

DEMOCRATIC AND POPULAR REPUBLIC OF ALGERIA MINISTRY OF
HIGHER EDUCATION AND SCIENTIFIC RESEARCH UNIVERSITY OF
MOHAMED BOUDIAF - M'SILA



FACULTY OF MATHEMATICS
AND INFORMATICS
DEPARTMENT OF COMPUTER SCIENCE



A Dissertation in Fulfillment
For the Requirements of the Degree of Master in Computer Science

DOMAINE: Mathematics and Informatics
FILIERE: Informatics
OPTION: IDO
ORDER NUMBER: 41

By : Hamadi Nor El Houda

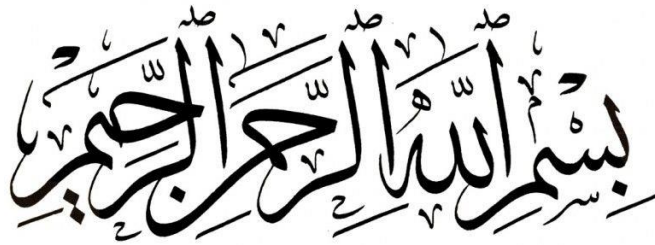
Entitled

**A mobile application to monitor the memorization
and review of the Holy Quran.**

Presented publicly to the jury:

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Academic Year: 2020/2021



Dedications

I dedicate this work:

-  *To my dear father and my dear mother.*
-  *To my dear brothers.*
-  *To all who have sacrificed their time for science and to all who use science for the good and prosperity of mankind*

Acknowledgments

I thanking the greatest Allah for completing my graduation note.

I would like to express my sincere gratitude to my supervisor the professor Mokhtari Rabah for continuous support, for his patience, for his guidance helped me the whole time of research and writing of graduation note.

All the gratitude to the president of the jury professor Guerna A and the examiner's professor Yakoubi R for devoting their time and their effort to read and examine my work.

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General Introduction

General Introduction

Memorizing the Quran is a characteristic of the Muslim community. Muslims have distinguished themselves since the dawn of time through their authentic method of memorizing the Holy Quran. Transmitted from the Sheikh to students, using wooden slates and ink, this method challenges all new technologies and establishes itself as a source of knowledge and learning of the basic principles of this doctrine. This authentic method, adopted by the Quran schools, relies on writing the verses on the slate and memorizing them after the Sheikh orders to erase the old version and replace it with the corrected one. The only way a Sheikh could control and count how many verses his students had acquired was by relying on his own memory.

New tools have been introduced into learning operations as a result of technological advancement and emergence. These days, desktop and mobile applications and websites have been developed for the purpose of assisting in the learning process of the Holy Quran. Our dissertation belongs in this context. We are therefore looking at developing a mobile application allowing teachers to track student memorization of the Holy Quran and to provide a set of important functionalities for the management of the Quran learning operation.

The Taj application also contains learning the provisions of intonation and a lot of features, including the payment of student dues and the annual distribution of the Qur'anic school, as well as providing many reciters to hear the various types of intonation.

Taj is an abbreviation for developing a creative generation in memorizing the Noble Qur'an.

تاج: تطوير جيل ابداعي في حفظ القرآن الكريم.

Chapter I
Mobile application development

I.1 Why Mobile Apps?

I.1.1 Transformative Devices:

Because mobile devices are the first mobile computing platforms, they enable a slew of new business and personal software possibilities. Sensors on mobile devices are used to determine their location, direction, and environment. While a laptop can communicate via Wi-Fi and Bluetooth, mobile devices communicate via cellular and near-field communication (NFC). Apart from these capabilities not found on other computing platforms, mobile devices share similar capabilities, such as data display and manipulation. The features are usable due to their portability and ability to store data in various formats. [01]

The smartphone and tablet represent the most significant advancement in technological capability since the advent of the personal computer. Organizations design their activities and processes around available technology. [01]

I.1.2 Reaching Customers:

Organizers want to be prepared if a prospective customer expresses an interest in a product or service. In recent years, smartphone adoption and sales have significantly outpaced PC sales. Because static data and the primary interface are always available, apps serve as a critical link to your organization. Additionally, having a mobile app can help build brand loyalty and awareness. A mobile-friendly website may be sufficient to attract or retain a customer, but an app is required. [01]

Having the app available on the device at all times may result in your company is one of the first choices when a consumer is in the market for something. The consistent interface of the app may assist the individual in learning to work with your organization more quickly and efficiently than they would with another. Additionally, a mobile app may provide some functionality even if the device cannot connect to the Internet. Many consumers are opting for tablets in place of or in addition to a PC. Tablet sales are expected to surpass PC sales shortly, and many people are opting for tablets over a PC as their primary computer. [01]

Certain businesses have developed apps that enable positive interactions between customers and their brands. Numerous businesses are innovating to enable consumers and businesses to make and receive payments. Amazon has an app that allows consumers to scan UPCs and compare their products to competitors. NFC or Bluetooth technology could be used to notify customers when they are near your product in the store. The device's location could direct potential customers to a nearby store or even help them locate a product within a store.

It can make full use of the hardware and software capabilities of the device to provide the customer with features that make your products an easy choice. The potential exists. Businesses can realize that potential through the use of an app. This is a win-win situation for all parties involved. [01]

I.1.3 Changing Business Process:

The potential for mobile technology to impact business processes is one of the most exciting possibilities. Businesses are paying close attention to mobile because these characteristics indicate that the technology may have strategic and tactical implications or may become a competitive necessity. A few years ago, business process reengineering (BPR) garnered significant attention in both the business and academic worlds. Mobile technology's application to business processes is likely to follow a similar path. However, that path could be taken much more quickly due to Amitai Etzioni's experience applying technology to business processes. The excitement surrounding mobile technology demonstrates that taking a more aggressive approach to process reengineering may be more accurate than relying solely on automation, he says. These smaller organizations typically perform tasks on an hourly basis rather than on a daily or weekly basis. Larger organizations can also benefit from mobile-enabled process redesign. Numerous organizations are establishing mobile development teams to investigate, design, and implement process improvements. These businesses are focused on internal processes and are large enough to absorb the cost of developing apps to support them. The series begins with an examination of apps geared toward the fence-building industry, including Fence builder Pro. [01]

I.1.4 Making Money:

The Google Play Store and the Apple App Store provide access to the market of app purchasers for app developers. Apps generate revenue for their creators in a variety of ways. Advertisements on a small portion of the screen generate revenue for ad-supported apps. In-app purchases are a third method of revenue generation. The app market is exciting and innovative due to the combination of device capabilities, accessible market, and a diverse and large number of developers. The difficulty for a developer is to create a product that appeals to a broad audience, Mark O'Mara writes. Because the revenue generated by a single click is negligible, it is critical to acquire many users to generate significant revenue. Please view the interactive gallery to learn how small businesses can profit from mobile apps and how they can create their own. [01]

I.2 What is FLUTTER?

