بِسْمِ اللهِ الرَّحْمنِ الرَّحِيمِ

An-Najah National University

Faculty of Engineering & Information Technology
Computer Engineering Department

Graduation Project 1 Report

Students:

Ayah Shraim & Tasbeh Takrore

Supervisor:

Dr. Anas Toma

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Dedication

الإهداء

الى كُلّ مُسْلِمٍ يُحاوِل، ينهض، ثمّ يتعثّر، ثُمّ ينهض من جديد..

هذا جُهدُ المُقِلّ، نصنعه لكل، ونضعهُ بين يديكَ..

عسى ربُّنا أن يرحمنا ويرحمك.

Acknowledgment:

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Disclaimer:

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Abstract

The use of mobile phones has become widespread, and people rely on their smartphones and the tools they provide for many daily activities. Muslims have daily practices such as reading the Holy Quran, praying, performing thikr, determining the Qibla direction, and even memorizing the Quran. When memorizing, they need a tool that adapts to each person's mistakes for correcting their reading and testing their knowledge. We propose building the Muslim (مسلم) Application/Website to make it easier and provide many services that meet the daily needs of Muslims. Muslim offers many features, such as reading the Quran with tafseer for each independent verse, athkar and tasbeeh with interactive counters and voice, Qibla direction, and prayer times based on each member's location without the need for internet access. Moreover, users can create their own plan for daily activities, track their progress, and view weekly statistics for the plan. They can also back up or delete their plans and start again. Additionally, they can join or create communities to interact with others and receive support from other members of the app/website which can be also used by Quran institutions to make communities for their students and interact with them. Besides, Muslim can support Arabic language and already started working on English language..

Furthermore, users can test their memorization with any juz, surah, or even page, in an interactive, adaptive, and user-friendly way that hides the verses for testing and allows users to correct their mistakes. Users can also receive hints related to each verse length and get all information related to their memorization mistakes. Our system provides a smart recitation that is a practice system that generates unlimited Quran questions with different types for Muslim users. The amazing thing is that it can also provide unlimited tests based on each user's mistakes and track their development and improvement. We believe this will be very helpful for each person's Quran memorization journey.

Chapter 1: Introduction

1.1 statement of the problem:

Muslims require a convenient and comprehensive solution to access and interact with various religious resources, including the Quran, Athkar, prayer times, and Qibla direction, all from one single place. Additionally, individuals engaged in Quran memorization face obstacles in effectively testing their memorization, monitoring their progress, identifying and rectifying frequent mistakes, and tracking their improvement over time. Furthermore, users need a means to track their daily Islamic activities and monitor their achievements.Our project addresses this design challenge by developing a mobile platform and website that provides solutions to all above with adaptive practice and tracking features for each user.

1.2 Objectives of the work:

As Muslims facing similar problems, we aim to make it easy for people to access and interact with Islamic activity resources wherever they are, even without internet access. Our app offers essential features, including assistance for those struggling to memorize the Holy Quran and for others who wish to revise and test themselves. We aim to make their journey easier by providing a way to recite, correct, and even take hints, as well as a practice system based on their mistakes. We also track their progress and reflect their improvements in their mistake tracking. By doing so, we hope to encourage more people to keep memorizing the Quran and provide them with the necessary support to continue. Additionally, our app aims to serve as a platform to connect individuals or associations dedicated to Quran memorization with their students by creating communities.

1.3 Scope of the work:

Our project is for the general public, especially those who speak Arabic, to provide them with a platform to read, recite, and practice the Quran. It includes features such as Athkar, Tasbeeh, prayer times, and Qibla direction. Users can create and backup their own plans, join communities, or create their own communities and then community admins can accept members and manage interaction with them.

Additionally, our focus is on developing an adaptive practice system that targets each user's individual mistakes during Quranic memorization. This personalized approach aims to make memorization easier and more effective.

To summarize, our project's scope is to offer practical tools, enhance daily lives, promote community engagement, and support Quran memorization journeys.

1.4 Importance of the work:

Muslim project will facilitate and support users in their daily life as Muslims with its variety features including some below:

- Access most of the needed resources in Muslims daily life easily with no need of the internet and in a good, comfortable, organized way.
- Allow users to interact with those resources like check the finished prayers to track commitment, different thikr category with each one interactive counter and sound, user friendly rosary like the real one with different types of tasbeeh and each user can add their own type.
- Adaptive Practice: The system offers a unique feature that adapts to each user's mistakes, making the process of Quran memorization easier and more effective and personalized.
- Community interaction: users who could be people who are teaching the Quran to others can join or create communities to interact with others easily.
- Personalized Planning: Users can create and manage their daily activities and track progress, each user can also make backup plans or delete all history plans and start all over again.
- As admin of the Muslim, it allows to track users and communities and control them, it also gives monthly and yearly statistics.

Overall, Muslim application/website meets what Muslim need in daily life, with adaptivity, personalized way, ease of use, convenience and well-organized interaction.

1.5 Organization of the report:

The report has the following organization:

- Chapter 1: An introduction and overview of the project objectives and importance.
- Chapter 2: Constraints, Standards/ Codes and Earlier course work.
- Chapter 3: Literature Review.
- Chapter 4: Methodology including programming languages and tools.

- Chapter 5: Results, Explaining main features of the application and the website.
- Chapter 6: Discussion.
- Chapter 7: Conclusion and Futurework..

Chapter 2: Constraints, Standards/Codes and Earlier course work

2.1 Constraints:

2.1.1 Data Constraint:

1- Some datasets we found aren't in the desired form, so we modify them to our needs. For example, we modify the version of athkar json and for the Quran library, we add functions and changes to the package itself.

2- We faced challenges finding fonts that display the Quran correctly because many fonts display it incorrectly. However, we eventually found a version published by an official Islamic organization which gives Ottomanic writing[1].

2.1.2 Voice Constraint:

1- Initially, we aimed to develop a recitation and memorization system that uses the user's voice with Tajweed correction. This is a precise task that requires a lot of data and work because dealing with the Holy Quran is not like dealing with any other normal text. A simple system will consider a user reading or writing wrong, even if it's the opposite case, because the Arabic language, especially in the Quran, needs to consider the Arabic language's phonetic movements (Harakat) and the rules of Tajweed in the Quran. Moreover, there is a lack of resources for the Arabic language to support what we aimed to do. As a solution (with our previous idea kept as future work), we decided to hide verses and allow users to check themselves with the ability to take multiple hints based on verse length and then press buttons to check and correct themselves in a user-friendly way.

2- Using voice in tests:
For tests that require filling in missing verses from the Quran with different types of missing elements (start of verse, previous verse, etc.), the answer taken from the user would be short and specific to a particular question. Therefore, we decided to use voice for it. We searched for plugins

[1] مجمع الملك فهد لطباعة المصحف الشريف: **https://qurancomplex.gov.sa/**

to support speech-to-text and ended up using the Google speech-to-text plugin. Here are the issues we faced and how we dealt with them:

- The Quran we use in our app is written in the Ottoman way, which is not supported by the plugin. Therefore, we brought another version of the Quran with the normal written way.

- The plugin is weak for Arabic. It converts some letters to others and sometimes considers Harakat as letters. For example, if you say (ۥ), it consider it as (ه), letter (إ ,أ ,آ) to (ا), and if there is (ۦ) at the last letter of a word, it sometimes considers it (ي), and so on. Based on what is mentioned, if the user's speech was correct, the plugin stores it in the wrong way for some letters and compares it to what's written in the Quran, so it may give mistakes for correct answers.

- To solve this, when comparing, we do the comparison after replacing the letters that the plugin may mistake to the form that it accepts so that it now has a higher chance to recognize the right answers.

- This is a solution we found for the given time as we have time limitations but wanted to add features that support voice. In the future, we aim to develop it in a more accurate way.

2.1.3 Time Constraint:

We aimed to add more features and develop the smart recitation that we built, but we were limited by time, especially since it's our first time building an application using Flutter.

2.2 Standards/ Codes:

In our project, we followed several engineering standards and codes to ensure the development of a robust and efficient web and mobile application. Here are the standards and frameworks we utilized:

1. Flutter with GetX Library:

Flutter is an open-source UI toolkit developed by Google, used for building natively compiled applications for mobile, web, and desktop platforms. We utilized Flutter as the primary framework for developing our application. To enhance state management, dependency injection, routing, and other functionalities, we integrated the GetX library, which provides a set of utilities and features in Flutter. This combination allowed us to create a cross-platform application with a consistent user experience across different devices and platforms.

2. Model-View-Controller (MVC) Architecture:

We adopted the MVC architectural pattern to structure our application's codebase. MVC separates the application into three interconnected components:

- Model: Represents the data and business logic of the application.
- View: Handles the presentation layer, including UI components and user interactions.
- Controller: Acts as the intermediary between the model and view, managing data flow and application logic

By implementing MVC, we achieved a modular and organized codebase, making it easier to maintain, extend, and test our application.

3. Node.js RESTful API:

We developed a Restful API using Node.js for our project. Node.js enabled us to create a scalable and efficient backend server. With our custom API, we designed endpoints following REST principles to handle client requests for data retrieval, creation, updating, and deletion. By leveraging Node.js, we ensured seamless communication and integration between the frontend and backend, providing a reliable foundation for our web and mobile application.

4. Sequelize as the Database ORM:

For streamlined interaction with the database, we employed Sequelize as our chosen Object-Relational Mapping (ORM) tool. Sequelize simplifies the process of database operations by providing an abstraction layer. With Sequelize, we defined models, executed queries, managed relationships, and seamlessly integrated our Node.js RESTful API with the database. This approach abstracted the complexities of working directly with the database and facilitated efficient data management, storage, and retrieval.

By utilizing Sequelize as our ORM tool, we ensured a smooth and optimized interaction between our backend API and the database. This allowed for efficient handling of data and retrieval of information as needed for our web and mobile application.

5. Agile

We followed an Agile development approach, dividing our project into sprints to work on specific features within about two-week iterations. Weekly meetings with our supervisor provided progress updates and allowed for guidance. We also involved random individuals to test and provide feedback on completed features. This iterative process ensured adaptability, collaboration, and efficient development of our application.

By adhering to industry standards, utilizing cutting-edge frameworks and tools, and seamlessly integrating our custom backend API with the frontend, we ensured the development of a reliable, scalable, and efficient web and mobile application.

2.3 Earlier coursework:

As computer engineering students, our previous coursework in university has greatly influenced our project. Through subjects like Object-Oriented Programming (OOP), Database Management Systems, Software Engineering, distributed operating systems and Advanced Database Systems, we acquired valuable knowledge that we effectively applied. Our understanding of OOP and the Model-View-Controller (MVC) architectural pattern allowed us to design a modular and reusable codebase. We separated the application logic, data, and presentation layers, resulting in a more organized and maintainable codebase.
In addition to our coursework, we extensively studied various applications related to our project. This comprehensive study provided us with insights into best practices, user expectations, and the most needed features for Muslims Applications. By incorporating elements commonly found in similar applications, and developing new features we ensured a user-friendly and intuitive interface with features that covers some of what users really need.
Furthermore, through self-learning and exploration, we acquired expertise in using Flutter and Node.js to develop the web and mobile applications. Leveraging online tutorials and documentation, we gained proficiency in utilizing these frameworks and effectively integrating the frontend and backend components.

By combining our university coursework, self-learning, and in-depth study of related applications, we successfully completed the project. This demonstrates our ability to apply knowledge effectively in practical scenarios as computer engineering students.

Chapter 3: Literature Review

With the widespread of Muslims all over the word and the increasing use of smartphones and mobile applications which has an effect on different aspects of people's daily lives and activities in which religious practices are also included. Mobile apps targeted towards Muslims have gained significant popularity. “When asked in a survey about the reason for the frequent use of Islamic apps, many Muslims answered that they find it more feasible and it also enables them to a14cquire Islamic information faster than any other source. (Kittler & Mitchell, 2015). The main reason for developing such apps is to provide an ease to Muslims who lead a busy life. Therefore, despite being anywhere these Islamic apps enable them to

practice Islam in a more feasible manner." *(Hameed, Ahmed, & Bawany, 2019, p.2).* This shows the role that Islamic apps play in Muslims daily lives.
In terms of features, Hameed, Ahmed, and Bawany (2019) categorized Islamic apps into five common categories: Quran, Qibla/Prayer time, Hadith, zakat, and Supplications (Dua and Zikr). These features are commonly found in many Islamic apps. Additionally, some apps offer unique features that set them apart. Below, we will mention the most featured and unique apps that we found and talk about. We present this list as a sample to showcase how we conducted thorough research on available apps and see what commonly needed features, as well as highlight the features that are lacking in current applications.

1. Muslim Pro

One prominent example of apps that have the common features is Muslim pro *("Muslim Pro," 2023),* it's an app used by around 100 million.

Advantages:

1. Comprehensive Features: Muslim Pro offers a wide range of features that cater to the daily needs of Muslims, including accurate prayer times with notifications, qibla direction, tasbeeh (prayer beads), athkar (supplications), and information about nearby mosques.
2. Quranic Features: The app provides various Quranic features such as listening to the Quran, tajweed (rules of Quranic recitation) in written form, and interactive actions that can be performed on each verse.
3. Articles and cards of greetings.

Disadvantages or Missing Features:

1. Advertisement Overload: One major drawback of the app is the presence of numerous advertisements, which can be intrusive and hinder the user experience.
2. Lack of Quran Tafsir: The app does not include a Quran tafsir (exegesis) feature, which could provide users with deeper insights and interpretations of the Quranic verses.
3. No Recitation and Memorization Tools: Muslim Pro lacks specific features related to recitation and memorization of the Quran or testing one's knowledge.
4. Limited Daily Tracking: While the app allows tracking of prayers and fasting, it lacks the ability to create personalized plans for other aspects of daily practices.

2. Quran Majeed (قرآن مجيد – أذان والقبلة) *("Quran Majeed," 2023)*

Advantages:

1. Included most features like in muslim pro.
2. Learning quran feature that depend in hiding verse

Disadvantages or Missing Features:

1. hiding and showing verses depend on where you touch the screen, touching it at a certain place will show all verses before it, so it's not recitation verse by verse.
2. There are no tests based on mistakes and what you learn.

3. اختبر حفظك في القرآن الكريم *("اختبر حفظك في القرآن الكريم" 2023)*

Advantages:

1. assists Quran students in reviewing and reinforcing their knowledge by providing organized multiple-choice questions specifically focused on the endings of verses. Users can test their memorization of the endings and conveniently access their test results at any time.

Disadvantages or Missing Features:

1. Tests have fixed prepared questions for each juz and you can't test yourself with a specific page.
2. Having only one type of questions, which is the end of verses.

4. Quran Memorization Test *("Quran Memorization Test," 2023)*

Advantages:

1. Specific Surah Testing: you can select a particular Surah of the Quran and start a multiple-choice test. The app allows for testing specific Surahs using both written and the ability to record yourself and then manually evaluate answers.
2. Easy Verse Range Selection: Easily specify a range of verses to test your memorization.
3. Track users progress and review the details of previous test results, including incorrect answers. Users can mark verses that require further attention and track their correction percentage.

Missings Features:

1. Doesn't include all other features required by a Muslim daily.
2. Doesn't automatically recognize your mistake list and prepare questions based on it, you need to till which verse to focus on the test on manually.

What Our Application (Muslim) add:

- recitation in a very user-friendly way in which you recite verse by verse while some other apps that have this feature, when clicking on a certain place of page it shows all

previous verses before it and other apps make it in a not user-friendly way by just putting some containers with colors above verse to hide them.

- Included most of the features needed for Muslims in their days.

- Personalized plans in which you can choose from multiple of many things and change the plan as you want while other apps give you static plans for every day, some others allow you to access plans for tomorrow and check it, so we avoided that.

- Build the smart recitation with unlimited questions and different types of questions, with the ability to provide audio testing, and can have tests that recognize your old mistakes that you made during recitation and practice on them which will reflect on your mistake list and update it based on your improvement so that answering questions related to your previous mistake correctly multiple times will hide it from the mistake list.

- The ability to create and join communities and interact with others.

Chapter 4: Methodology

In the development of the Muslim Application, it is crucial to provide sufficient detail about the materials and methods employed to ensure reproducibility and comparability of the results. This chapter outlines the experimental methods used in the development process.

4.1 Programming Languages and Frameworks:

- Fronted Development:

We utilized the Dart programming language, for the frontend development of the Muslim Application. Dart is an object-oriented language developed by Google and specifically designed for building cross-platform applications using the Flutter framework.
We leveraged the Flutter framework, an open-source UI toolkit developed by Google, to build the frontend of the Muslim Application. Flutter provided a comprehensive set of tools and libraries for building cross-platform applications using a single codebase.

- Backend Development:

The backend development of the Muslim Application was accomplished using Node.jsز Node.js, built on Chrome's V8 JavaScript engine, served as a powerful and efficient runtime environment for executing server-side JavaScript code.

- Database Management:

For efficient database management, we chose MySQL as the relational database management system. We employed Sequelize, an Object-Relational Mapping (ORM) library for Node.js, to facilitate the interaction with the MySQL database. Sequelize offered a simplified approach to database operations, including defining models, managing relationships, and executing queries.

- RESTful API

To establish communication between the frontend and backend systems, we implemented a RESTful API architecture. This standard method allowed for seamless data transmission and effective interaction between different components of the application. Relevant literature and industry best practices were consulted to ensure adherence to RESTful API principles.

By utilizing the Dart programming language, Flutter framework, Node.js runtime environment, MySQL database management system, and Sequelize library, we ensured the efficient and effective development of the Muslim Application.

4.2 Tools:

The development of the Muslim Application primarily relied on standard software and tools widely available in the development community. Therefore, the equipment and tools used in the project included:

- Visual Studio code.
- Android Studio.
- Xampp server.
- PhpMyAdmin.
- Postman.
- Github.
- websites for the UI like (colorhunt, flaction, figma, Svg repo).
- ChatGPT (GPT-3.5).
- Json tools like (json to dart converter, json editor).
- Notion.

