the (2) field, then press the number (3) to log in.
(login interface appears only if you are not logged in or if you log out)



FIGURE 3.4: the main interface

In this interface, the posts of the users you follow appear, and you can learn more if you swipe down, or you can go to search for a user by pressing (1) or add a post by pressing (2) or go to your profile page by pressing the number (3) or you can Like the post by clicking (4) or go to the user's profile by clicking the number (5).
(main interface appears only if you are logged in).

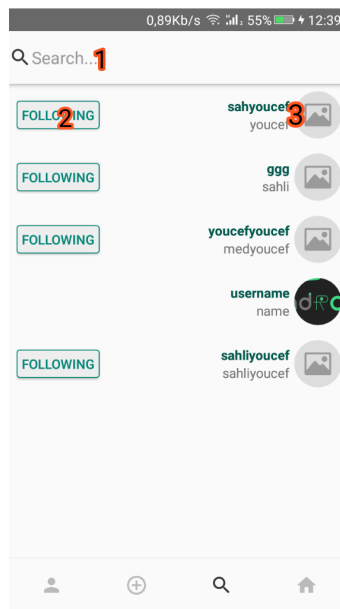


FIGURE 3.5: search for users interface

In this interface, users appear. You can enter the username you are looking for by pressing (1) Or you can follow or unfollow by pressing (2), Or go to the user's personal page by pressing the number (3) . This interface appears after you choose an image to

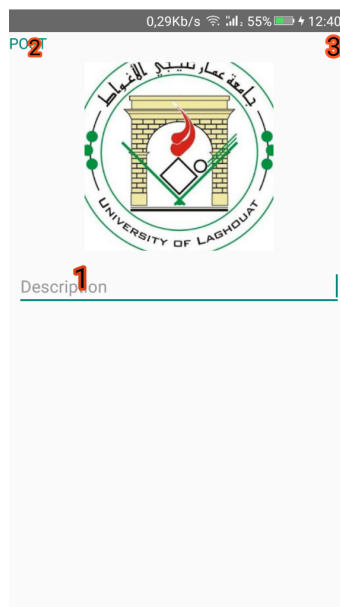


FIGURE 3.6: publish post interface

add a post. Enter a topic or description and then press the number (1) then press (2) ,or you can cancel and exit the interface by pressing the number (3) .

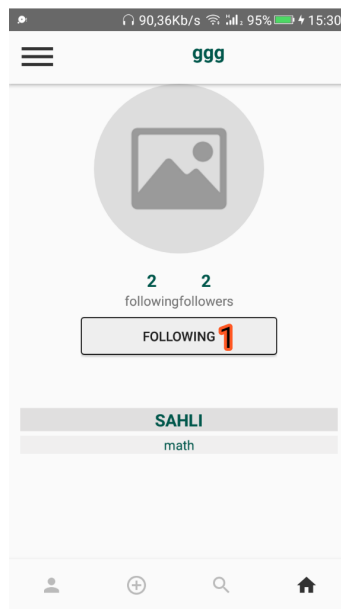


FIGURE 3.7: User Profile Interface

In this interface, the user's personal page appears. You can see the personal information. And you can follow it or unfollow it by pressing (1).

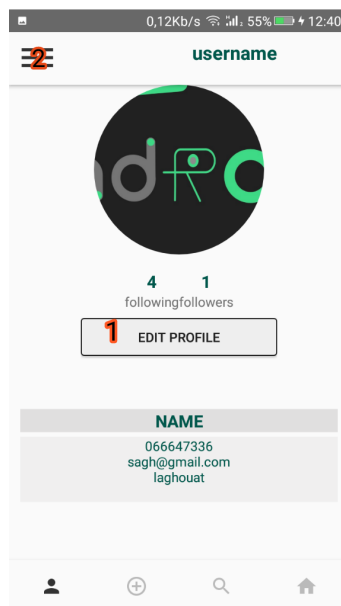


FIGURE 3.8: User personal account interface

On this interface, your profile page appears. You can see your personal information. You can modify it by pressing (2) log out by pressing (1)

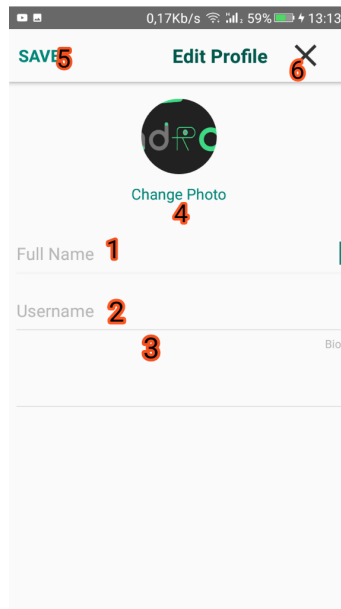


FIGURE 3.9: Modify personal information interface

In this interface, you can amend your personal information. Enter your good full name in the number (1) and the new user name in the number (2) and your contact information and description in the number (3) and you can change your profile picture by clicking on the number (4) then Click (Save) (5) or you can just exit this interface by pressing (6).

GENERAL SUMMARY

During this final graduation project, we created an Android app for college announcements. To reach my goal I went through several stages.

Firstly, thanks to my study of the aforementioned computing techniques, it allowed me to get an idea of the techniques that I should adopt to create the application.

The second step I did was design the application using UML, this stage helped me improve my knowledge of design and modeling structures using diagrams.

The last step I need to do is mention the hardware and software used and present the app with screenshots.

BIBLIOGRAPHY

- [1] “Android,” in URL <https://en.wikipedia.org/wiki/Android>, accessed 23 august 2020. 3
- [2] “Android version distribution statistics are available in android studio,” in URL <https://www.xda-developers.com/android-version-distribution-statistics-android-studio/>, accessed 23 august 2020. vi, 4
- [3] “Firebase,” in URL <http://en.wikipedia.org/wiki/Firebase>, accessed 23 august 2020. 4
- [4] E.-S. Rezigat Aboubakeur, *Application Android pour la géolocalisation des magasins du quartier*. Fifth ed., 2018. 6
- [5] N. MAHDAOUI, *Pratique des syst’emes d’informations UML outil de g’enie logiciel*. 2007. 6
- [6] “Uml,” in URL http://en.wikipedia.org/wiki/Unified_Modeling_Language, accessed 23 august 2020. 6