Flutter is a new tool from Google that enables developers to create cross-platform applications running on multiple platforms such as Android or iOS using a single codebase. It includes a 2D rendering engine, a functional-reactive framework inspired by React, and a set of Material Design widgets. Despite its infancy, it already supports complex interfacing, networking, and even file management. [02]

I.2.1 Why using FLUTTER? (FLUTTER Features):

- It is more than just creating Android and iOS applications in a single project; due to Flutter's high expressiveness, very little code is required compared to native programming on both platforms.
- Performance and user interface response.
- Another plus is that Flutter is Material Design-oriented and includes a slew of Material Design specifications.
- According to their repository, Google is also using Flutter to develop their new System UI called Fuchsia. [02]

I.3 Dart :

Dart is a client-side language optimized for rapid application development on any platform; it is free and open source.

Google created Dart with the primary goal of leveraging C-based languages such as C++, C#, and Java. It is a general-purpose programming language that compiles quickly, is concise, and is simple to learn. Dart is an object-oriented, optionally typed, class-based programming language that excels at functional and reactive programming. [03]

I.3.1 Dart Features:

- Dart can also be JIT (Just n Time) compiled for exceptionally fast development cycles and game-changing workflow (including Flutter's popular sub-second stateful hot reload).
- Dart simplifies the process of creating smooth animations and transitions that run at 60 frames per second.

- Dart is capable of performing object allocation and garbage collection without the use of locks.
- Due to the fact that Flutter applications are compiled to native code, they do not require a time-consuming bridge between realms (e.g., JavaScript to native)
- Developers have found that Dart is particularly easy to learn because it has familiar features to users of both static and dynamic languages. [04]

Chapter II

Mobile application development for tracking

Quran diagrams

II.1 Description of the application:

Taj application to manage the Quranic school and easily follow up on student's memorization of the Holy Quran.

- Our application contains the manager's account is characterized by:
- The possibility of forming classes and regiments for students.
- The possibility of creating profiles for each of the professors and students.
- The ability to manage all the operations of deletion, addition and modification.
- The ability to see all the absences, and access to all accounts.

In addition to the professor's account, which is characterized by:

- The ability to track student absences.
- follow-up memorization of the Holy Quran.
- The possibility of reviewing his account and inspecting his private data.
- Finally, the student account contains all the student's information.