Chapter 5 Results and Discussion:

5.1 Muslim as Mobile Application:

5.1.1 Splash screen

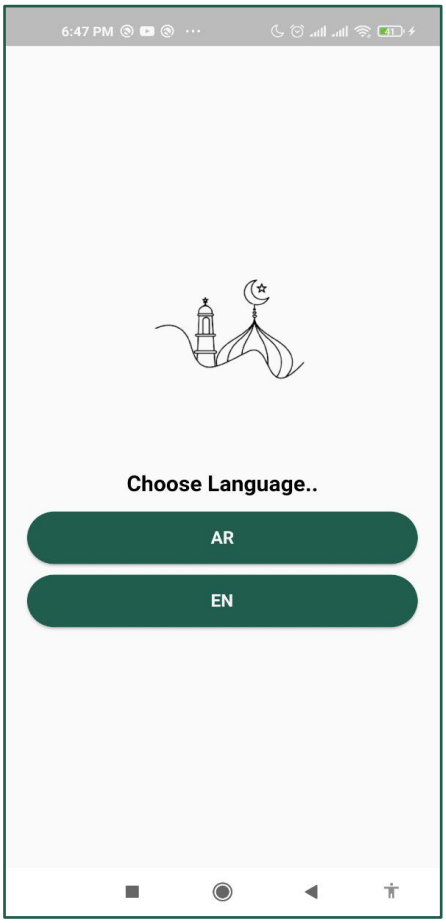
The splash screen is the welcoming screen that appears when the user opens the app. It starts loading and then redirects the user to the language selection page, where he can choose between Arabic and English if no selection has been made before. If the user has already selected a language, it will take him directly to the sign-in page.

5.1.2 Language Screen

From this screen users can choose if they want the app to be Arabic or English, note the screen written language is based on user device language.

Figure 3.a shows this screen on a device that uses Arabic language, while Figure 3.b shows the same screen on a device that uses English language.

(a)Arabic device

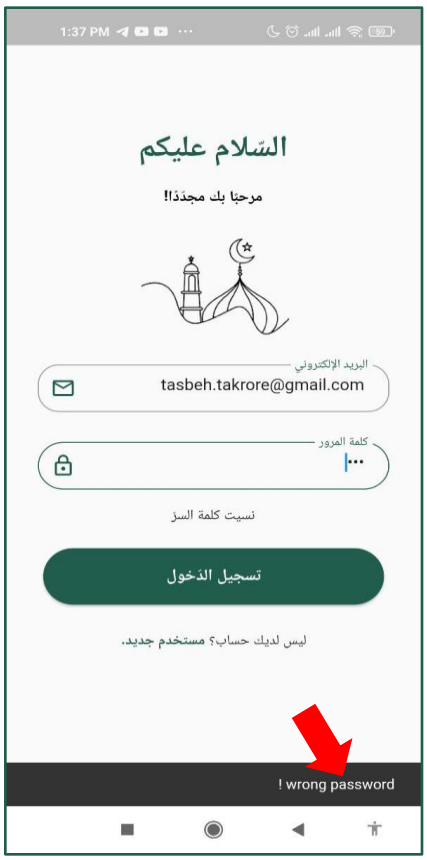


(b) English device

5.1.3 Log in

In order to log in to the application, the user has to enter a valid Email address and password, if he doesn't have an account, the user has to move to sign up, if he has an account and forget its password, the user should click on forgot password.

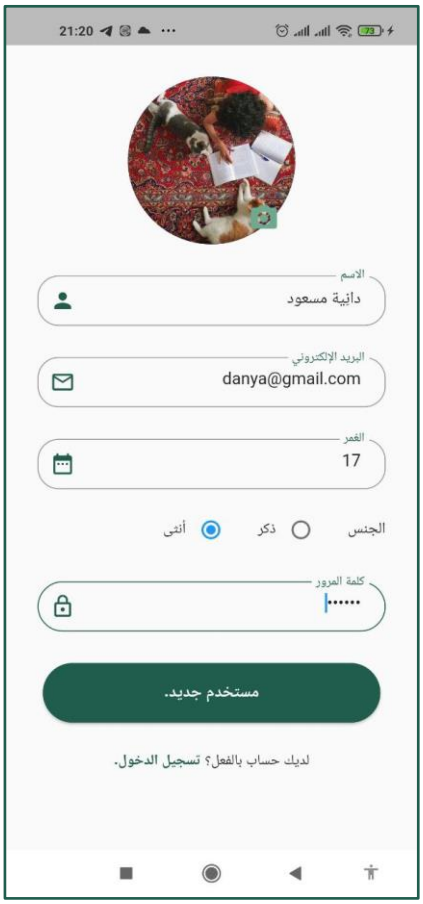
(a) Login



(b) Login with wrong password

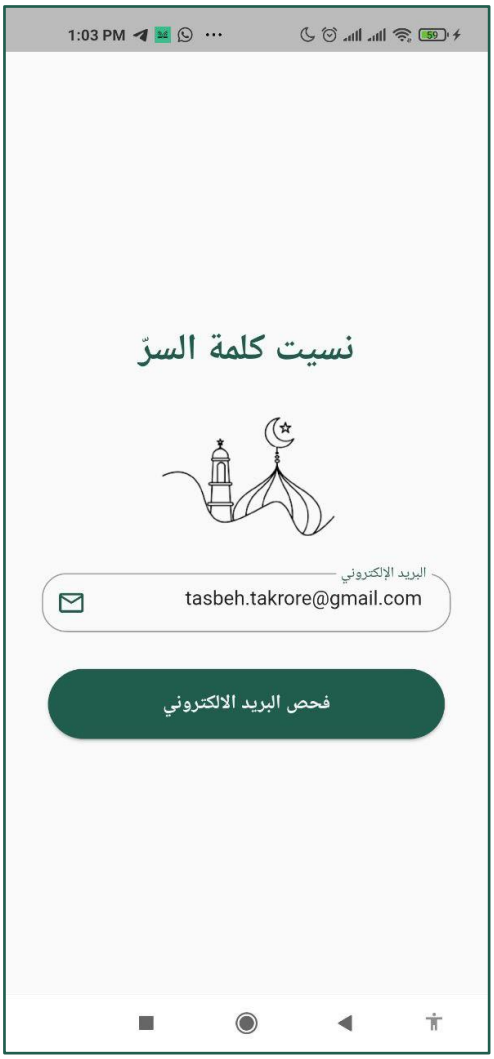
5.1.4 Sign up

if user don't have an account, he can create one from the sign-up page, user has to inter his/her name, a valid email address, age, gender and password in order to be able to create new account. Also, a profile picture could be chosen from the camera, gallery or a default profile picture will be given.
the user then can log in using this information.

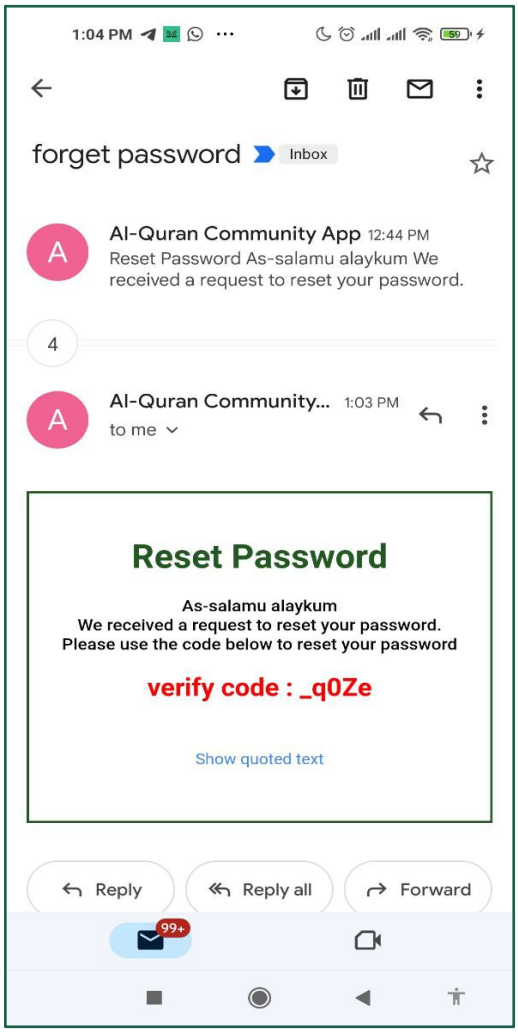


5.1.5 Forgot Password

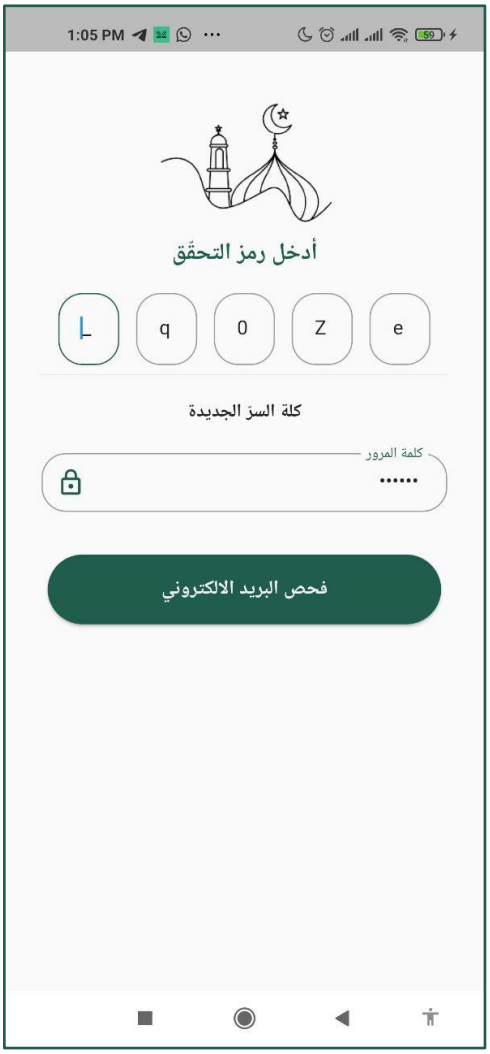
if the user forgot the password, it can be reset using the signed email. User has to inter the signed-up email, and click check email, if the application found such user, an email with verify code will be send, user then has to enter the verify code and the new password. If the verify code match the one from the email, password will be changed successfully.



(a) Check email



(b) verify code email



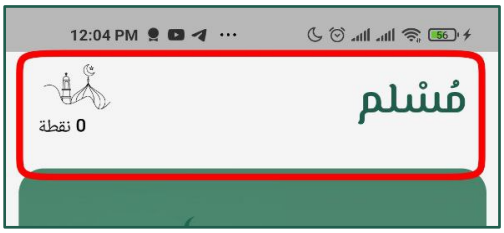
(c) check verify code

5.1.6 Home Screen

This is the screen that will be shown to the user after signing in, below you can see it and we will explain it part by part.

5.1.6.1 Home Screen Top Navbar

This is the nav that appears at the top, it has two main elements: the Logo of the app in the right side, and a number of points in the left. Points are different for each user. Each one can earn points by using the smart (trainer) that will be explained later.



5.1.6.2 Home Screen Daily verse Card

This is a card that shows a different verse(ayah) randomly when user login to the application. When clicking on the verse, its interpretation is displayed, and the interpretation can also be copied.

5.1.6.3 Home Screen features Categories

This shows a horizontal slider that displays the features that Muslims need in their daily lives. These features include trainer, recitation, Quran, qibla, tasbeeh, praying times and athkar. Each of these features will be explained later in detail.

5.1.6.4 Home Screen Communities

This section shows the communities that each user has created and joined. As a new user, you have not created any communities or joined any yet, so this section will be empty. However, you will see a clickable card that allows you to join a new community.

5.1.6.5 Home Screen Statistics

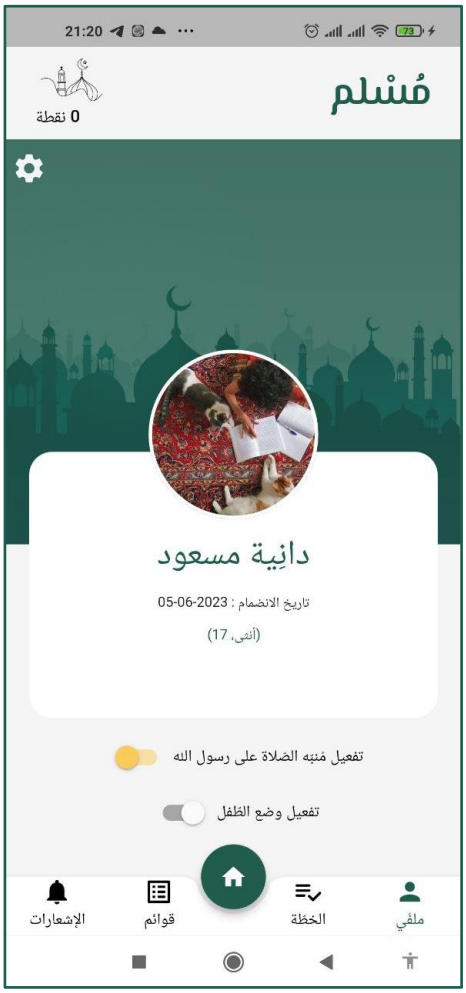
This chart tracks the user's weekly achievements based on their current plan. In the application, users have the ability to create plans, which will be explained in detail later in the report. The chart displays the days of the week, starting from Saturday, and shows the user's progress towards their plan for each day. Each day's column represents the amount the user has achieved from their plan. By clicking on any of the day columns, a card will appear showing the number of tasks the user has scheduled for that day and how much they have achieved so far.

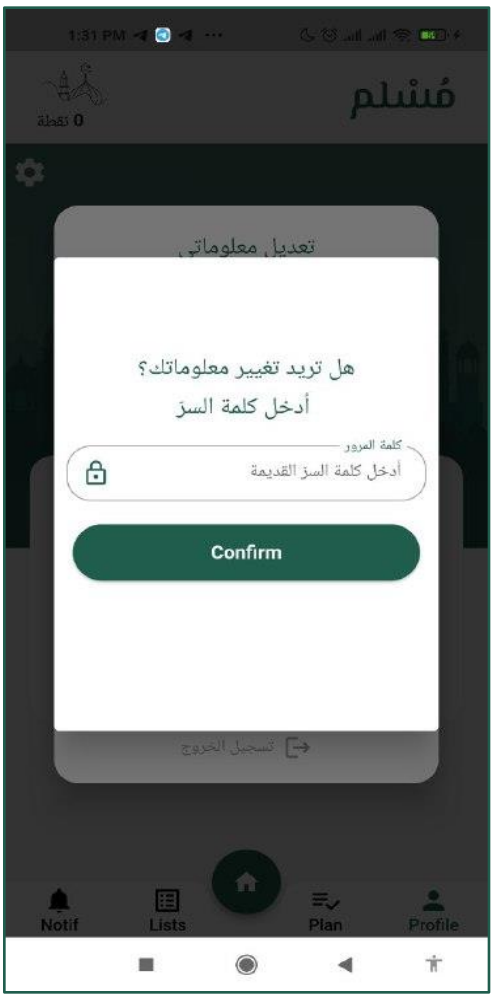
5.1.6.6 Home Screen bottom tab navigation

This tab navigation bar allows users to switch between different screens, including the home screen, Profile screen, Lists screen, Plans screen and notifications.

5.1.7 Profile page

The profile page, accessible through the bottom tab navigation, displays the user's profile image and relevant information such as their name, joined date, gender, and age. Upon clicking the settings icon, the user's information is presented in editable text fields, allowing them to update their registered details if desired. If the user chooses to update their information, they will be prompted to enter their current password for validation. If the password is correct, the changes will be successfully updated; otherwise, no modifications will occur. Additionally, the profile page includes a log out button for the user to sign out of the application



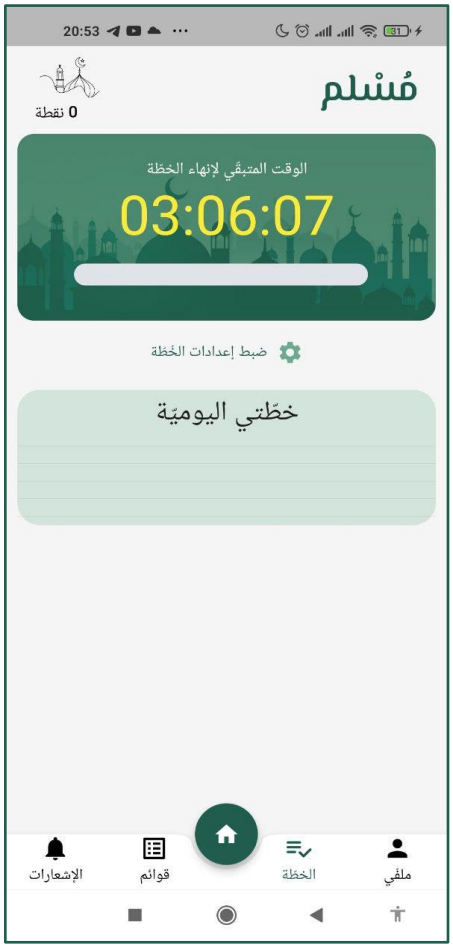


From profile screen, users can activate **notifications** for prayers on the prophets Muhammed, peace be upon him, this will result in them receiving a notification every hour reminding them of this, even if the application is closed.

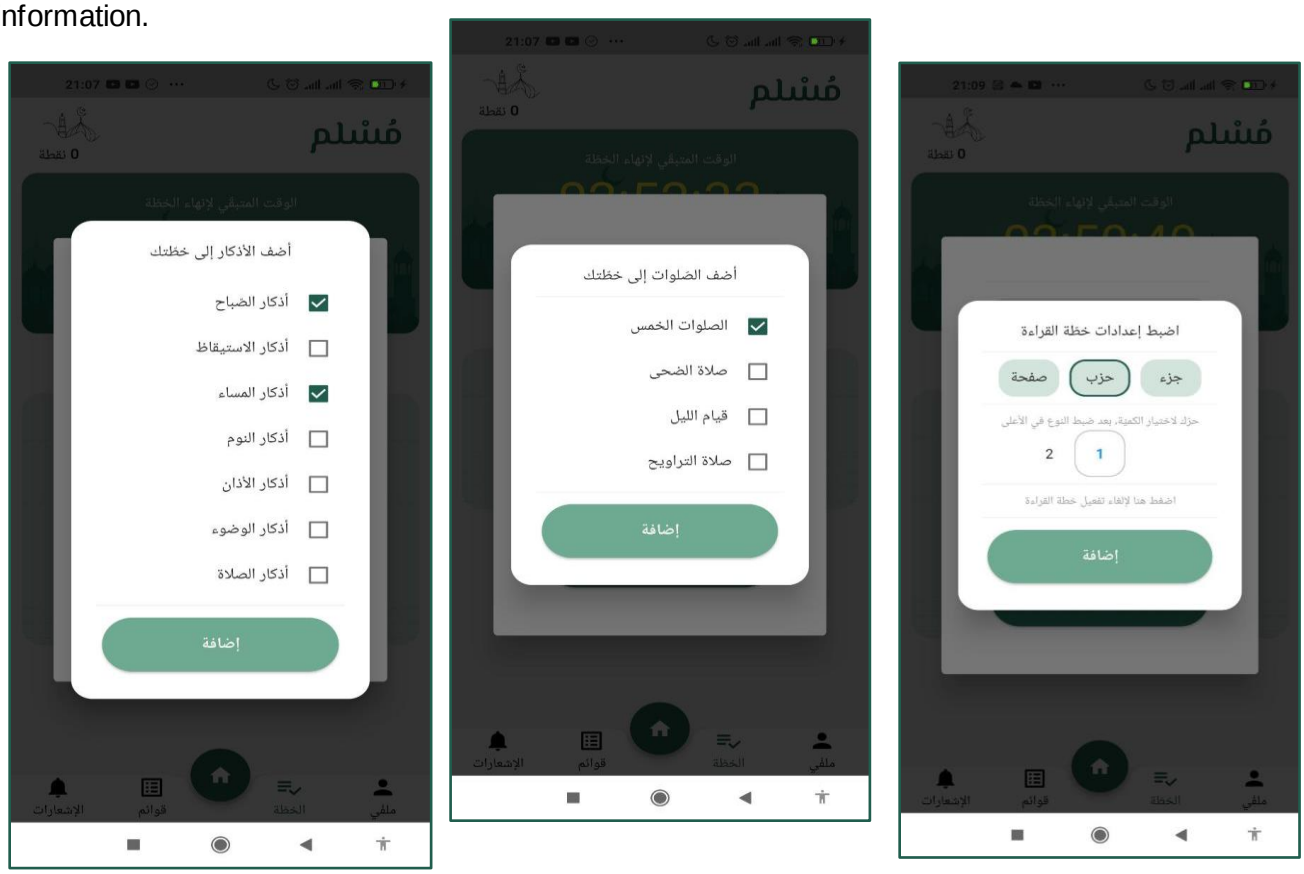
Also, users can activate the **child mode** from profile screen, and it will be explained later in the report.