II.2 Conception UML

II.2.1 Use case diagram

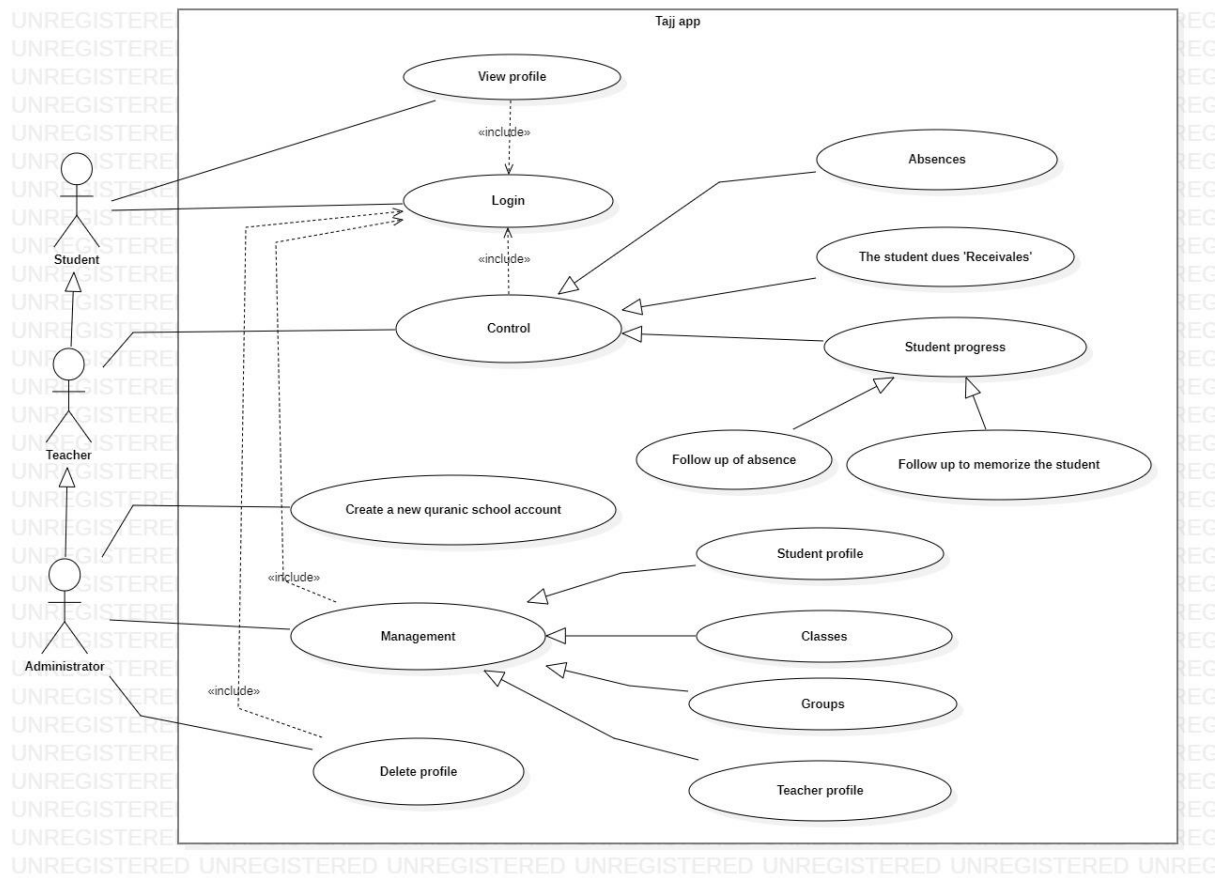


Figure II.1 Use case diagram

II.2.2 class diagram

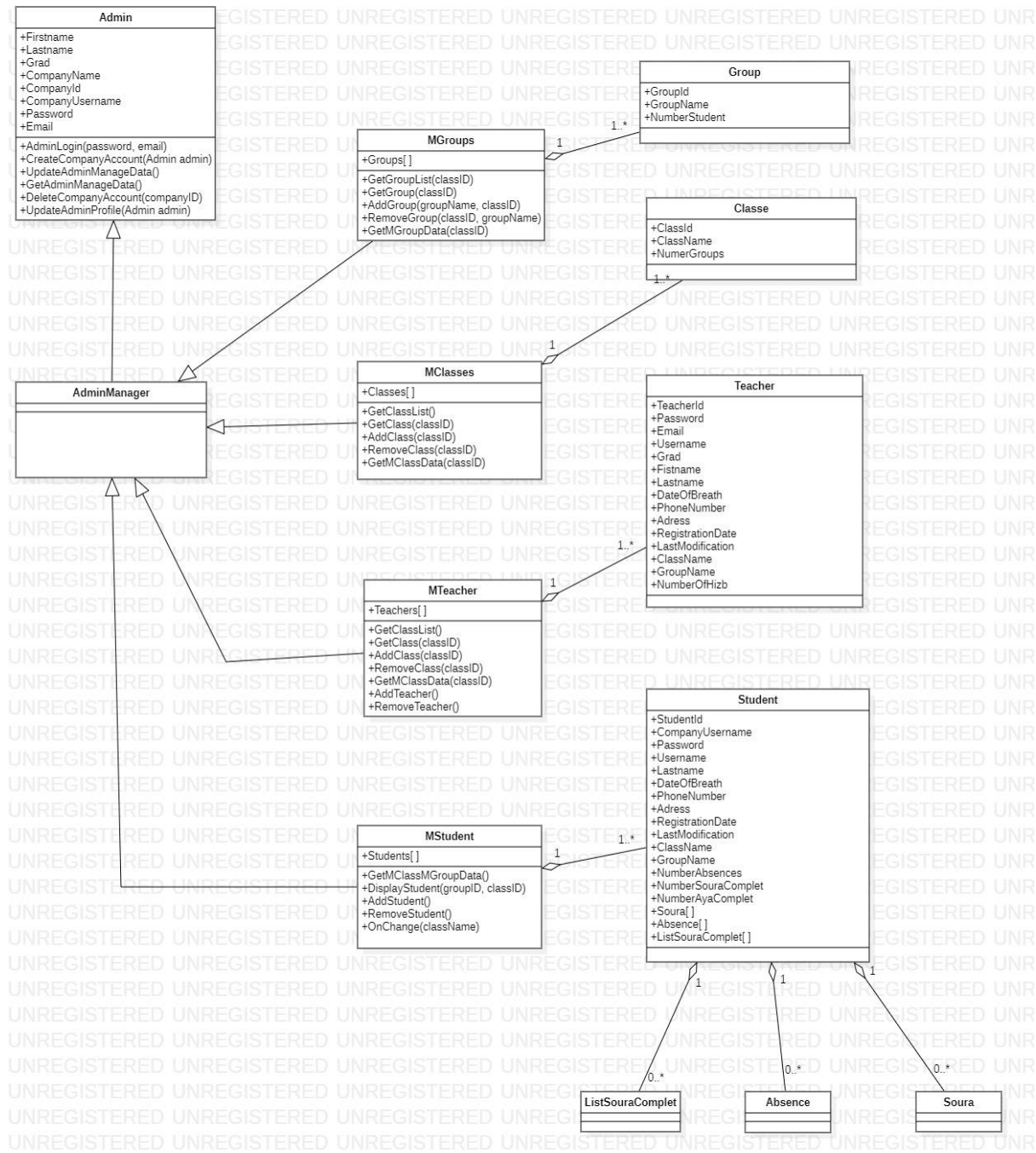


Figure II.2 class diagram

II.2.3 Sequence diagram

II.2.3.1 Recording absences and monitoring the student on the record

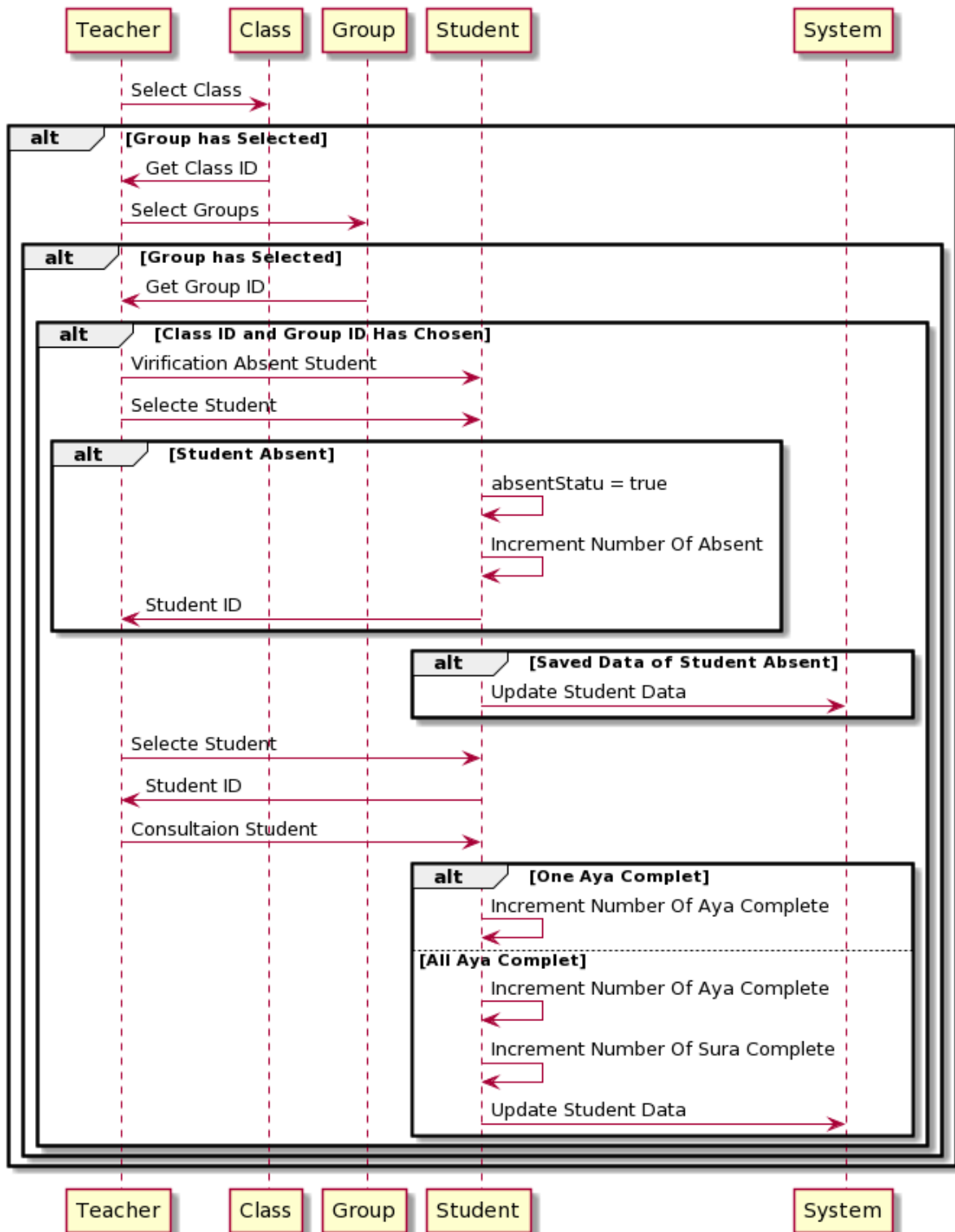


Figure II.3 Recording absences and monitoring the student on the record

II.2.3.2 Login Teacher

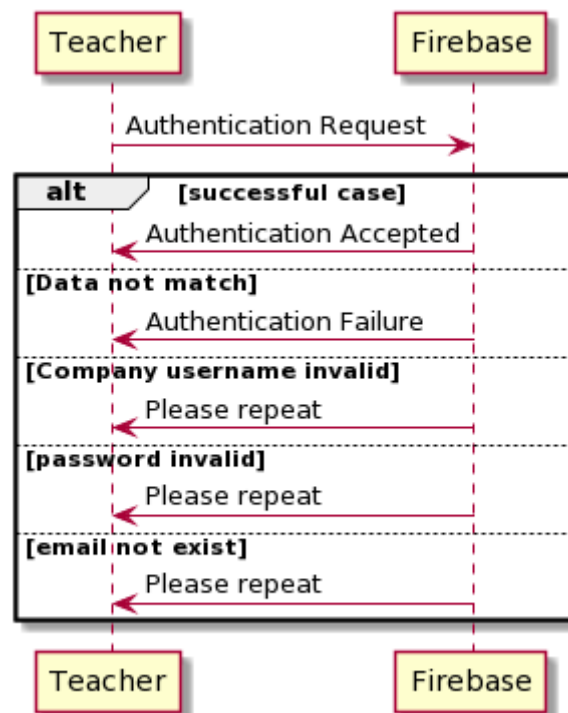


Figure II.4 Login Teacher

II.2.3.3 Login Student (The guardian of the student.)

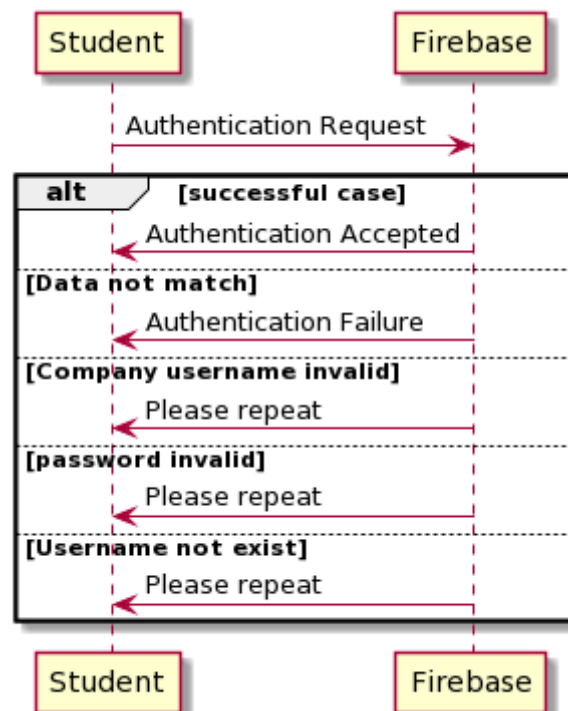


Figure II.5 Login Student (The guardian of the student.)

II.2.3.4 Login Admin

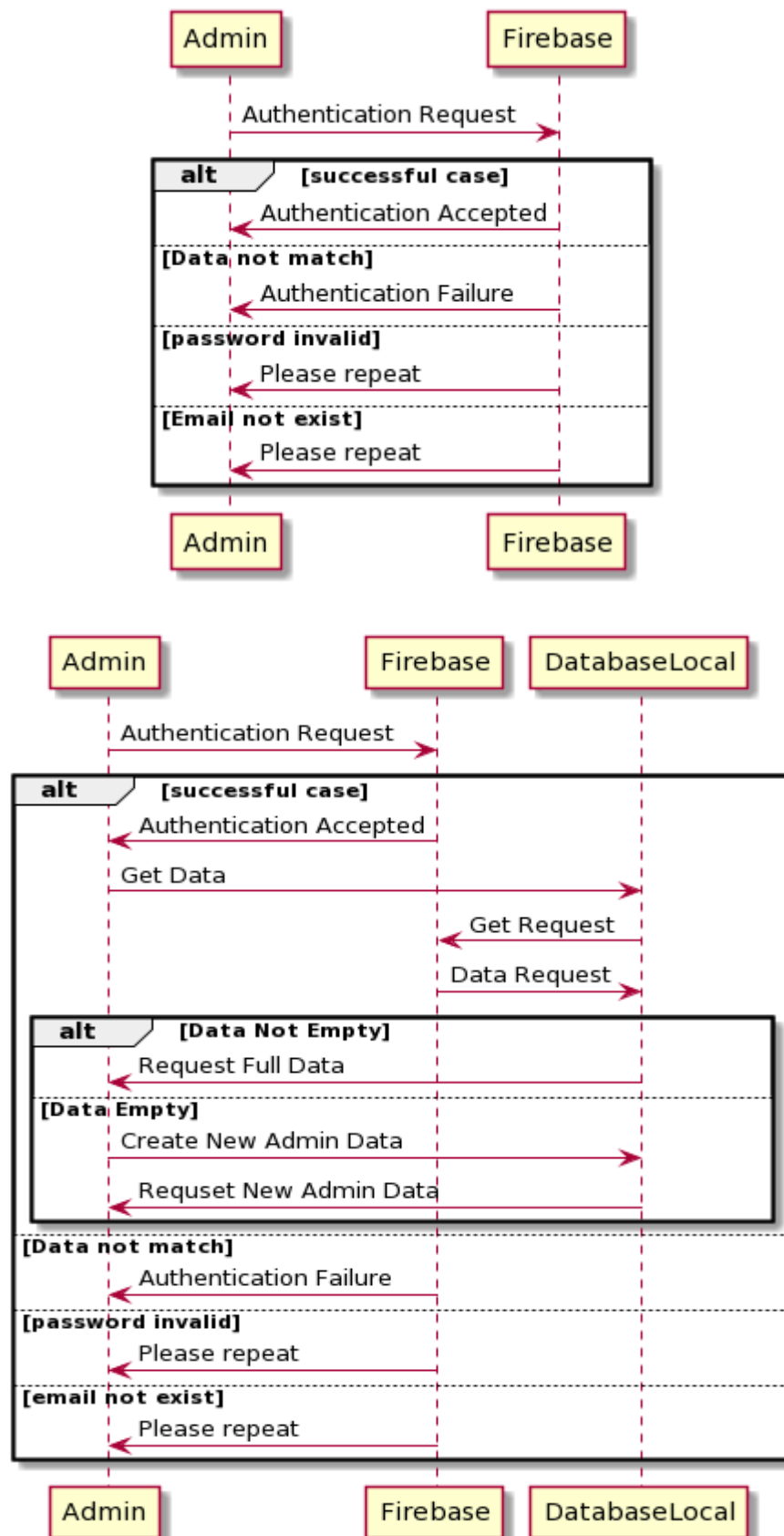


Figure II.6 Login Admin

Chapter III

Implementation and realization.

III.1 Tools and language used:

III.1.1 What is Flutter?

A tool that allows you to build native cross-platform (IOS, Android) applications with one programming language and codebase. [05]



Figure III.1 Flutter icon

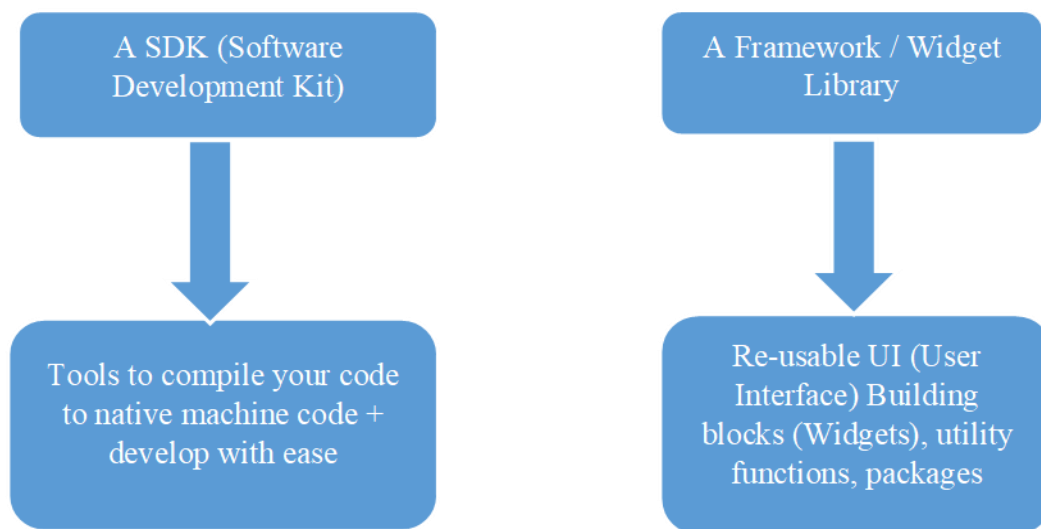


Figure III.2 Flutter

III.1.2 What is Dart?