5.1.8 Plan Screen

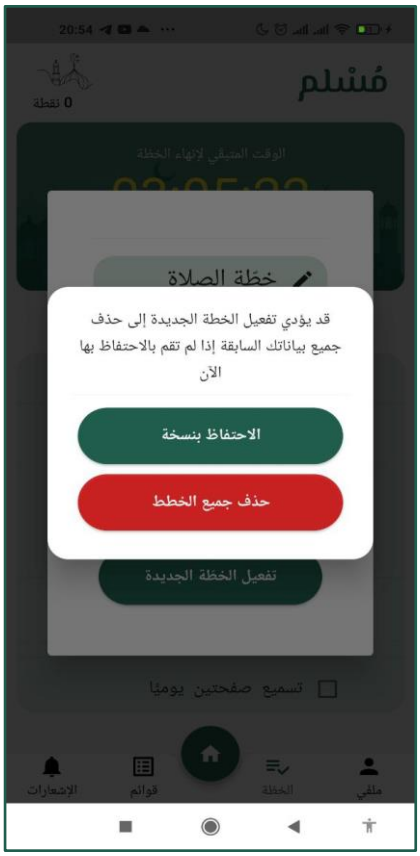
In the Plan screen, users have the ability to create their own plan using a pre-prepared list of common daily Muslim activities. The screen displays a countdown counter indicating the remaining time to finish the daily plan, as well as the selected daily tasks. When the user opens the Plan screen for the first time, the plan is initially empty. To set up the plan, users can click on the Plan Setting option, which will open a dialog box. Within the dialog box, users can choose and set tasks for their plan. For more detailed information and visual references, please refer to the pictures below

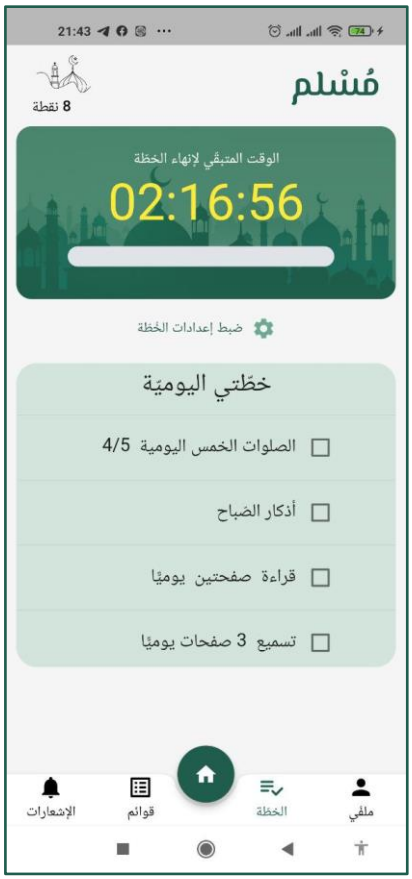


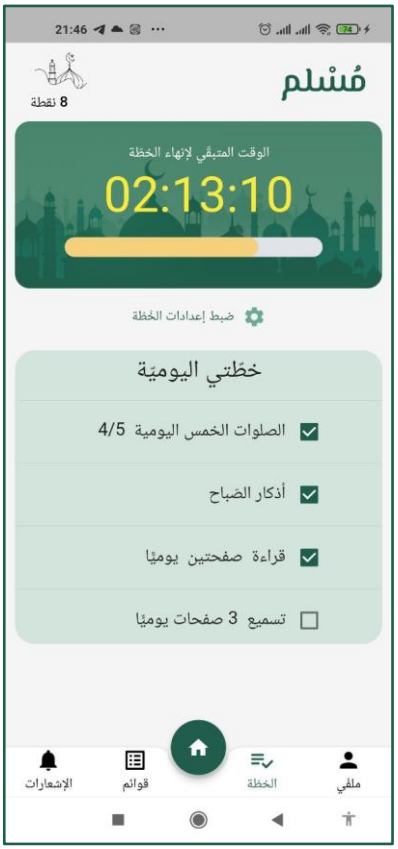
Notice Each plan type in the Plan screen has an edit icon next to it. Clicking the edit icon opens a dialog where users can customize their plan. For prayers, users can choose from options like the five daily prayers, qiyam, and Duha. The Athkar category offers eight types of Athkar to track. In Quran reading, users can select a specific portion such as a juz, hizb, or individual pages. Refer to the figures below for more information.



After selecting the desired plan, the user can click on "Activate New Plan," which will prompt a dialog box. The dialog box will present two options: deleting all previous plans or backing them up and adding the new plan as a fresh one. This functionality is particularly useful when a user wishes to replace their existing plan with a new one. Once the user confirms their selection, the chosen plan tasks will be promptly updated and displayed on the screen, allowing the user to track their progress. Additionally, a linear indicator will be affected and adjusted accordingly with each update.



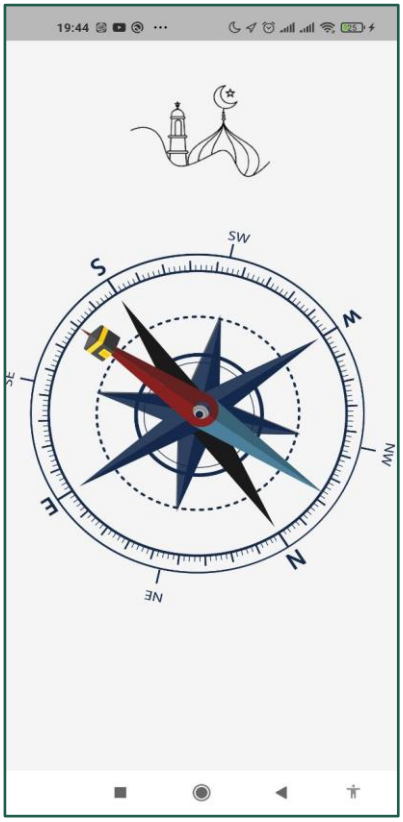




When finishing the plan successfully, celebration will be shown to the user. Furthermore, For the current plan, the user can view the weekly chart that was mentioned in previous pages in the home screen. Also, this chart will directly show what the user finished today by clicking the refresh icon.

5.1.9 Qibla direction

The Qibla screen initially takes the user's current location and then incorporates a sensor-based Qibla feature that dynamically rotates the interface in real-time to align with the precise direction of the Qibla. This convenient and accurate feature eliminates the need for manual calculations and provides users with a seamless way to determine the Qibla direction.



5.1.10 praying times Screen

This screen takes user permission to get access to location, then after getting the permission it shows the 5 praying times based on the location and updated daily. It displays the five prayers names and times with a check box next each one to mark this pray as done, note that you can't mark it has done if the pray time didn't come yet. On the top card it shows the Gregorian and Hijri date, current location, the next coming prayer and a counter that shows the remaining time for the next pray. There is also a track icon that till you how much prayer finished, missed or even remain.

5.1.11 Tasbeeh Screen

Tasbeeh screen shows a Rosary that we design from zero using flutter and a list of tasbeeh types, user can select any type from the list and start clicking the rosary beads so beads start moving and the counter for the chosen type will increment by one with each click,Choosing another type will start independent counter and so on. On the other hand, if a user wants to add a new custom type in addition to the types in the list, he can click on add new type and enter its name, then start using the rosary for this type. Besides,The Rosary has multiple colors that users can choose between, it also makes a sound when moving the beads.

5.1.12 Athkar Screen

This shows eight categories of athkar that could be viewed without the need to access the internet.When clicking on any category, the athkar taken from Hisnul Muslim related to the selected category will be shown and users can interact with them.

when clicking on a category, it will show list of cards having the thikrs related to the chosen category, each card has a voice icon to listen to this thikr, a counter that shows how many time you have to repeat this thikr, users can interact with each counter for different types and click to decrease it till reaching zero which mean the user finish this thikr.If the user want to start again, the refresh icon could be pressed.


الذكر قبل الوضوء :(بِسْمِ اللَّهِ).
1
الذكر بعد الوضوء :(أَشْهَدُ أَنْ لاَ إِلَهَ إِلاَّ اللَّهُ وَحْدَهُ لاَ شَرِيكَ لَهُ وَأَشْهَدُ أَنَّ مُحَمَّداً عَبْدُهُ وَرَسُولُهُ..)
3
(اللَّهُمَّ اجْعَلْنِي مِنَ التَّوَّابِينَ وَاجْعَلْنِي مِنَ الْمُتَطَهِّرِينَ)
1

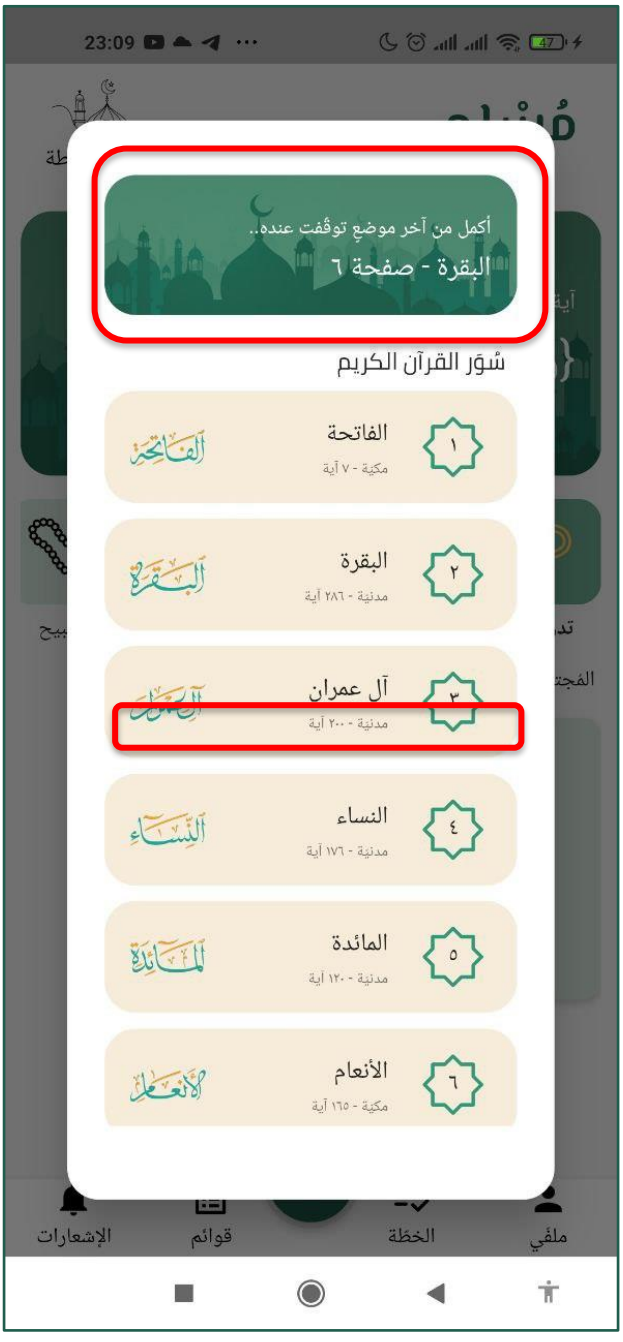

الذكر قبل الوضوء :(بِسْمِ اللَّهِ).
1
الذكر بعد الوضوء :(أَشْهَدُ أَنْ لاَ إِلَهَ إِلاَّ اللَّهُ وَحْدَهُ لاَ شَرِيكَ لَهُ وَأَشْهَدُ أَنَّ مُحَمَّداً عَبْدُهُ وَرَسُولُهُ..)
3
(اللَّهُمَّ اجْعَلْنِي مِنَ التَّوَّابِينَ وَاجْعَلْنِي مِنَ الْمُتَطَهِّرِينَ)
1


﴿ٱللَّهُ لَآ إِلَٰهَ إِلَّا هُوَ ٱلۡحَيُّ ٱلۡقَيُّومُۚ لَا تَأۡخُذُهُۥ سِنَةٞ وَلَا نَوۡمٞۚ لَّهُۥ مَا فِي ٱلسَّمَٰوَٰتِ وَمَا فِي ٱلۡأَرۡضِۗ مَن ذَا ٱلَّذِي يَشۡفَعُ عِندَهُۥٓ إِلَّا بِإِذۡنِهِۦۚ يَعۡلَمُ مَا بَيۡنَ أَيۡدِيهِمۡ وَمَا خَلۡفَهُمۡۖ وَلَا يُحِيطُونَ بِشَيۡءٖ مِّنۡ عِلۡمِهِۦٓ إِلَّا بِمَا شَآءَۚ وَسِعَ كُرۡسِيُّهُ ٱلسَّمَٰوَٰتِ وَٱلۡأَرۡضَۖ وَلَا يَـُٔودُهُۥ حِفۡظُهُمَاۚ وَهُوَ ٱلۡعَلِيُّ ٱلۡعَظِيمُ ٢٥٥﴾
[البقرة:255]
0
بسم الله الرحمن الرحيم{ قُلْ هُوَ اللَّهُ أَحَدٌ *اللَّهُ الصَّمَدُ *لَمْ يَلِدْ وَلَمْ يُولَدْ *لَمْ يَكُن لَّهُ كُفُواً أَحَدٌ }بسم الله الرحمن الرحيم{ قُلْ أَعُوذُ بِرَبِّ الْفَلَقِ *مِن شَرِّ مَا خَلَقَ *وَمِن شَرِّ


﴿ٱللَّهُ لَآ إِلَٰهَ إِلَّا هُوَ ٱلۡحَيُّ ٱلۡقَيُّومُۚ لَا تَأۡخُذُهُۥ سِنَةٞ وَلَا نَوۡمٞۚ لَّهُۥ مَا فِي ٱلسَّمَٰوَٰتِ وَمَا فِي ٱلۡأَرۡضِۗ مَن ذَا ٱلَّذِي يَشۡفَعُ عِندَهُۥٓ إِلَّا بِإِذۡنِهِۦۚ يَعۡلَمُ مَا بَيۡنَ أَيۡدِيهِمۡ وَمَا خَلۡفَهُمۡۖ وَلَا يُحِيطُونَ بِشَيۡءٖ مِّنۡ عِلۡمِهِۦٓ إِلَّا بِمَا شَآءَۚ وَسِعَ كُرۡسِيُّهُ ٱلسَّمَٰوَٰتِ وَٱلۡأَرۡضَۖ وَلَا يَـُٔودُهُۥ حِفۡظُهُمَاۚ وَهُوَ ٱلۡعَلِيُّ ٱلۡعَظِيمُ ٢٥٥﴾
[البقرة:255]
1
بسم الله الرحمن الرحيم{ قُلْ هُوَ اللَّهُ أَحَدٌ *اللَّهُ الصَّمَدُ *لَمْ يَلِدْ وَلَمْ يُولَدْ *لَمْ يَكُن لَّهُ كُفُواً أَحَدٌ }بسم الله الرحمن الرحيم{ قُلْ أَعُوذُ بِرَبِّ الْفَلَقِ *مِن شَرِّ مَا خَلَقَ *وَمِن شَرِّ

5.1.13 Quran Screen

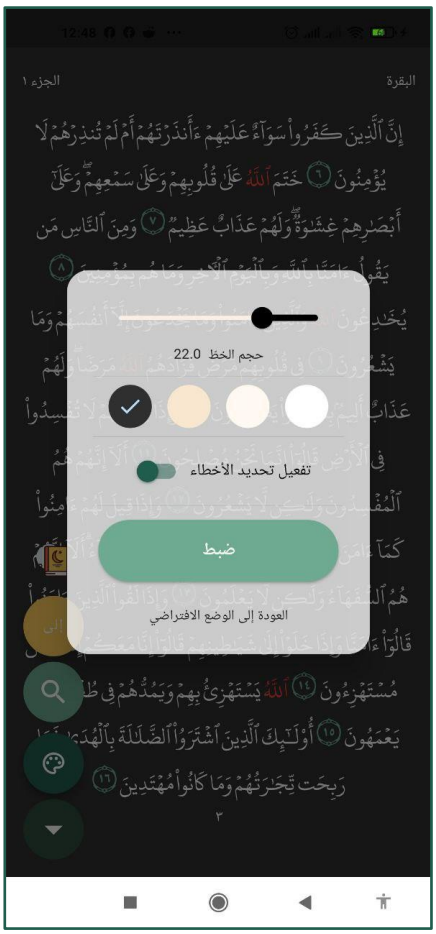
When clicking on the Quran screen Icon from the home page, A dialog will be shown. This dialog shows a scrollable list of all Quran surahs ordered as in the holy Quran and the number of verses for each surah. The dialog also shows a card at the top. This card initially references nothing, then for each time a user enters the Quran to read and then leave the Quran page, the card will store and show the last page that the user was opening before leaving the Quran pages so that the user can easily reach to the last opened page and continue from it.



When choosing any surah name, it will direct the user to that surah and the user can move between Quran pages as they want.

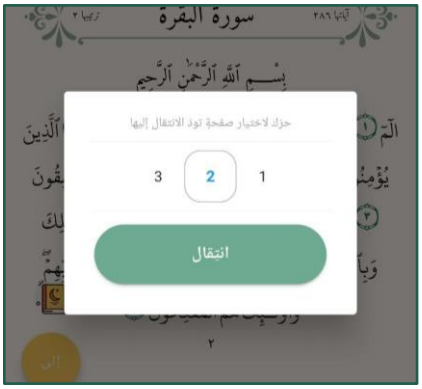
From (1) users can control the font size of the Quran which will help those who have vision problems, the background color could be also changed from list of colors to whatever suits and comforts the user, they can also reset all changes to the default again.