Dart is a **statically typed, object-oriented** programming language developed by Google which can be used to build web and **mobile applications**. [05]



Figure III.3 Dart

Statically Typed	Object-oriented	Mobile Applications
You define which type(s) of data a variable or function uses.	Everything 's an object! You define classes as blueprints for your own objects.	Flutter uses Dart as a programming language to build native mobile apps.
<pre>String myName; myName = 'Max'; myName = 5; // Fails!</pre>	<pre>class Person {String name = 'Max';} Person p = Person(); print(p.name); // 'Max'</pre>	

III.1.3 What's Firebase?

Firebase is a fully managed backend service (Cloud Functions, Firestore, Authentication And more ...).[05]



Figure III.4 Firebase icon

III.1.3.1 Cloud Firestore:

Cloud Firestore is a scalable, flexible database for mobile, web, and server development developed by Firebase and Google Cloud. As with Firebase Realtime Database, it maintains data synchronization across client apps via real-time listeners. Additionally, it supports offline development for mobile and web, allowing developers to create responsive apps that function regardless of network latency or Internet connectivity.

Additionally, Cloud Firestore integrates seamlessly with other Firebase and Google Cloud products, such as Cloud Functions. [06]

III.1.4 Adobe XD:

Adobe Xd is a piece of software developed by Adobe that is initially used to prototype websites and mobile applications. It is an extremely useful tool for UI and UX professionals. [07]



Figure III.5 Adobe XD icon

III.2 The presentation of the application:

III.2.1 Page index:

This page represents the public interface of our application, with this page user can login and the administrator can also create his own Quranic school.



Figure III.6 page index

III.2.2 Create Quranic school:

the administrator creates his own Quranic school.

Figure III.7 Create Quranic school

III.2.3 Choosing user:

are you an administrator or teacher or student or user!?

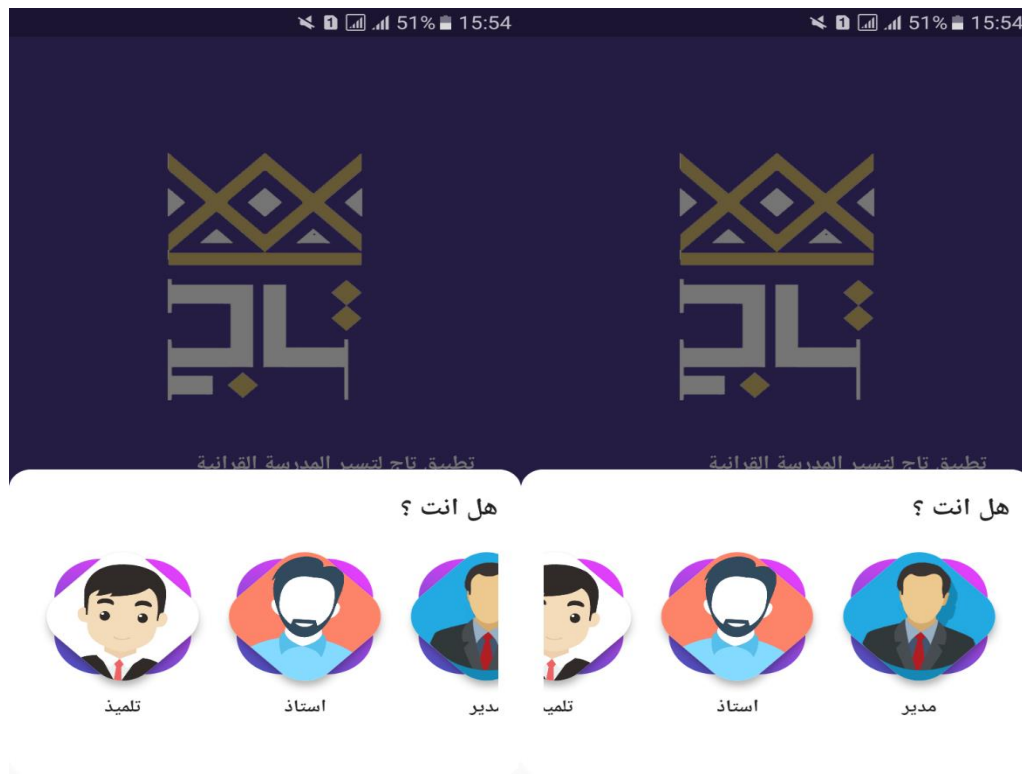


Figure III.8 Choosing user

III.2.4 Administrator login:

the administrator logged in in Quranic school



Figure III.9 Administrator login

III.2.5 User login (Teacher login):



Figure III.10 User login

III.2.6 Administrator account Page:

In this page when press the cloud, the cloud saves local data in firebase.



Figure III.11 Administrator account Page

III.2.7 Management page:

the administrator can manage anything in the Quranic school.

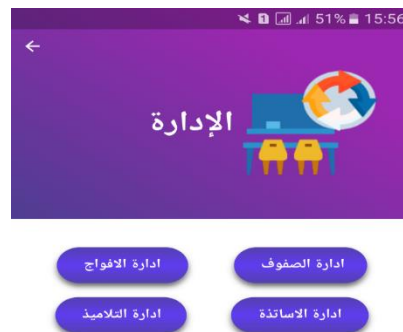


Figure III.12 Management page

III.2.8 Management Classes page (Add class):

the administrator can add a class.



Figure III.13 Management Classes page

III.2.9 Management groups page:

the administrator can choose a class.

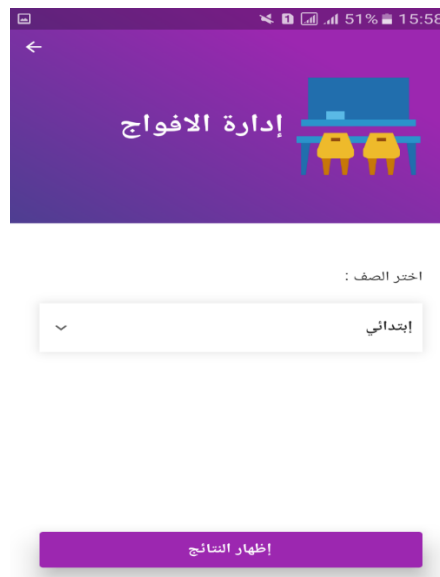


Figure III.14 Management groups page

III.2.10 Management groups page (Add group):

the administrator can add or delete a group.