:



From (2) The user can search in the Holy Quran, and all the verses related to the user's search will be fetched and shown. By clicking on any of these verses, the user will be taken to the page where that verse is located.

From (3) A dialog contains a slider showing the page numbers of the entire Holy Quran will be shown. The user can drag the slider to the right or left and click on the page they want to navigate to.



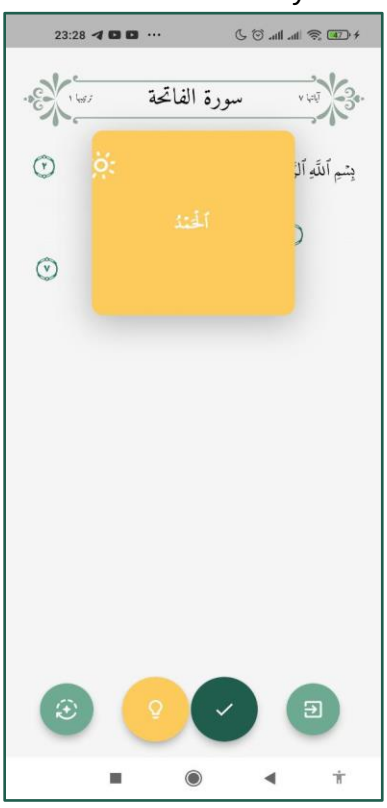
5.1.14 Recitation Screen

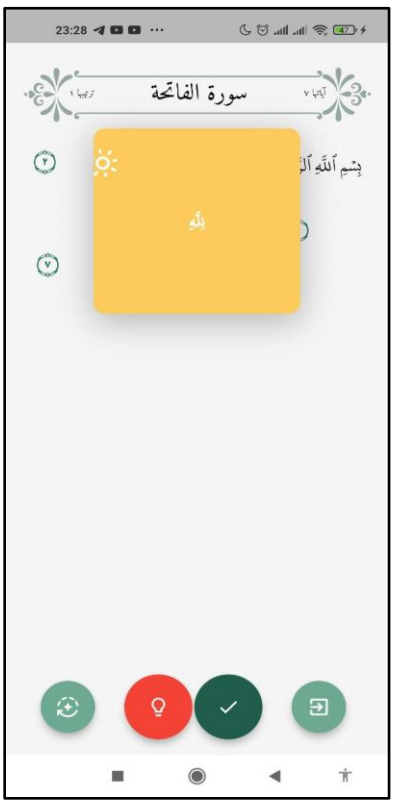
This is the screen where users can check their Quran memorization, when clicking on recitation icon from the home screen, it shows a dialog to choose which surah to recite as shown here:

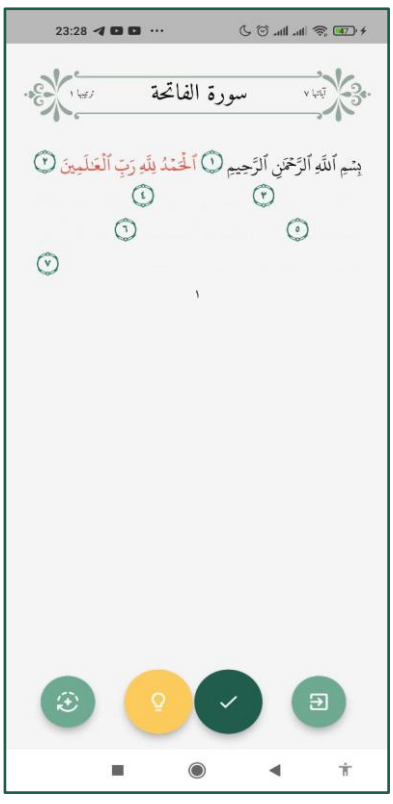
then it opens the Quran from the chosen surah with some kind of verses hiding

note that there are four floating buttons at the bottom, here is how this work:
The button that has the check sign means you get the verse **correctly**, while the button with the lamp means gives me a **hint.** For hints, if the verse is shorter than three words, you can get only one hint, otherwise you can get two hints. When the user took the maximum number of hints, the lamp will be turn to red, and so the user now has the choice to click it again which will consider the answer as wrong, or click the check which will consider the answer right but it will store that the user took hints for this verse.

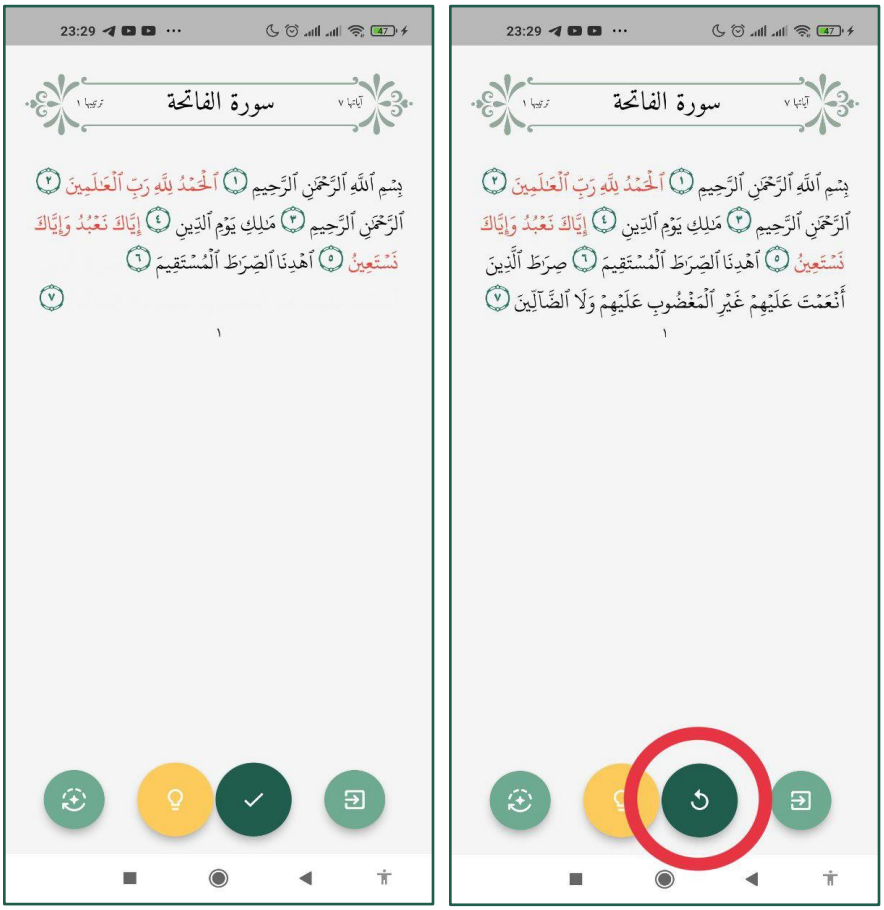
clicking the correct button will show the verse in black color, while clicking the red lamp shows the verses in red color.
note: when you first click the buttons all verses will be totally hidden.
the given figures here show having two hints then select wrong answer, note the black colors verses that means users already click the correct button for them.







when finishing the recitation of a page, user can either continue from another page or repeat the same page.



What happens when the user takes a hint or gets the verse wrong?

This will store to each user his own mistakes with different weights according to its hint or complete mistake, so that each user can see own mistakes from the list page, and train on them using the trainer that will be explained later.

If the most right floating button has been pressed this will end the recitation session and show the user statistics about this session including the session duration, number of mistakes and number of hints related to the number of recited verses.

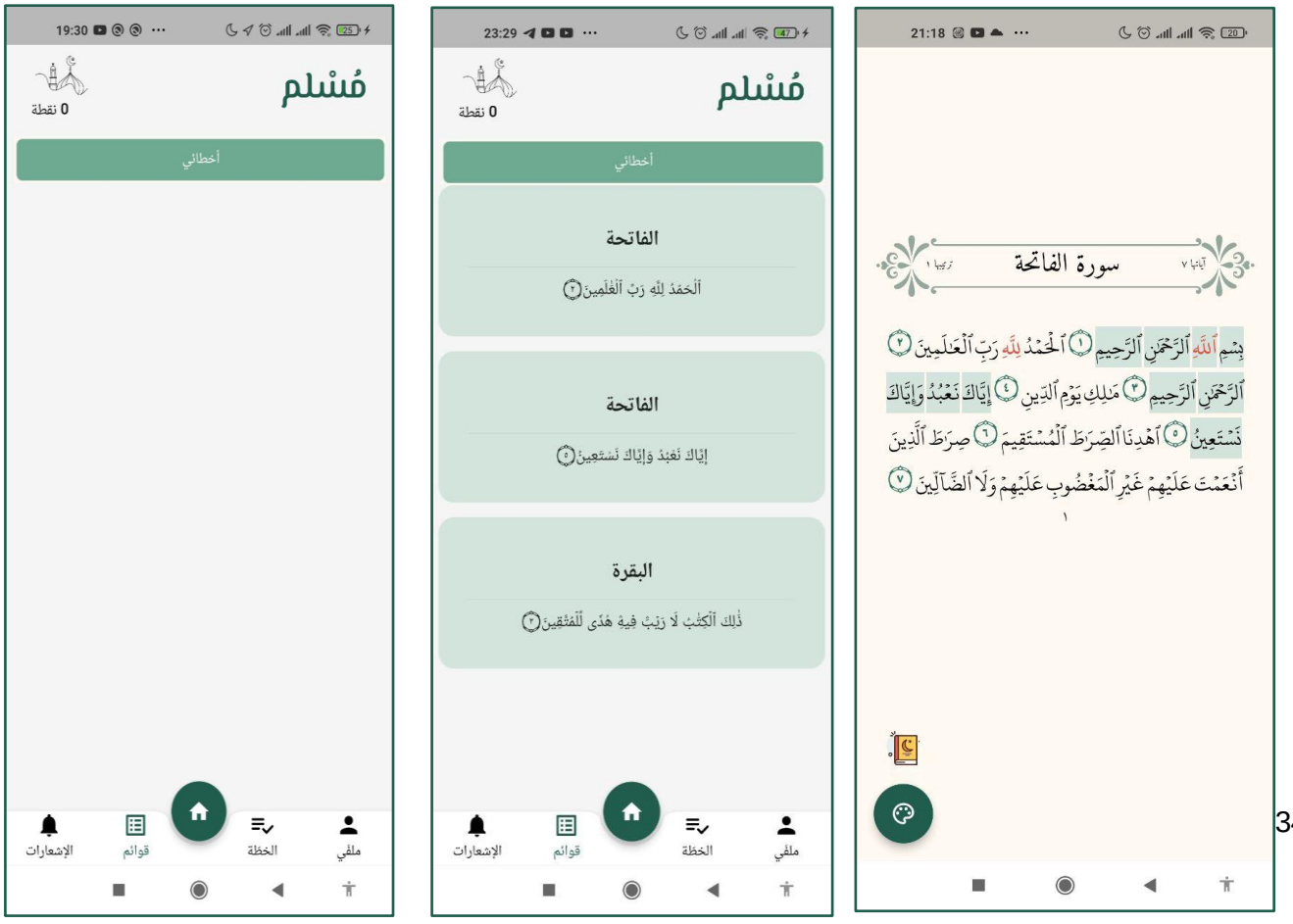
the statistic board also can take the user to his mistake list which contain all new and old mistakes, this page will be explain later on.

Recitation auto mode.

There is another mode of recitation which is the auto mode. To enter it, the user had just to click the most lift floating button from the bottom buttons which will give the user the choice to choose between two speeds (normal speed(x1) or double speed(x2). After choosing the speed, the same logic of hidden verses will show but this time, the verses will appear automatically after certain time, long verse will take long time period to be shown. User can still correct, take hints or mistake himself, but with this mode if user doesn't click any of buttons during the time of the verse, it will consider the related verse as wrong answer. There is also a linear indicator to show how much time remains for the verse to appear.

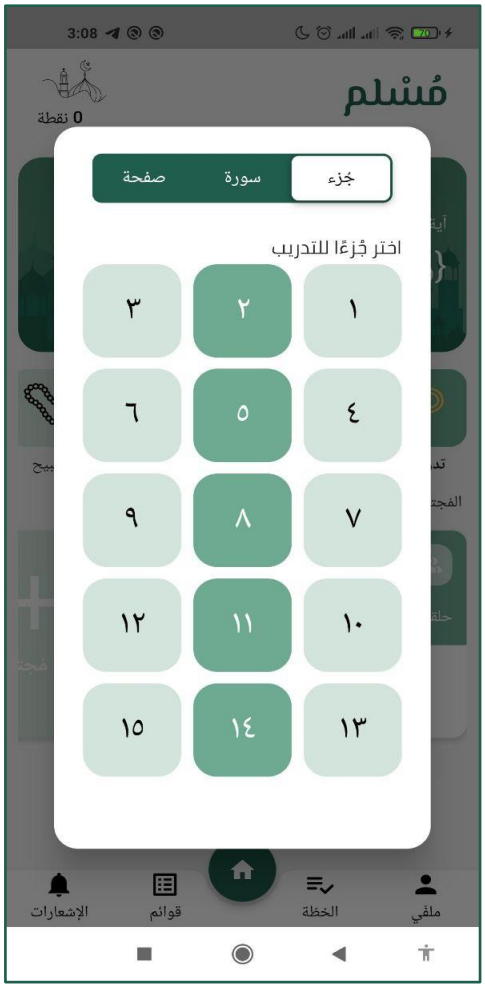
5.1.15 Lists Screen

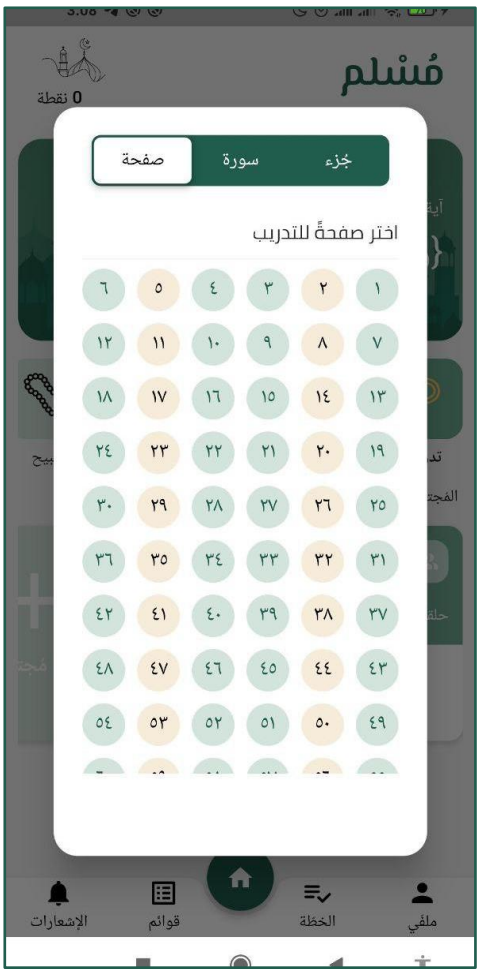
The lists screen shows the mistakes list that user made during recitation, and updates when users train on mistakes using the trainer. For each mistake, it shows Surah name, and the verse that mistake happened on it. Quran page will also show your mistakes



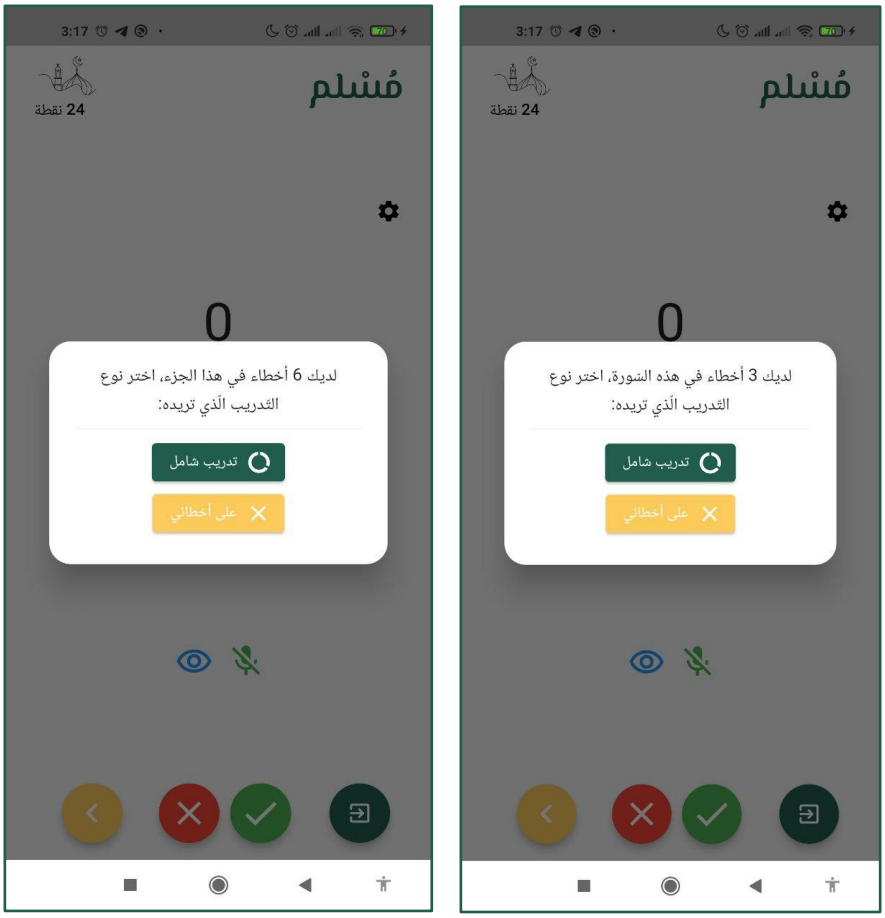
Trainer is the feature that will give users unlimited different types of questions and will train them on their own mistakes.

Trainer is accessible from the home screen, when the user clicks the trainer icon, a dialog will be open to choose what the user want to train on, there is a choice to navigate between three main choices (specific juz,specific surah or specific page).





After choosing what to train on, another dialog will be shown to give the user a choice to have a general train or to train on his own mistake. Additionally, the dialog will show how many mistakes the user has made before for the part that he chose to train on.