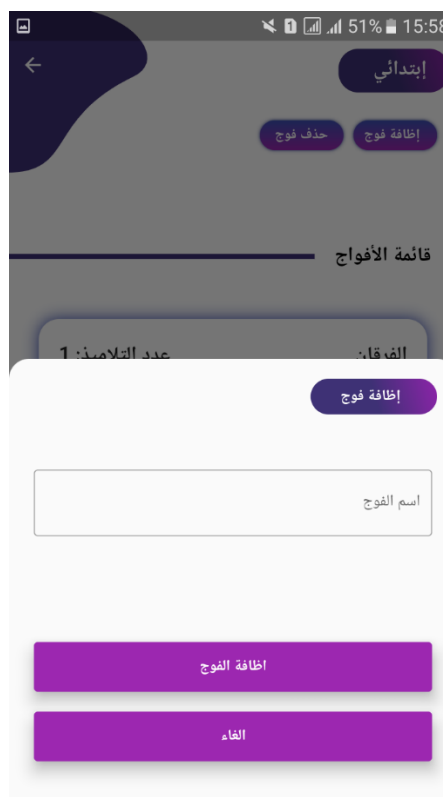


Figure III.15 Management groups page

III.2.11 Management teachers page (Add teacher):

إضافة استاذ

استاذ

استاذة

الإسم

اللقب

تاريخ الميلاد

رقم الهاتف

Figure III.16 Management teachers page(Add teacher)

III.2.12 Management Teacher page:

the administrator can see all the general information of the professor and define the groups that the professor will study and he can also edit and delete the professor.

تعديل استاذ

حذف استاذ

تحديد الانواع

معلومات عامة

الوظيفة : استاذ / استاذة

الاسم الكامل : أوزنية أحمد

تاريخ الميلاد : 7/20/1988

رقم الهاتف : 0789653241

عدد الاحزاب : 30

العنوان : مسيلة

تاريخ التسجيل : 22:08 2021-06-17

Figure III.17 Management teachers page

III.2.13 Management Teacher page:

the administrator can see all the private information of the professor and define the groups that the professor will study and he can also edit and delete the professor.

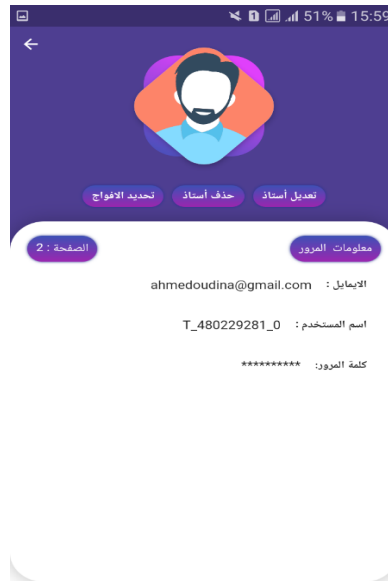


Figure III.18 Management teachers page

III.2.14 Define groups page:

The administrator can choose a class and determine the professor groups and he can also add and delete the groups.

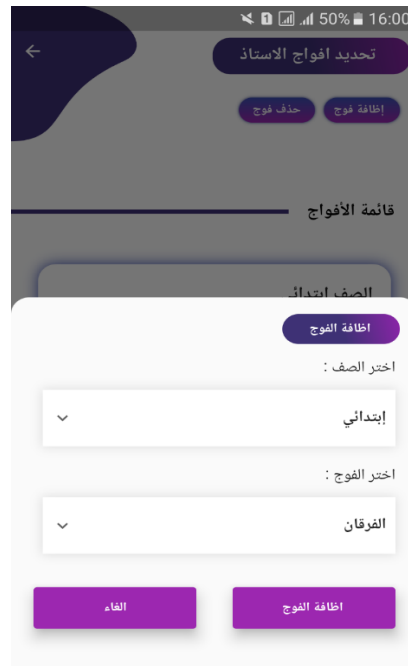


Figure III.19 Define groups page

III.2.15 Delete a professor:



Figure III.20 Delete a professor:

III.2.16 Delete a group:

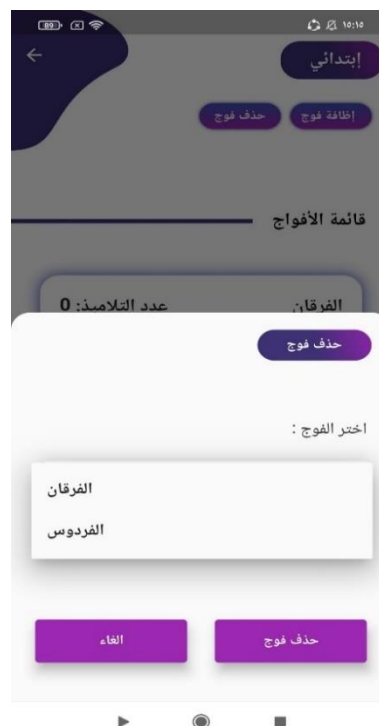


Figure III.21 Delete a group:

III.2.17 Management student page:

The administrator can choose a class and determine the group and he can also add and delete a student.

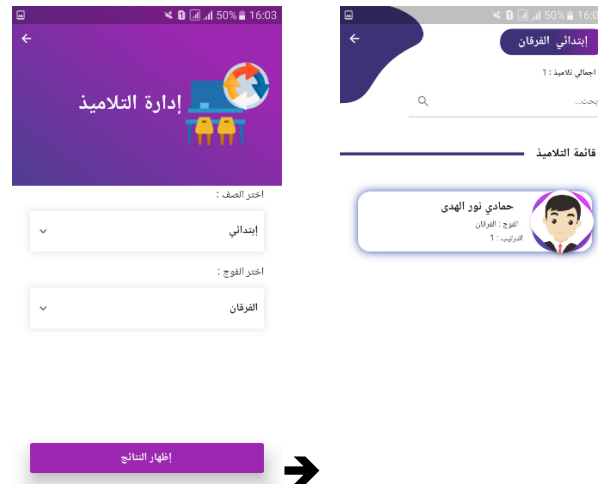


Figure III.22 Management student page:

III.2.18 Management student page (Add a student):

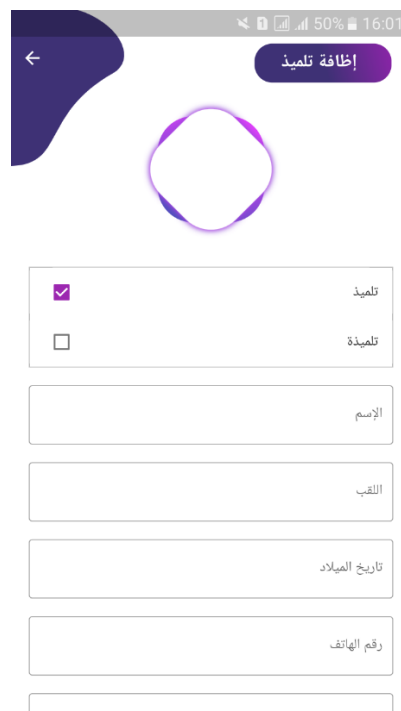


Figure III.23 Management student page (Add a student):

III.2.19 Management student page:

The administrator can see all the general information of the student.

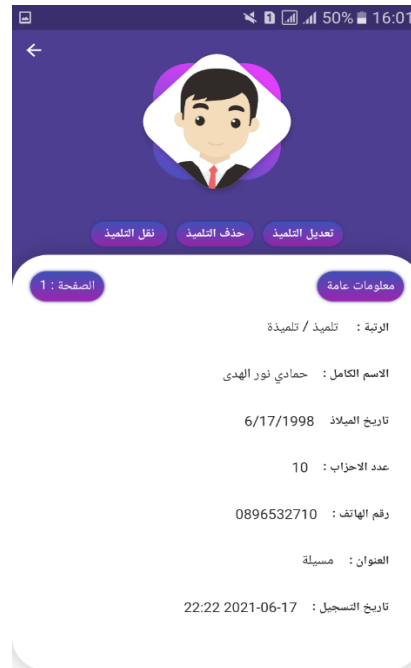


Figure III.24 Management student page:

III.2.20 Management student page:

The administrator can see all the private information of the student.

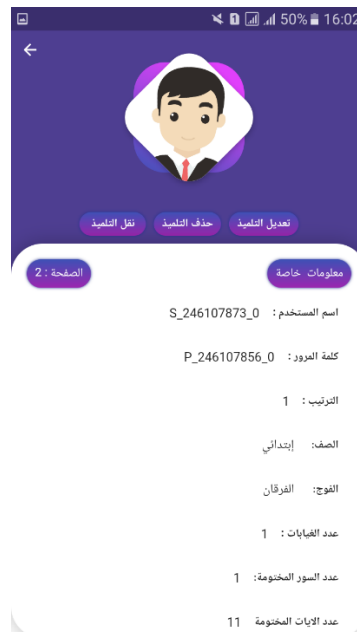


Figure III.25 Management student page:

III.2.21 sealed Quranic surahs:

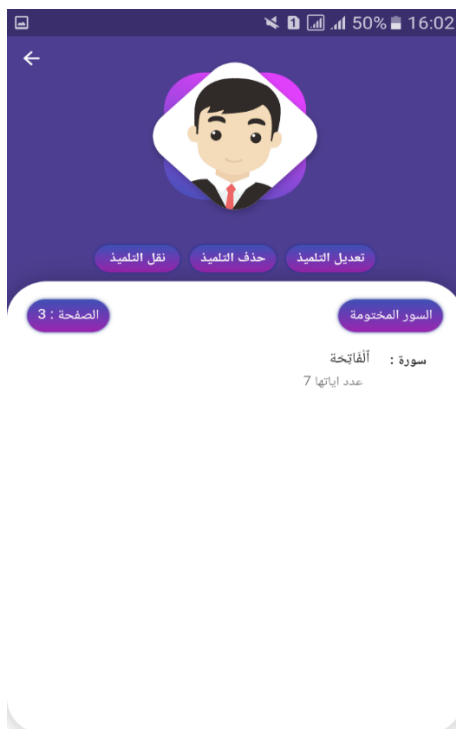


Figure III.26 sealed Quranic surahs

III.2.22 The surahs that are currently studying:

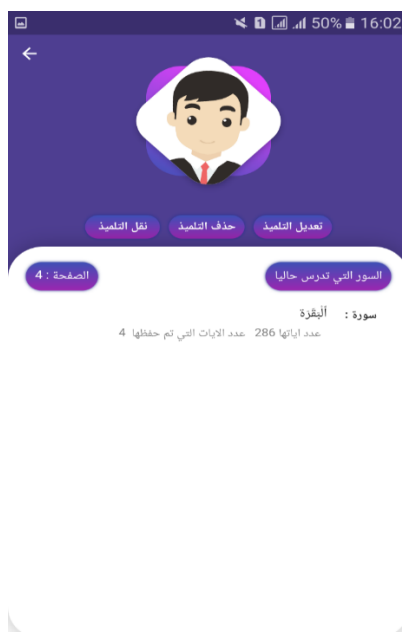


Figure III.27 The surahs that are currently studying

III.2.23 When the teacher login:



The image shows a mobile application interface for teacher login. At the top, there is a status bar with icons for signal, battery, and time (16:13). Below the status bar, a purple banner contains the text "مرحبا بعودتك مجددا" (Welcome back again) in white Arabic. Underneath the banner, there are four input fields with labels in Arabic: "اسم تعريف المؤسسة" (Institution identification name), "اسم المستخدم" (Username), "كلمة المرور" (Password), and "نسيت كلمة السر؟" (Forgot password?). A purple button at the bottom is labeled "تسجيل الدخول" (Login).

Figure III.28 When the teacher login

III.2.24 The professor account page:

*Figure III.29 The professor account page*

III.2.25 Student follow-up page:

The teacher can choose a class and determine the group.

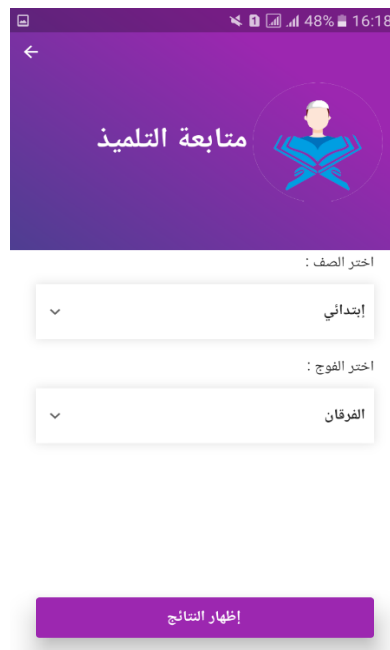


Figure III.30 Student follow-up page

III.2.26 List students:



Figure III.31 List students

III.2.27 Determine attendance and absence student:

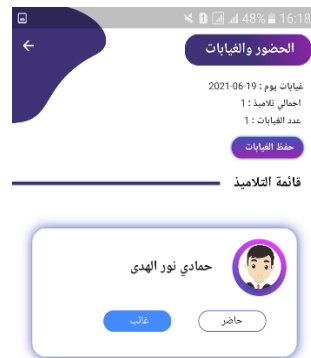


Figure III.32 Determine attendance and absence student

III.2.28 Student follow-up:



Figure III.33 Student follow-up: List of the students

III.2.29 When the professor clicks on the student's name, this page will appear:

When the teacher identifies a part of the verses, they will be colored in purple.

When determines the entire verses, they will be colored green



Figure III.34 When the professor clicks on the student's name, this page will appear

III.2.30 When choose the surah and select verse:

Figure III.35 When choose the surah and select verse

III.2.31 Save all verses:



Figure III.36 Save all verses

III.2.32 attendance and absence:

Determine a class and group.