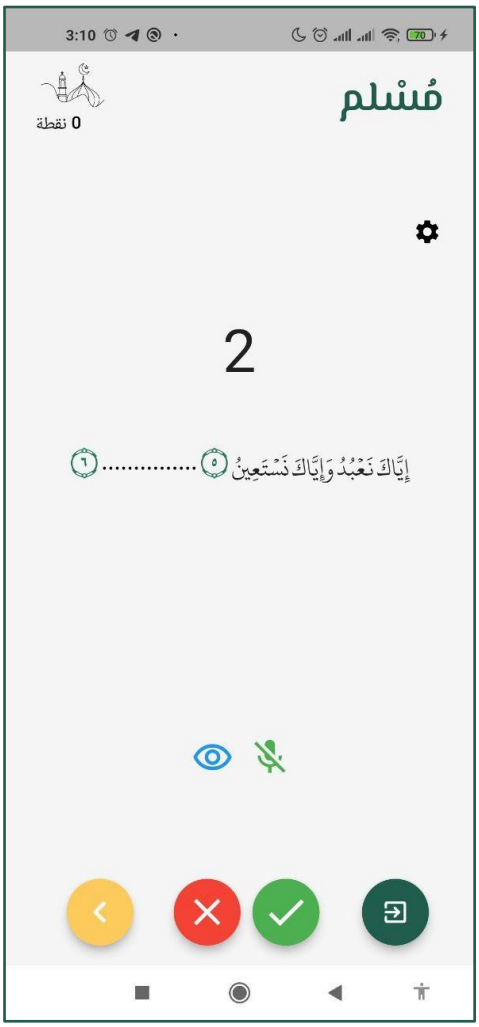


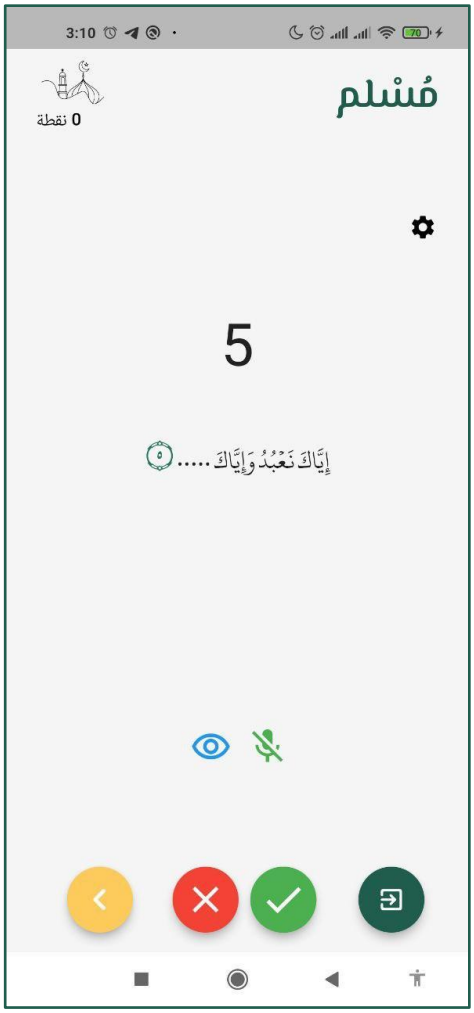
whatever user choose, the logic is the same, the test will have unlimited questions that is categorized to 6 types (hide first word, hide last word, hide previous verse, hide next verse, hide first half of verse, hide last half of verse), and for every correct answer user will be given some points, it's actually the points that appear on the top nav.

The main difference if the user selects train on their own mistakes is that the unlimited questions will be based on their own mistakes, and answering them correctly will reduce the weight of these mistakes so that when practicing many times and getting the correct answer for a previous mistake, it will then hide from the mistake list.

Users have to press correct or wrong for their answers using the buttons, pressing the eye icon will show the correct answer, tests can also be done by voice which will turn the speech to text and compare it with the actual answer.


3:10
مُسْلم
0 نقطة
1
ٱلرَّحْمَٰنِ ٱلرَّحِيمِ ١ .....

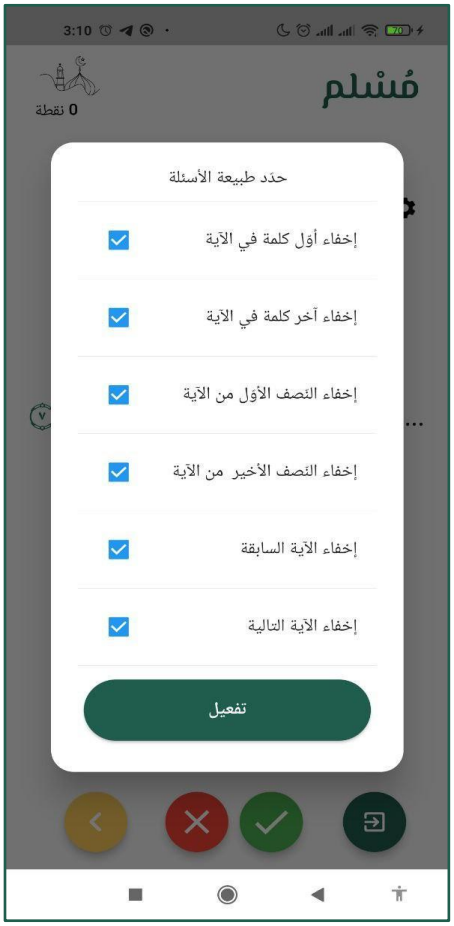

3:10
مُسْلم
0 نقطة
2
إِيَّاكَ نَعْبُدُ وَإِيَّاكَ نَسْتَعِينُ ٥ ..... ٦


3:10
مُسْلم
0 نقطة
5
إِيَّاكَ نَعْبُدُ وَإِيَّاكَ ٥

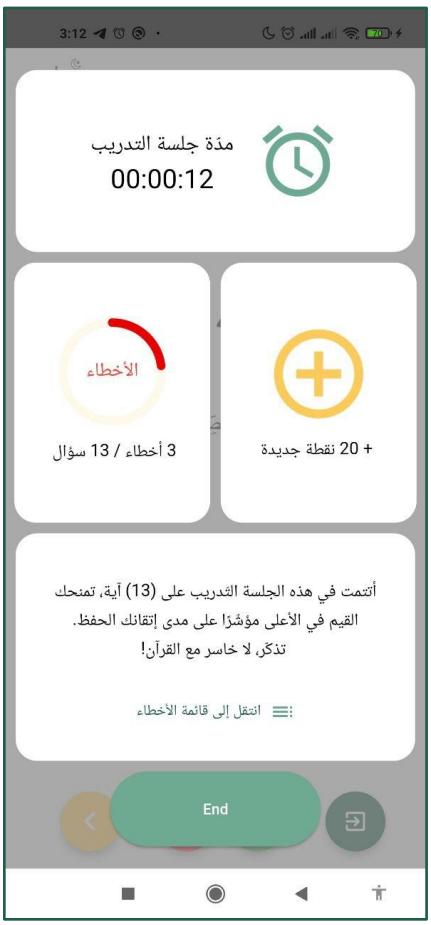

3:10
مُسْلم
0 نقطة
6
..... ٦ صِرَٰطَ ٱلَّذِينَ أَنْعَمْتَ عَلَيْهِمْ غَيْرِ
ٱلْمَغْضُوبِ عَلَيْهِمْ وَلَا ٱلضَّآلِّينَ ٧


3:10
مُسْلم
2 نقطة
15

from the setting Icon, users could specify to have only specific types of questions.



clicking end training will show a statistic about the training session including the session time, the number of earned points, number of mistakes related to number of questions. The new points will be shown on the navbar also.



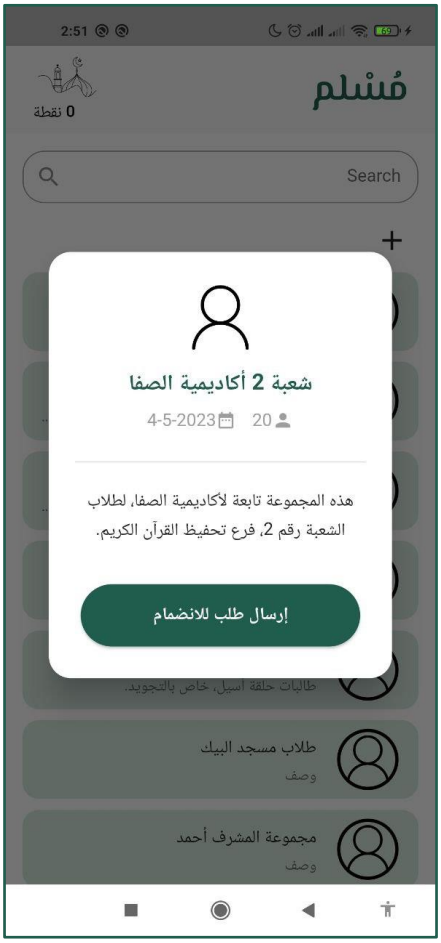
5.1.17 Notifications Screen.

In Muslim, there is two types of notifications. Type one is the notification the explained in the previous pages which is a notification for prayers on the prophets Muhammed, peace be upon him. The other type is a notification that remind the users who created plans when the day is about to end (at 8:00pm daily), those notifications will be also shown in notification screen.

5.1.18 Communities

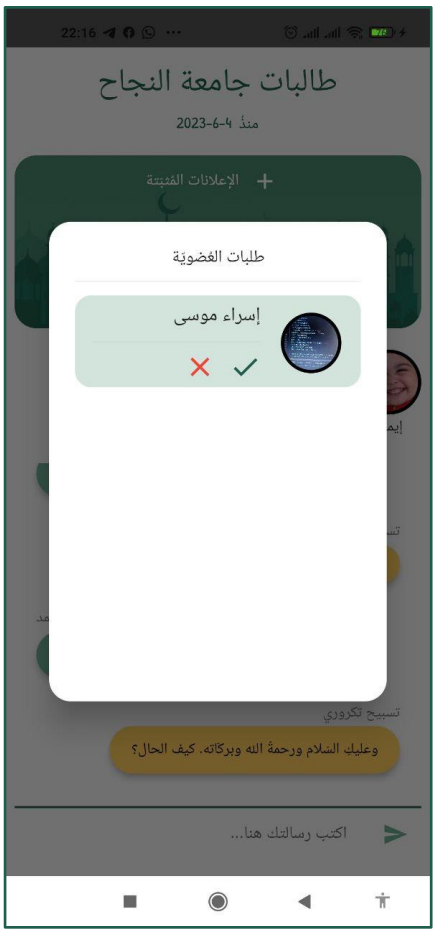
We mention communities before when talking about the home screen where user can view his communities (owned and joined) or join new community,

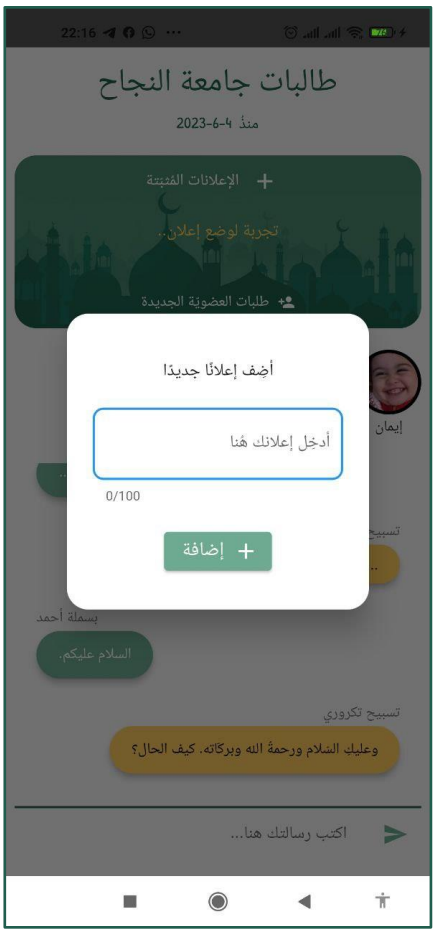
To join new community, users will be navigated to this screen which shows all created communities, by pressing any community card, user can view the community information and send or cancel join request.

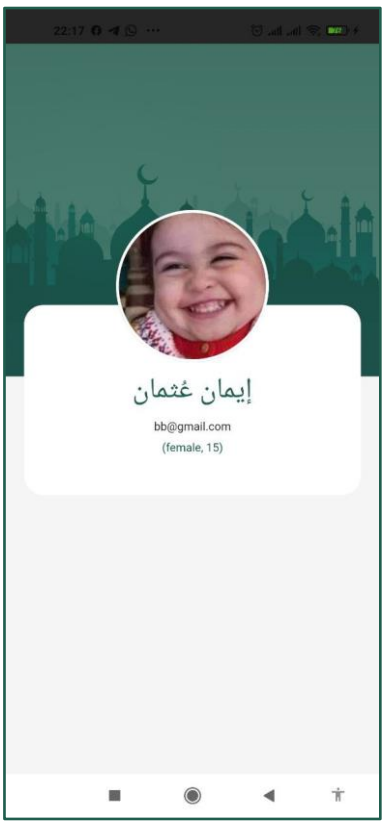


Any user can create his/her own community where other members can join, this is done by clicking the + sign then fill the community information and click create.

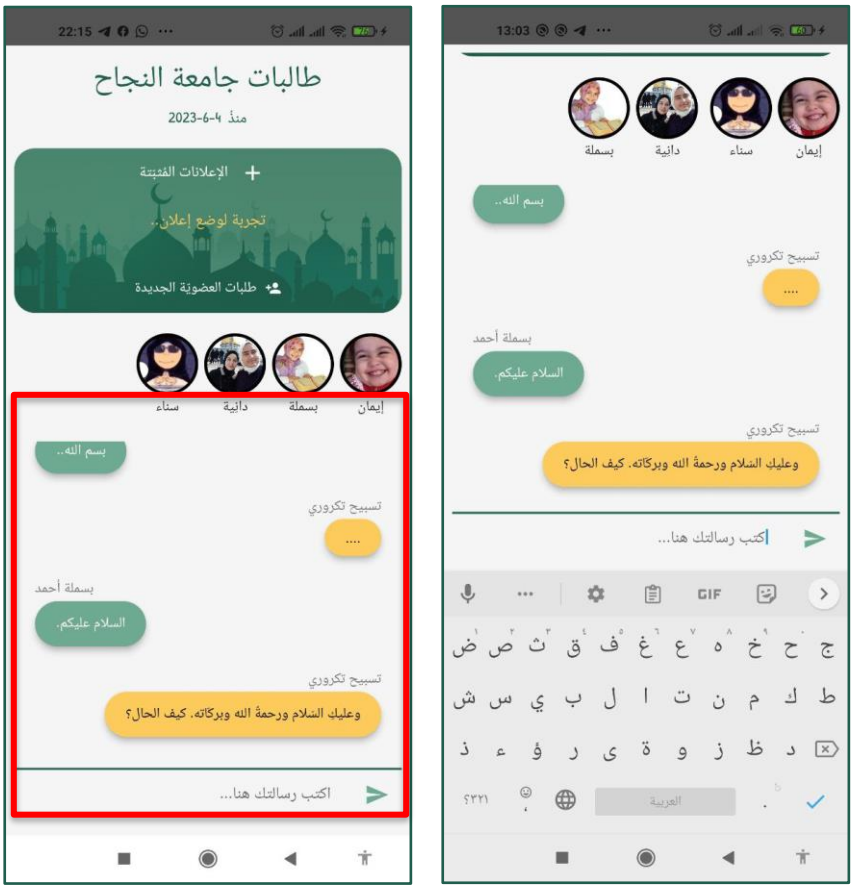
After clicking create, the community admin will be navigated to the community page. This page shows the community's name, created date, remaining time of the day. It also shows the members of the community where admin can click and visit their profiles. it Also shows the request to join the community and allow the admin to add sticky note for the joined members.



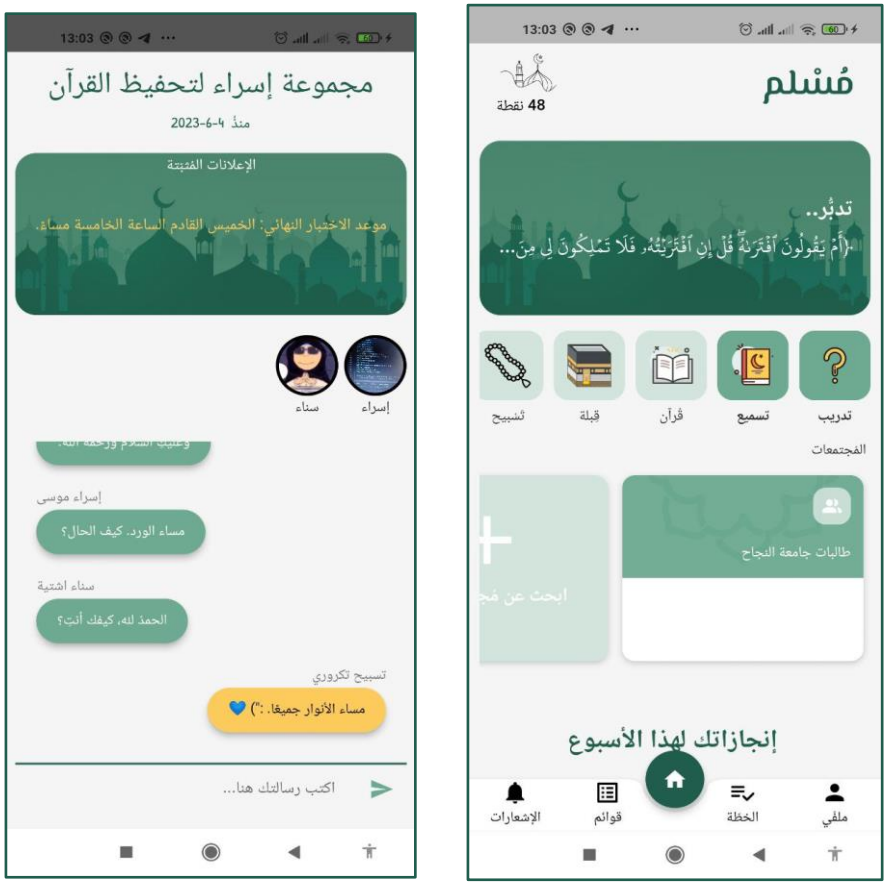




Note that the community has chat system that allow members of this community to communicate with each other in a user-friendly way.