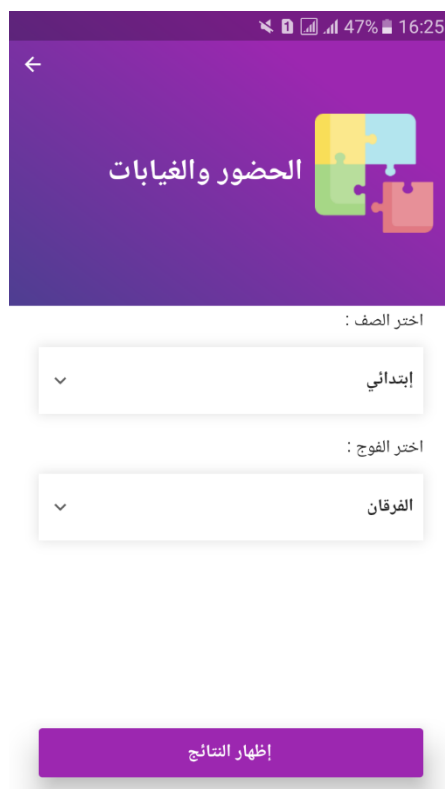


Figure III.37 attendance and absence

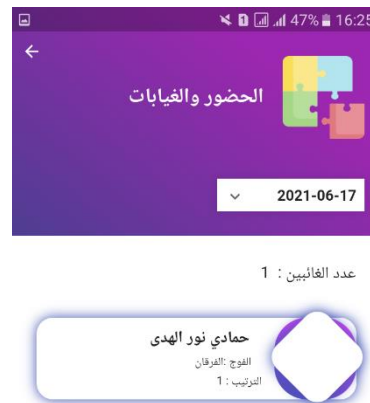
III.2.33 Student attendance and absence list:

Figure III.38 Student attendance and absence list

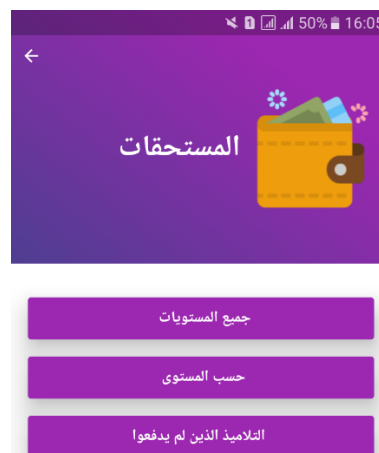
III.2.34 Student dues:

Figure III.39 Student dues

III.2.35 Student dues all Levels:

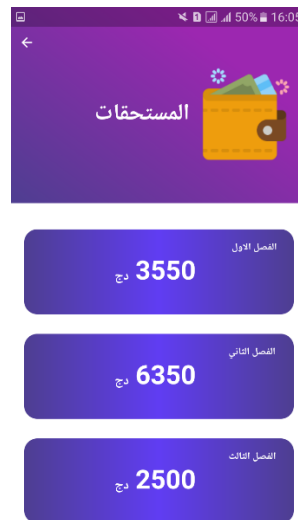


Figure III.40 Student dues all Levels

III.2.36 Student account Page:

The student or parents can see all the general information of the student.

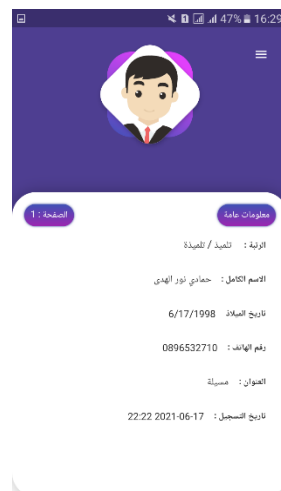


Figure III.41 Student account Page

III.2.37 Private info:

The student or parents can see all the private information of the student.

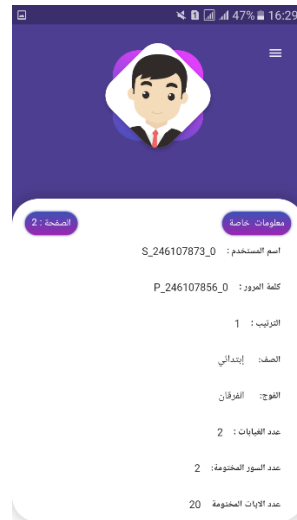


Figure III.42 Private info

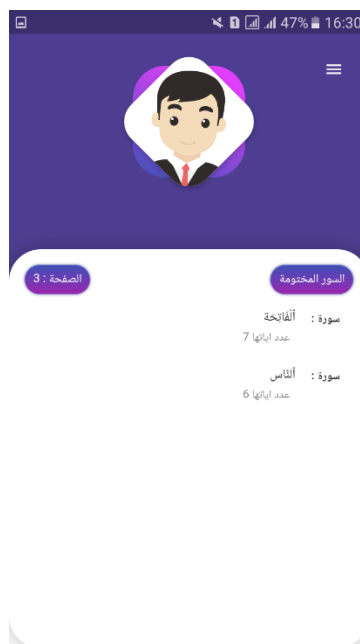
III.2.38 sealed Quranic surahs:

Figure III.43 sealed Quranic surahs

III.2.39 The surahs that are currently studying:

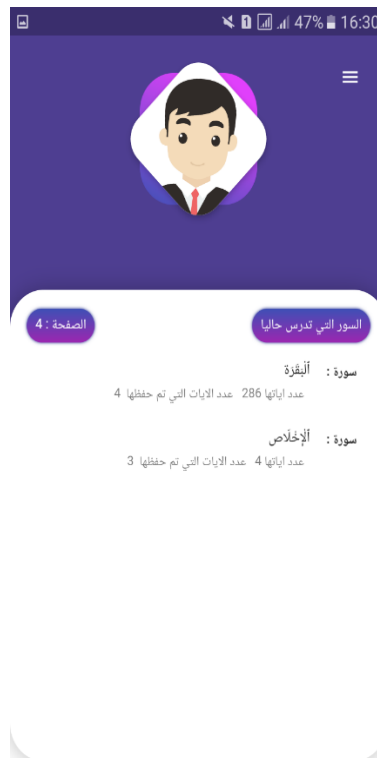


Figure III.44 The surahs that are currently studying

Conclusion

Conclusion

New tools have been introduced into learning operations as a result of technological advancement. Today, desktop and mobile applications and websites have been developed for the purpose of assisting in the learning process of the Holy Quran. In this dissertation, we have presented the mobile application TAJ. TAJ was developed for the purpose of enabling teachers to track student memorization of the Holy Quran. TAJ also includes a number of useful features for managing Quran learning operations.

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Summary:

Taj application for managing Quranic schools and tracking students' Quran memorization. The manager's account enables administrators to create classes and groups for students. And the Possibility of creating individual profiles for professors and students. Additionally, it is capable of viewing all absences and gaining access to all accounts.

Résumé

Application Taj pour la gestion des écoles coraniques et le suivi de la mémorisation du Coran par les étudiants. Le compte du gestionnaire permet aux administrateurs de créer des classes et des groupes pour les étudiants. Et la possibilité de créer des profils individuels pour les professeurs et les étudiants. De plus, il est capable de visualiser toutes les absences et d'accéder à tous les comptes.

ملخص:

تطبيق تاج لإدارة المدارس القرآنية وتتبع تحفيظ الطلاب للقرآن الكريم، يتيح حساب المدير للمسؤولين إنشاء أقسام وافراج للطلاب، إمكانية إنشاء ملفات تعريف فردية للأساتذة والطلاب. بالإضافة إلى ذلك، فهو قادر على عرض جميع حالات الغياب والوصول إلى جميع الحسابات.