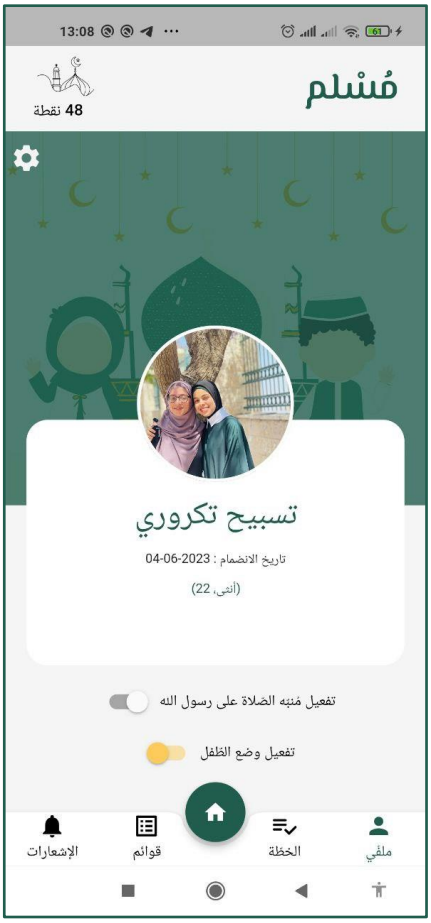


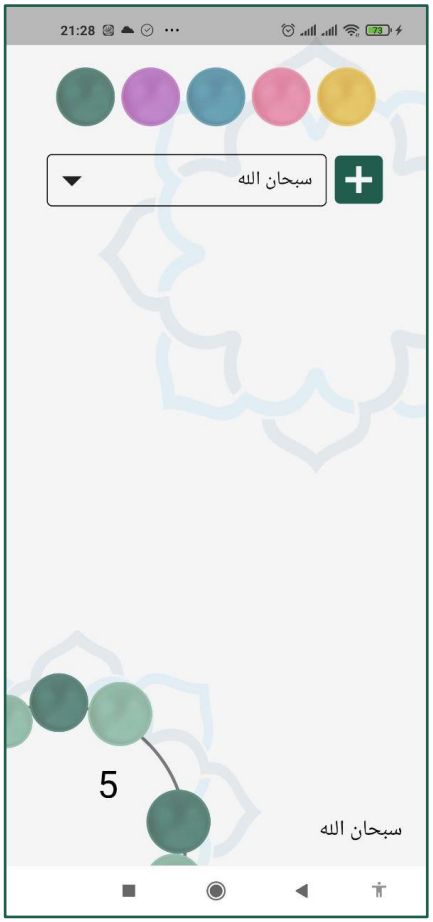
Now here is how accepted member in a community will see this community.



5.1.18 Child mode.

If the user activate child mode from the profile screen, then the rosary(Tasbeeh screen) will show more colors(the default for normal users is two colors), this mode also will change the background of main card in the home and profile screen.

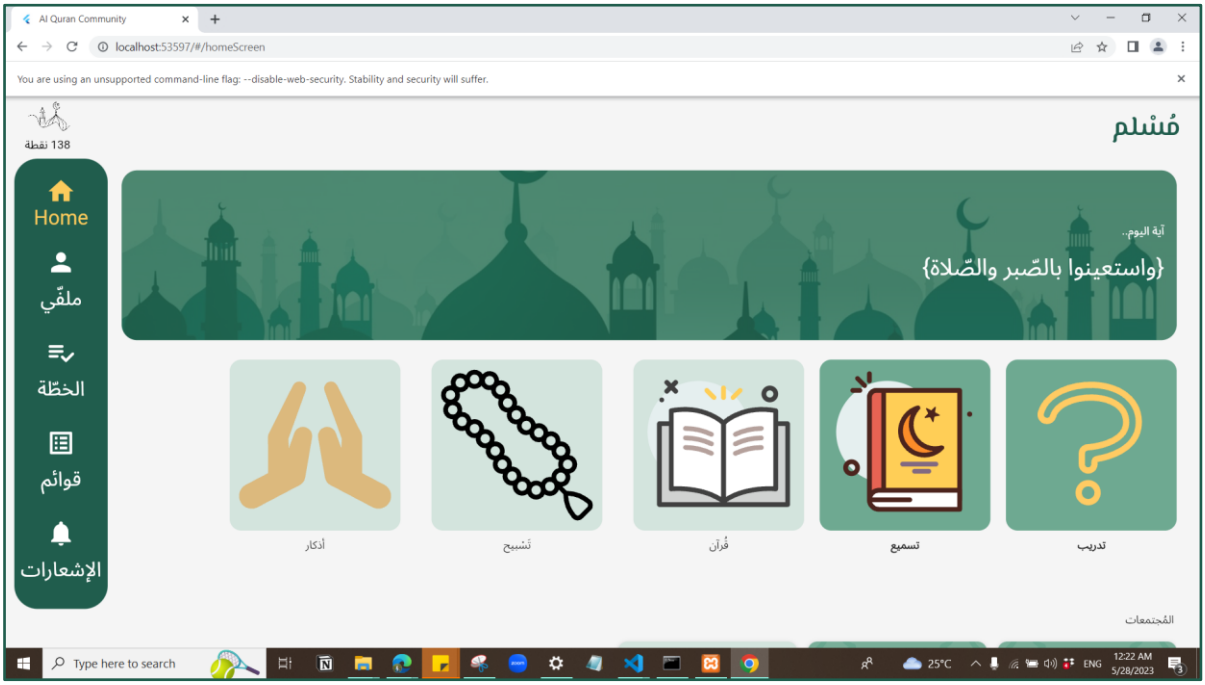


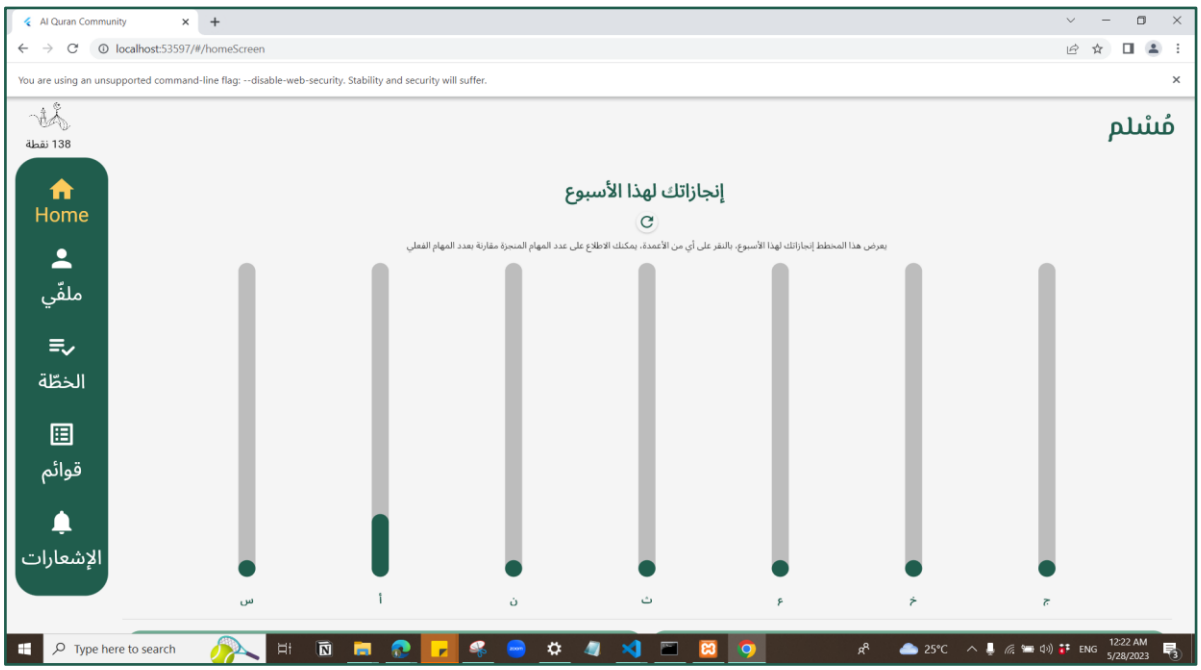


5.2 Muslim as Website :

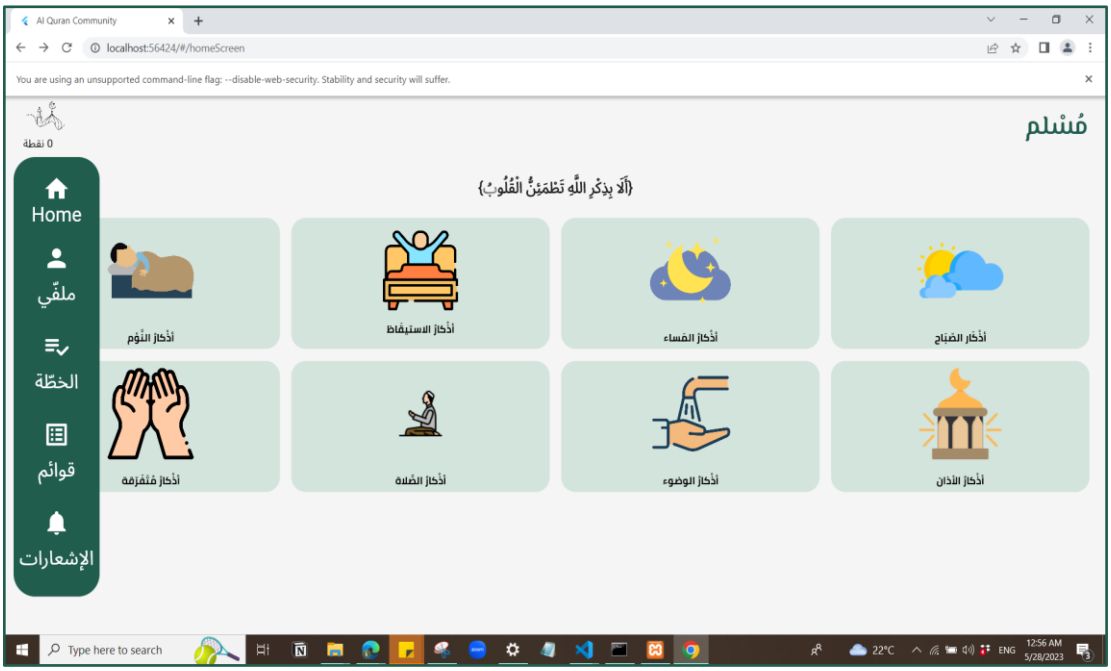
Our Website has most of the features that Muslim apps provide, so it has the same functionality that explained above. There is an extra part for the website which is related to admin.

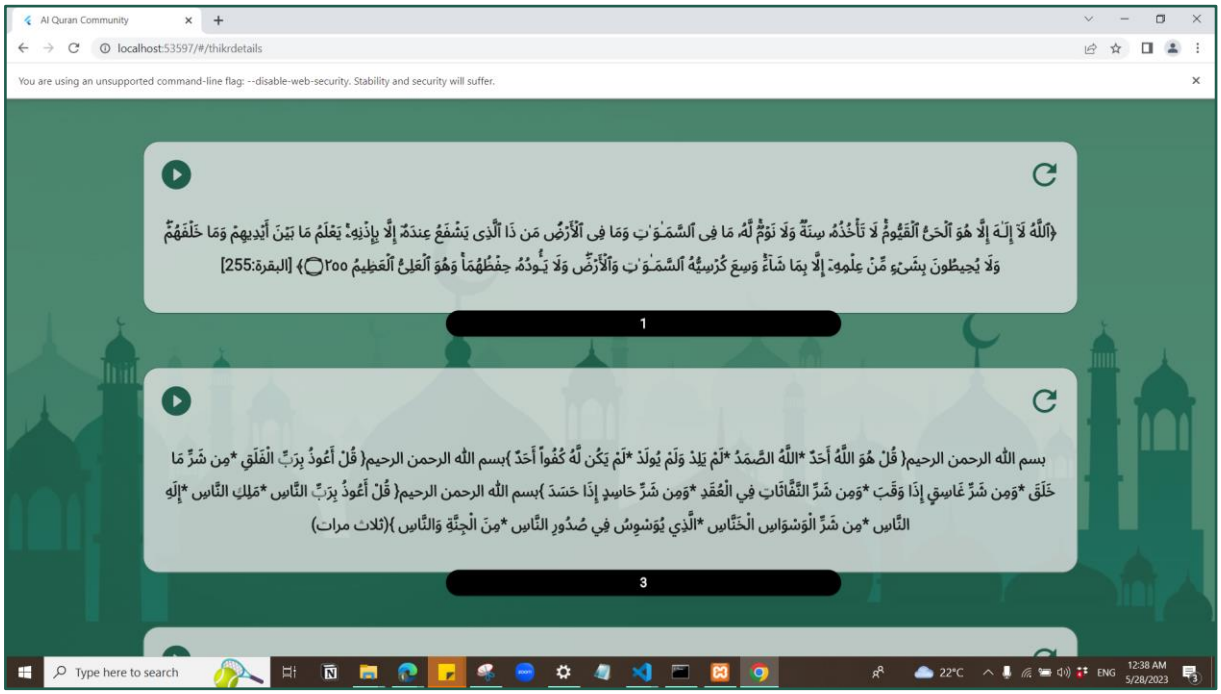
5.2.1 Website home screen:



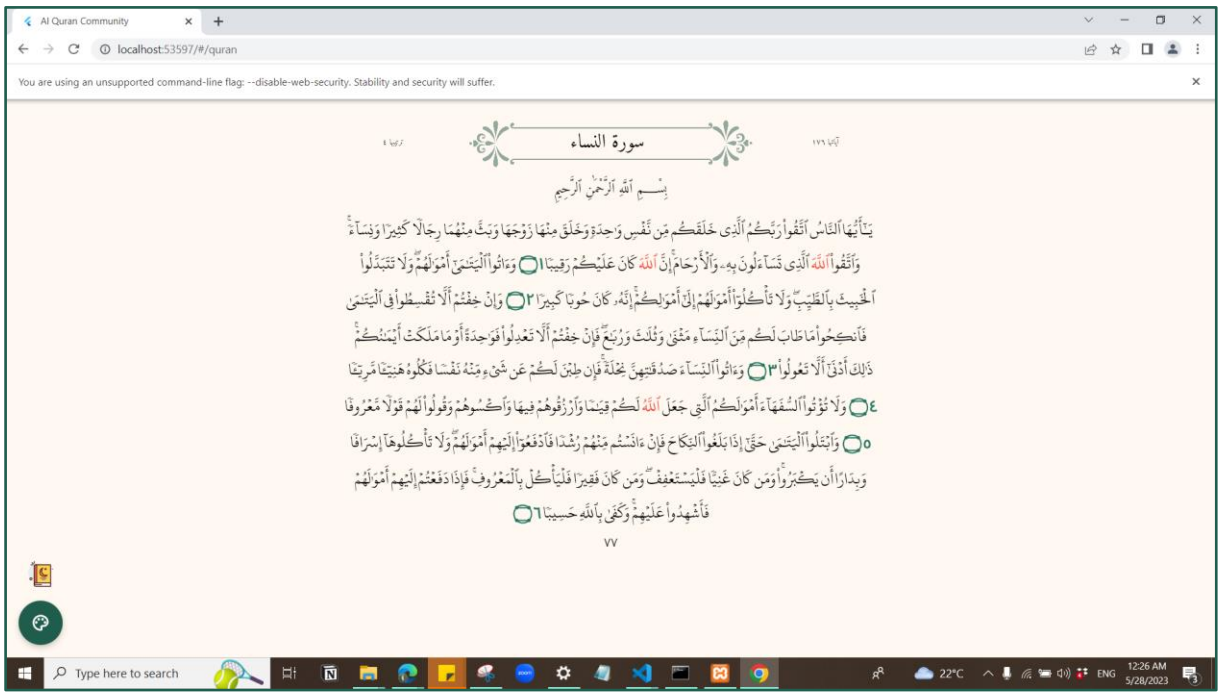


5.2.2 Website Athkar Screens:

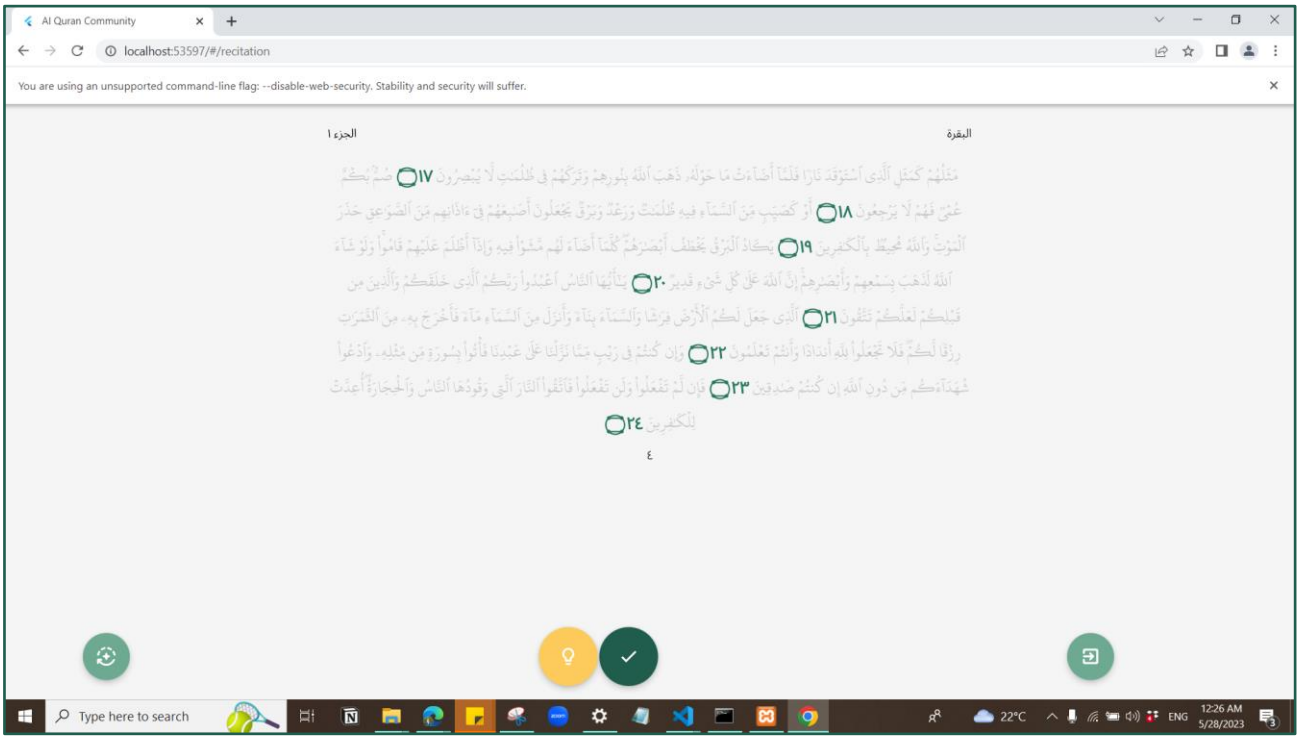




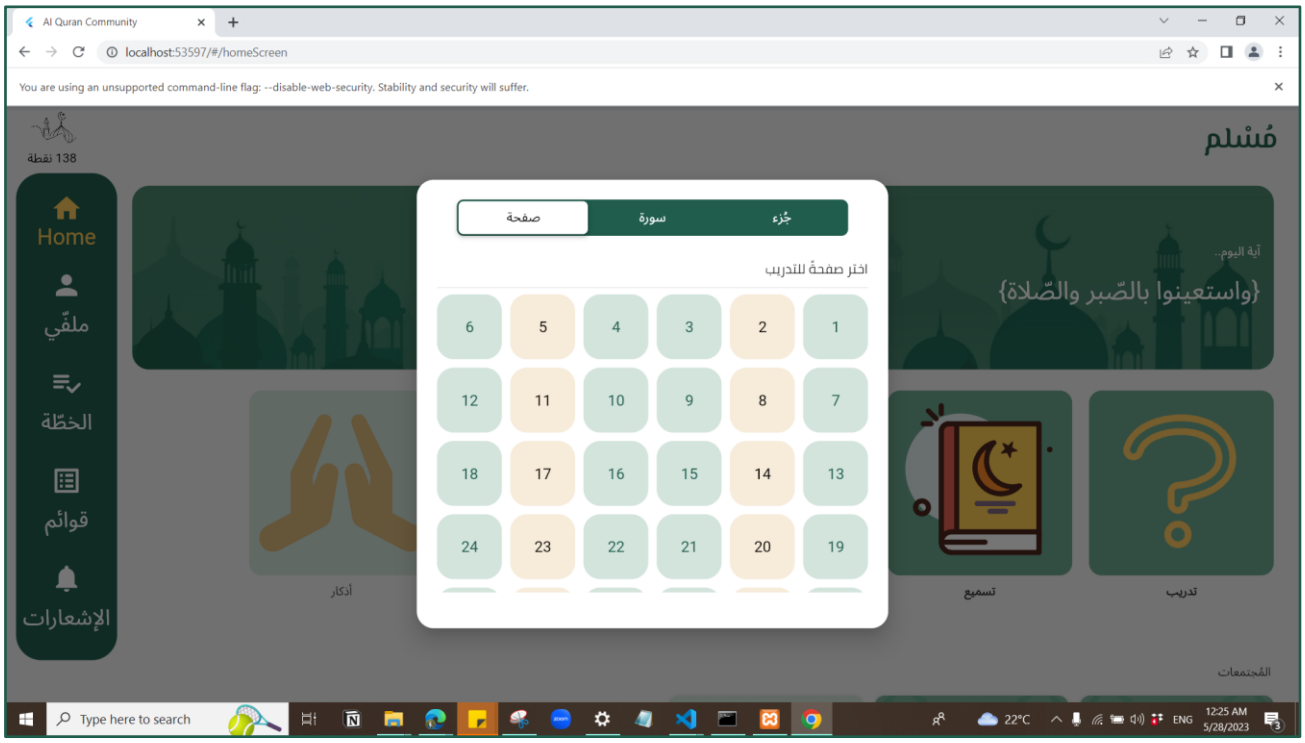
5.2.3 Website Quran

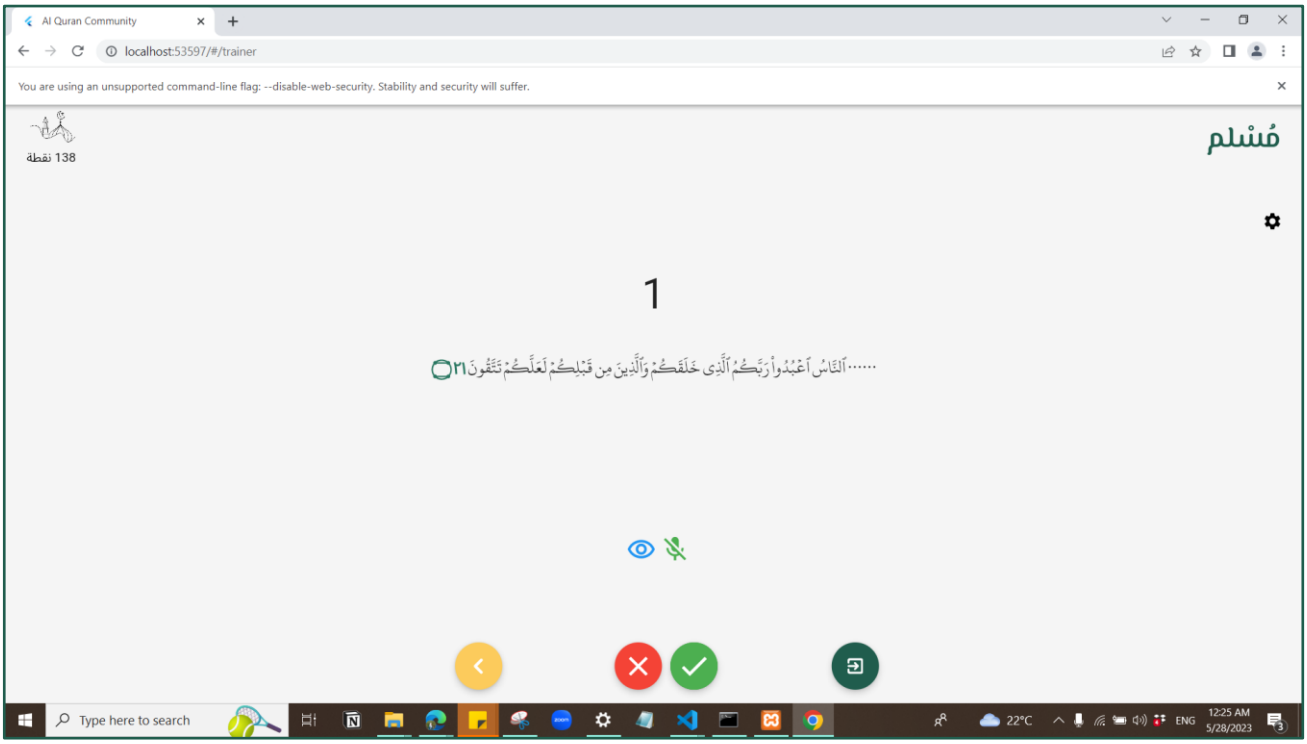


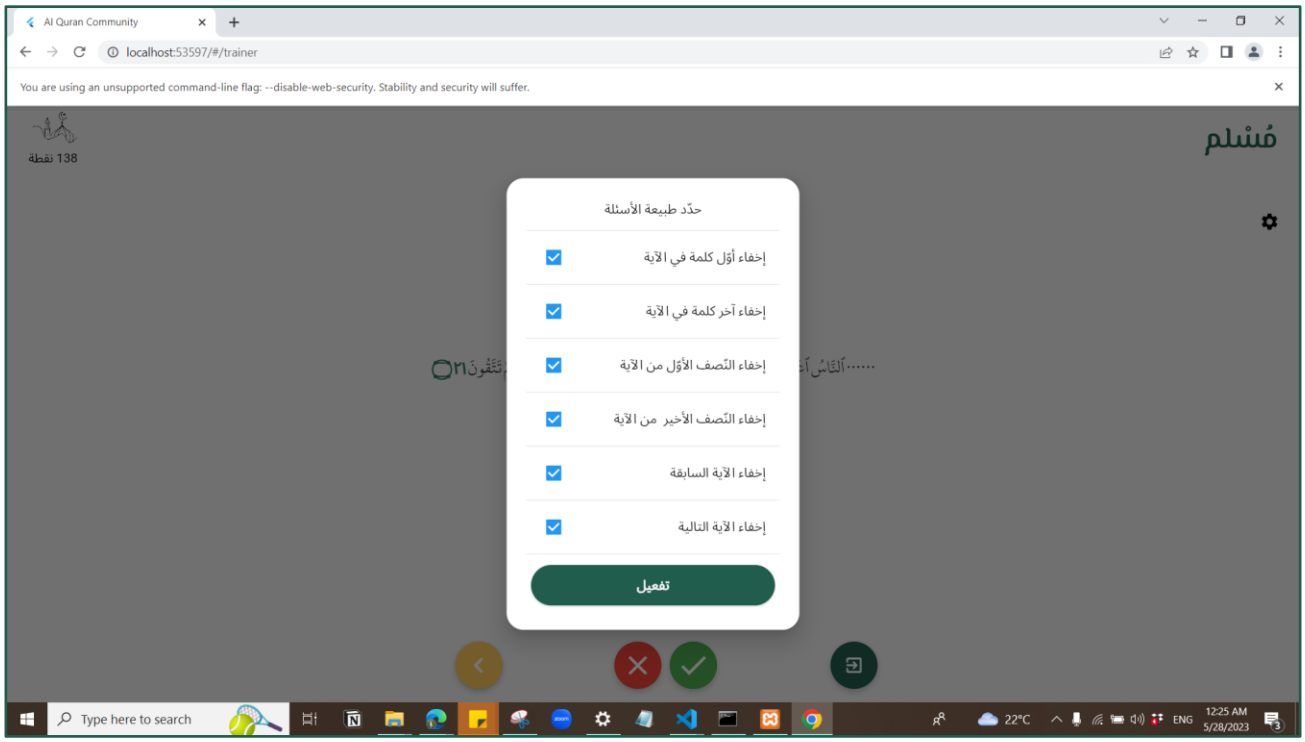
5.2.4 Website Recitation Screen:



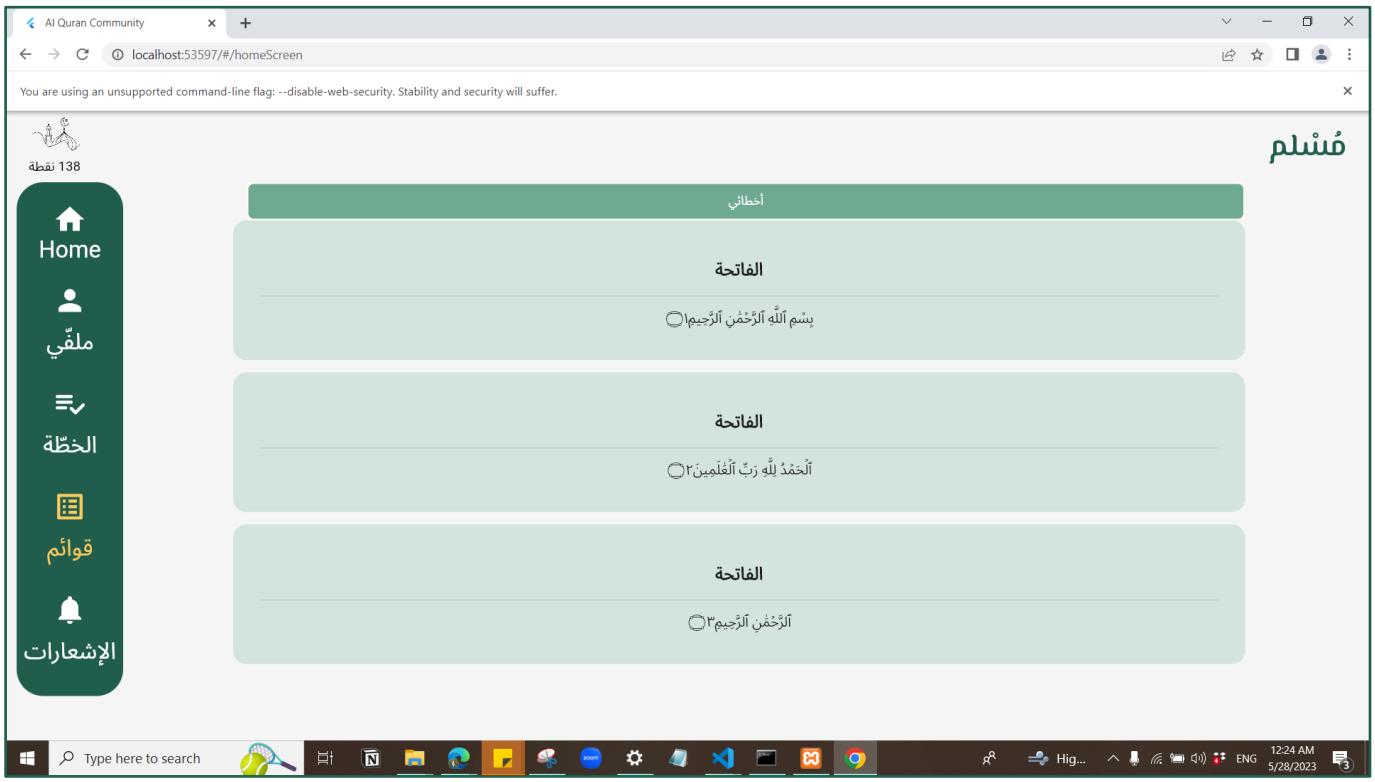
5.2.5 Website Trainers Screens



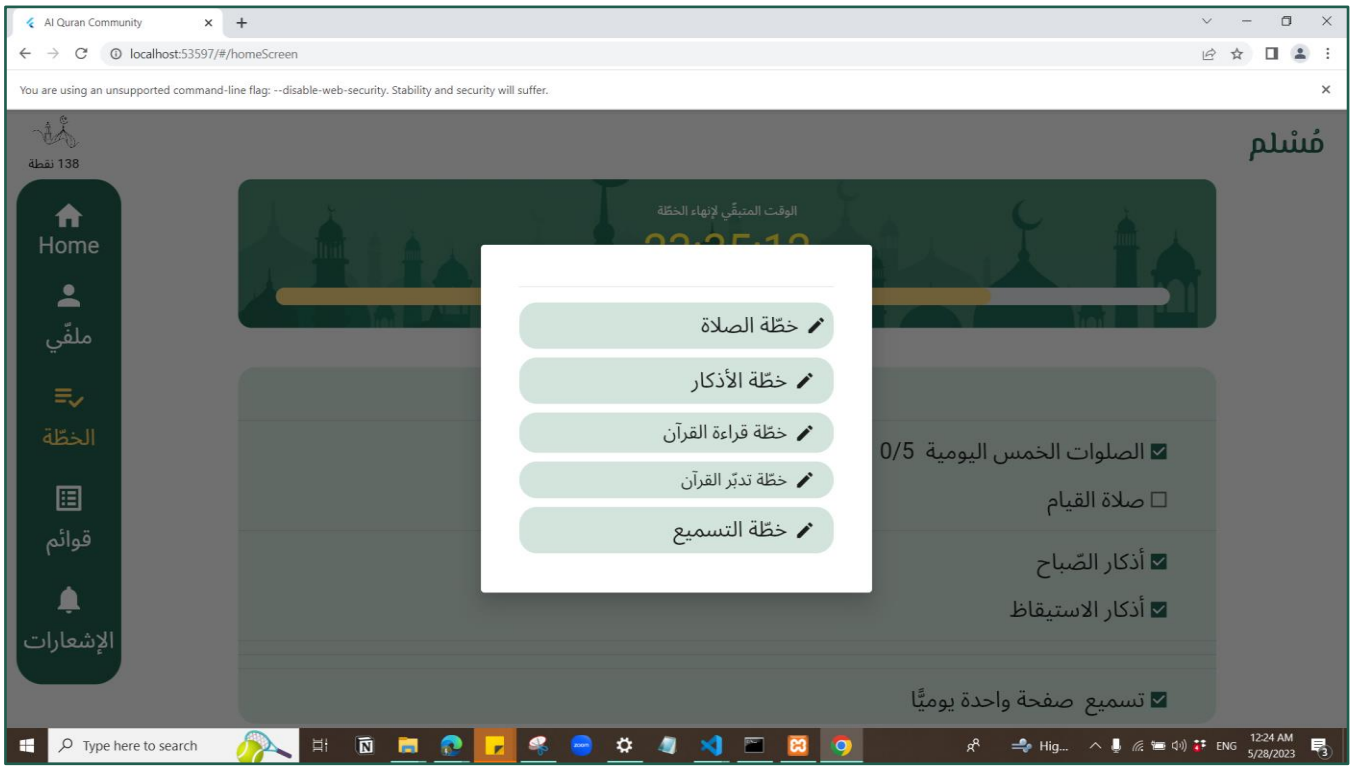




5.2.6 Website Lists Screen



5.2.6 Website Plan Screen



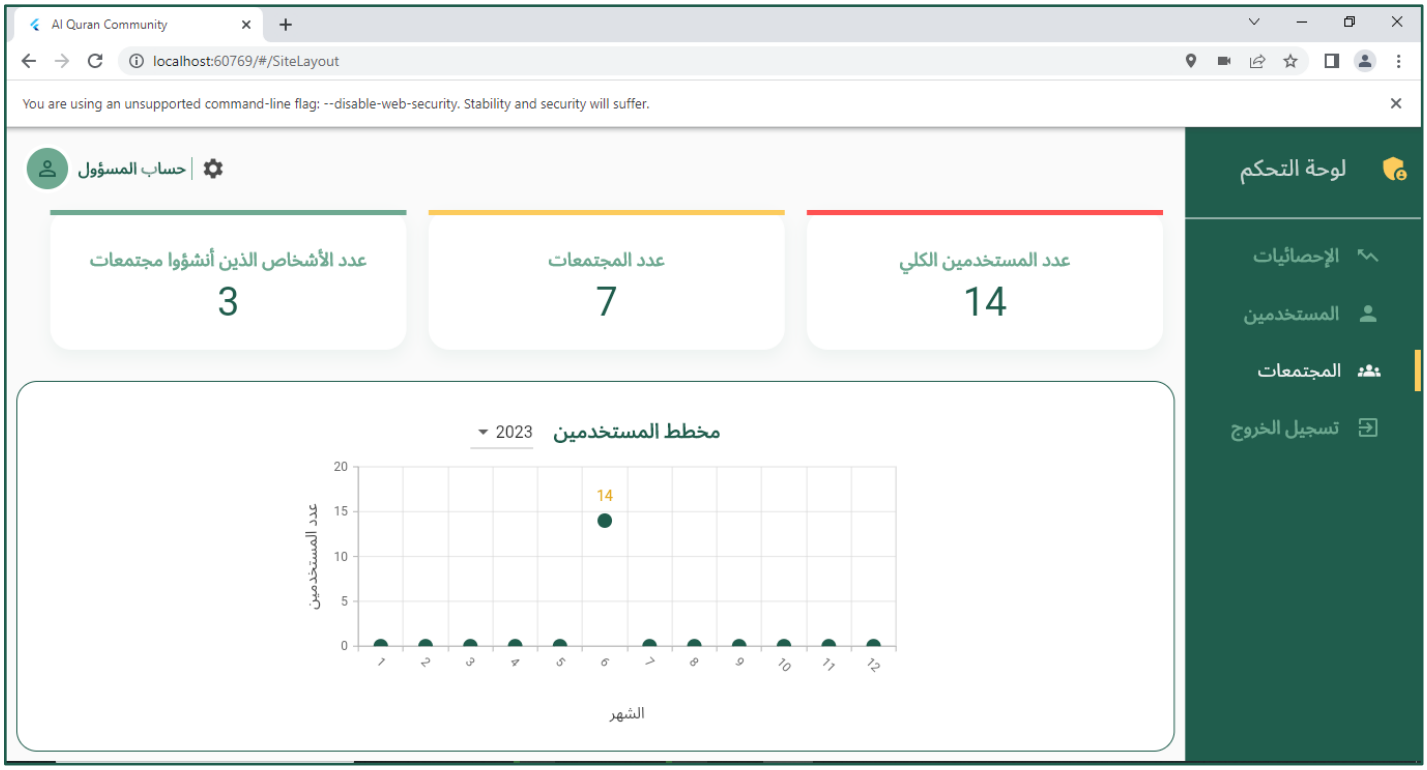
5.2.7 Website Admin

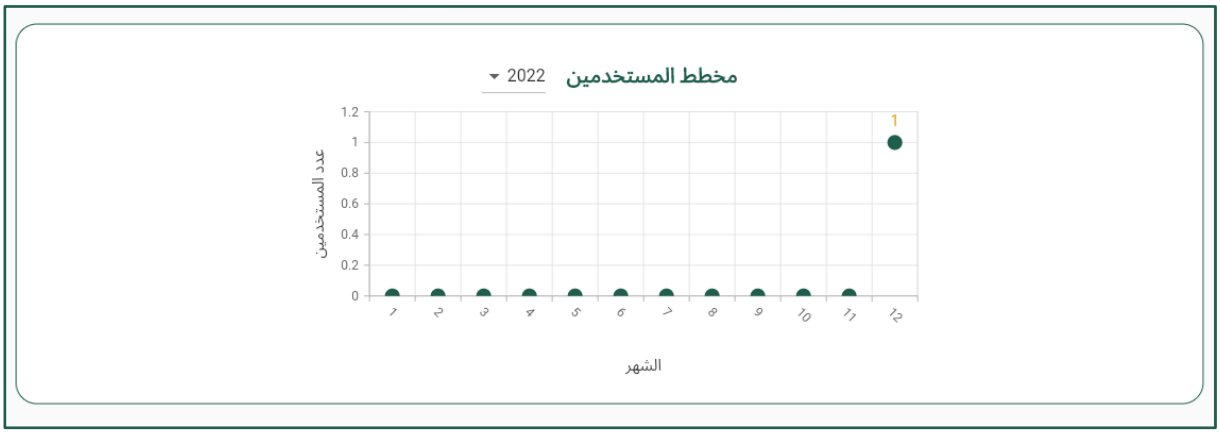
the admin of the website has a dashboard that has three main parts

5.2.7.1 Admin Dashboard - Overview

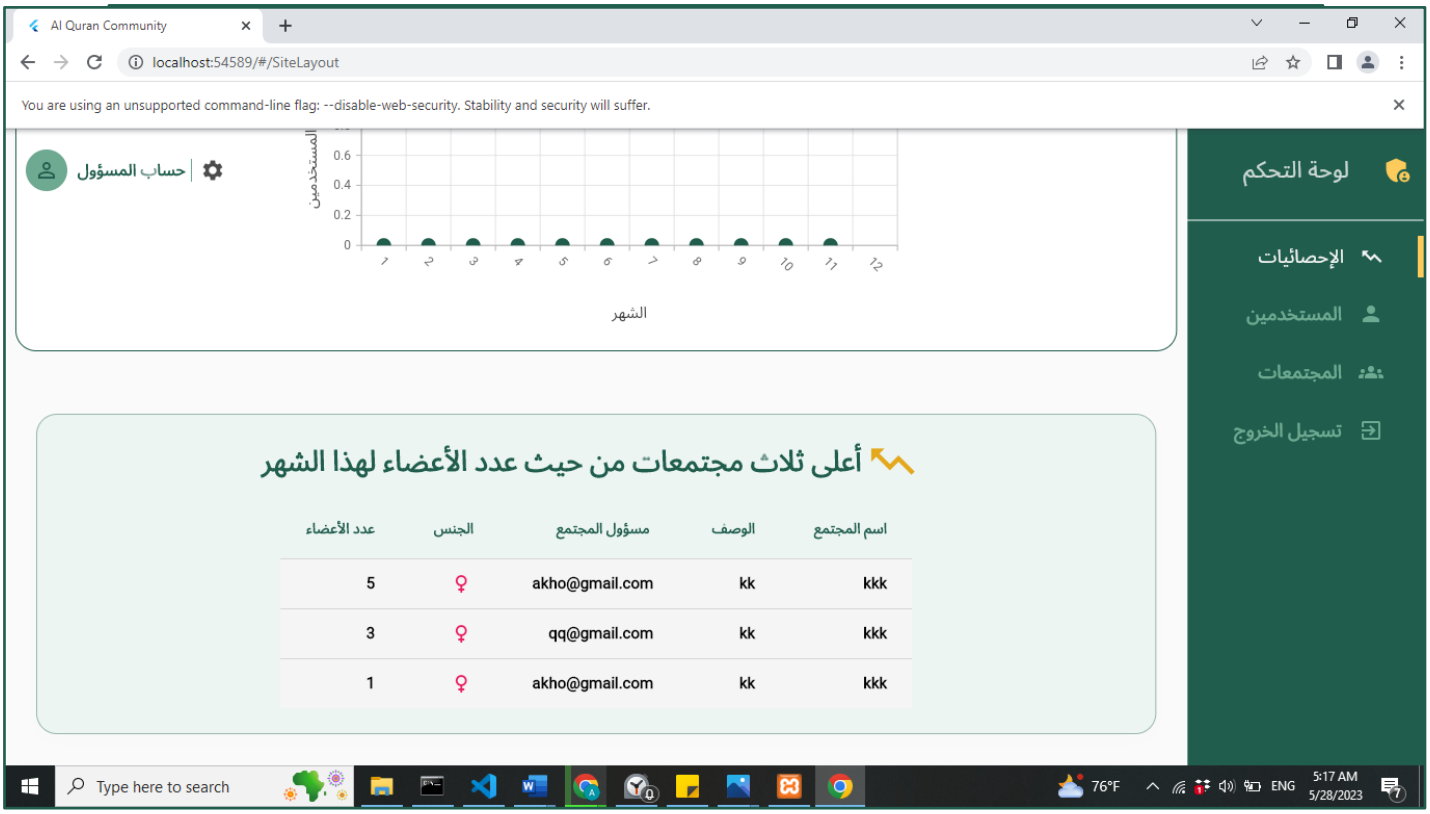
-Card that shows the total joined users, total created communities and total number of people who created communities.

-Statistics for the number of joined users for each month in the last 4 years.Admin can select any year from list of 4 last years and a chart will show how many users joined the application for each month in that year



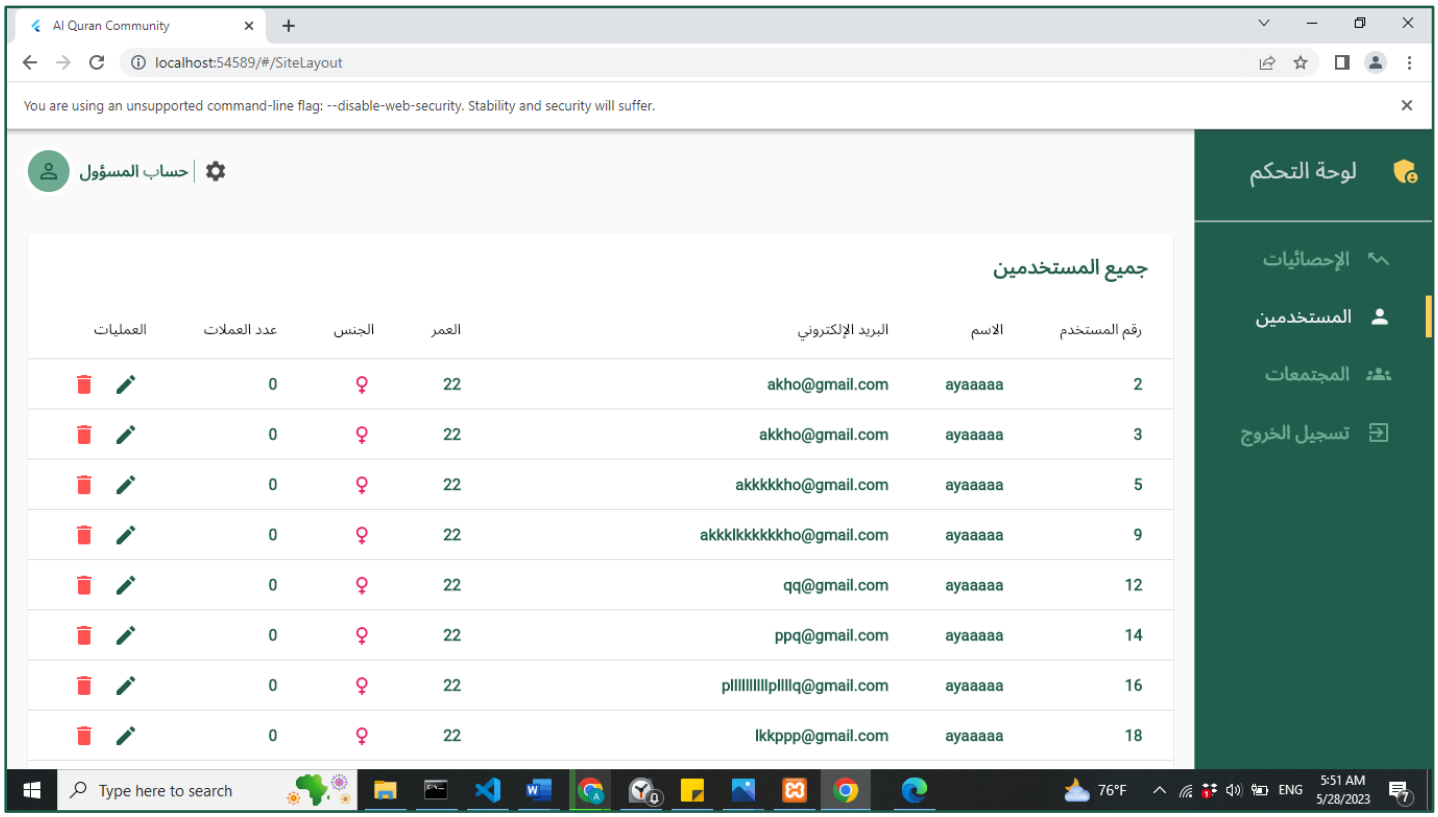


-A table that shows the top three joined communities for the current month.

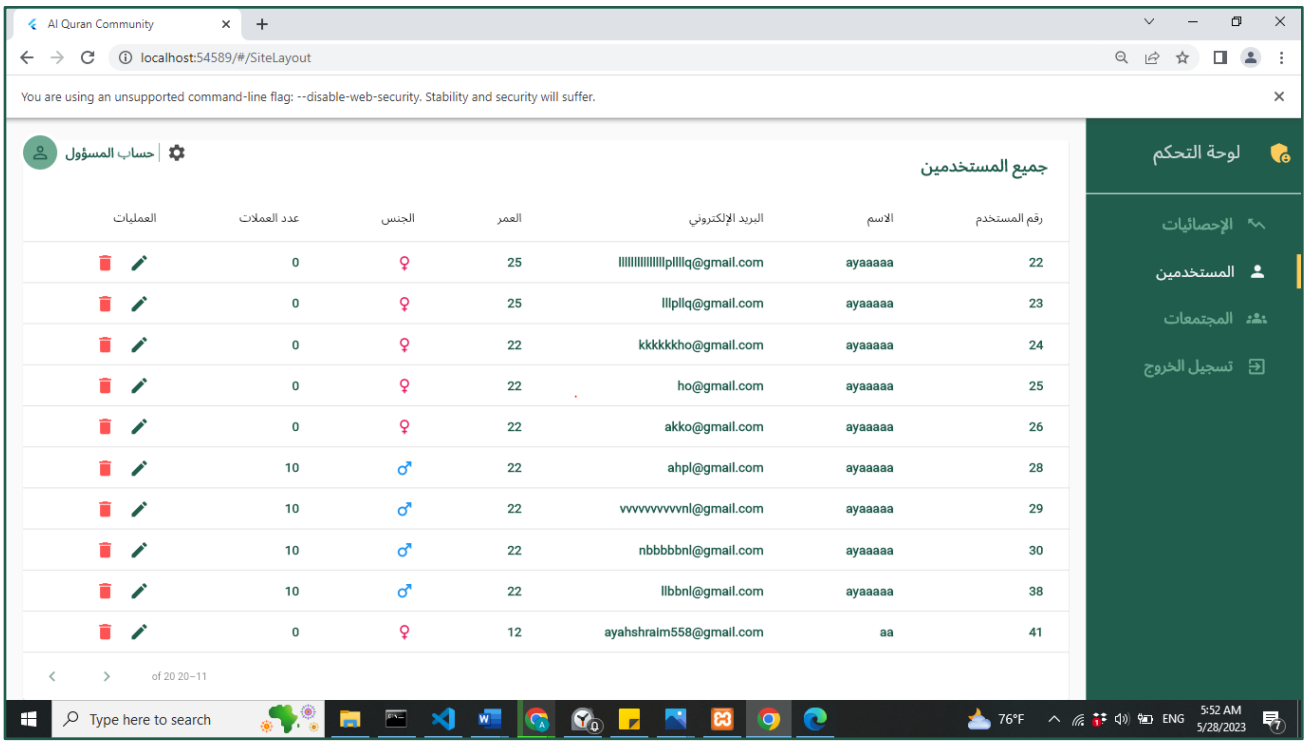


5.2.7.1 Admin Dashboard - Users

From here, Admin can view the information of all users joined, this is organized on multiple pages to make it user friendly, admin can delete any user from the system.

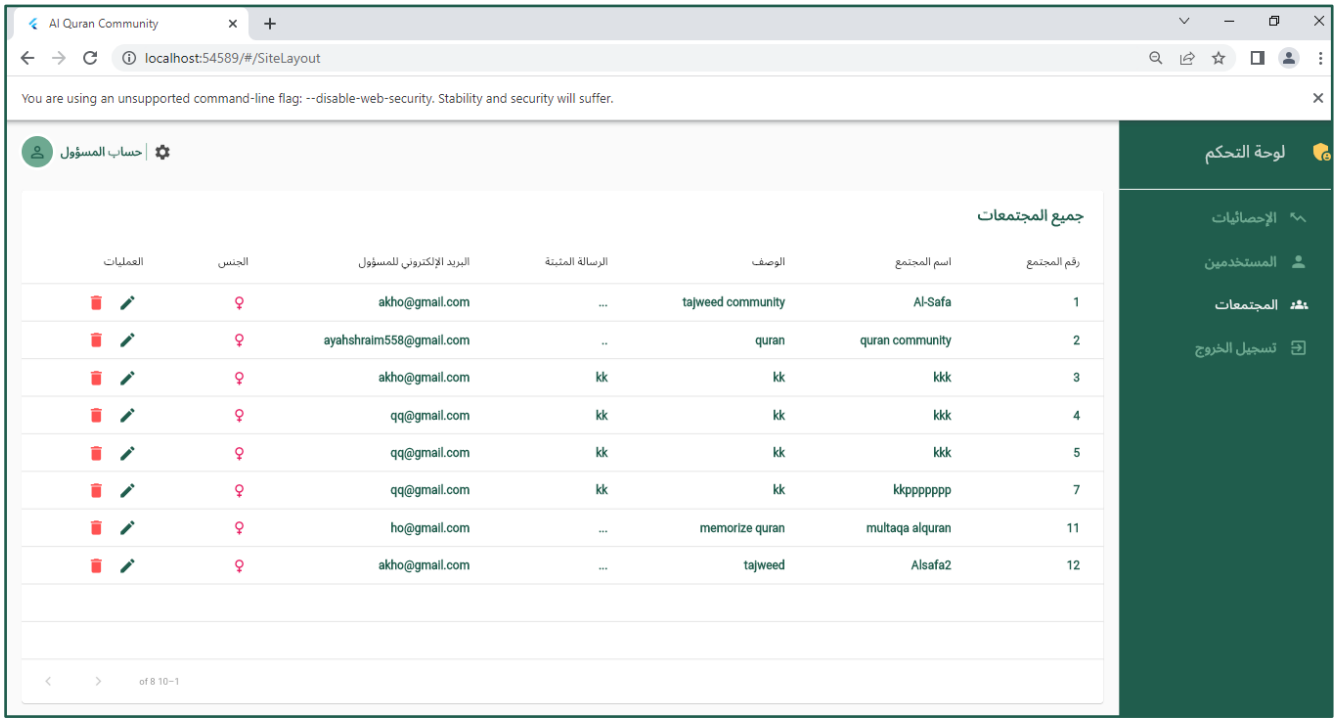


more users will shown on page 2



5.2.7.1 Admin Dashboard - Communities

From here, Admin can view the information of all Communities joined, this is organized on multiple pages to make it user friendly, admin can delete any Community from the system.



Chapter 6: Discussion

We think that our application “Muslim” effectively address a good percentage of the needs of individuals seeking user-friendly support in memorizing the Quran. Through its interactive modules, audio training, and adaptive memorization training, the app enhances the Quranic study.
Additionally, the app holds potential for expanding its impact beyond Quran memorization, supporting broader Islamic education. Moreover, the app caters to individuals who desire convenient access to Muslim daily activities on their phones. It provides features and resources for practicing Islamic rituals, catering to the diverse needs of users. Overall, we believe the Muslim app successfully solves the problem for those seeking user-friendly Quranic support and convenient access to Muslim daily activities, offering promising prospects for future growth.

Chapter 7: Conclusions and Future work

7.1 Conclusion

In conclusion, the development of the Muslim (مسلم) Application/Website has successfully addressed the daily needs of Muslims and provided a comprehensive set of services to enhance their religious practices. By incorporating features such as Quran reading with tafseer, interactive

athkar and tasbeeh, Qibla direction, and personalized prayer times, the app caters to the diverse requirements of its users. The ability to create customized daily activity plans, track progress, and join interactive communities further enhances the user experience and fosters a sense of support and engagement.
One of the standout features of the Muslim app is its adaptive and user-friendly approach to Quran memorization. Through the interactive and testing functionalities, users can effectively test and improve their memorization skills. The system intelligently generates questions based on individual mistakes, provides hints and feedback, and tracks users' progress and development over time. This feature holds great potential in assisting individuals in their Quran memorization journeys and facilitating their improvement and growth.
With support for Arabic language and already start working on English language, the Muslim app ensures accessibility and inclusivity for a wide range of users. Its user-friendly design and smart recitation system contribute to a seamless and enriching user experience.
Overall, the Muslim Application/Website serves as a valuable tool for Muslims seeking to enhance their daily practices and Quran memorization. Its diverse features, adaptability, and interactive components contribute to a holistic and supportive user experience.

7.2:Future works

1- Automatic plan tracking.

2- Additional features for the community admins like giving tasks to members and follow their improvement from the features of the app.

3-Support the English language completely.

5-Aidio recitation support by using belqis Api.

References