

AL-NAJAH NATIONAL UNIVERSITY

FACULTY OF ENGINEERING

COMPUTER ENGINEERING DEPARTMENT

GRADUATION PROJECT1

Synergy App

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2 Disclaimer

This report was written by Salam Younis and Roaa Qino at the Computer Engineering Department, Faculty of Engineering, An-Najah National University. It has not been altered or corrected, other than editorial corrections, as a result of assessment and it may contain language as well as content errors. The views expressed in it together with any outcomes and recommendations are solely those of Salam and Roaa. An-Najah National University accepts no responsibility or liability for the consequences of this report being used for a purpose other than the purpose for which it was commissioned.

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3 Abstract

Synergy is a mobile application and website that Organizing the donation process between donors and the needy in the easiest way without the need for an intermediary between them and without the need for experience in the subject of donation.

The application suitable for all ages and groups that do not have the ability to search for special donation bodies, Allow users to create a profile that includes their name, location, and contact information.

The application contains a set of facilities that enable donors to provide aid, either financially, clothes, food, blood, or medicine to the needy, so that the needy submits a request through the application with the thing he needs and remains waiting until the official approves the request and sends it through volunteers who organize the delivery, verification and delivery process according to each person's area .

The administrator can monitor the donation process, send notification, delivery and reception of requests, to carry out the process of distributing roles to volunteers, and to create statistics that show the total donated quantities and the percentage of requests received from donations.

The idea of the project does not exist in our country, Palestine, and donations are always dealt with through social networking pages and paper transactions in a group of charities in the region, and sometimes there is fraud in donation processes, so the application comes to solve these problems, so the donation process is more direct between the donor and the needy .

4 Introduction

4.1 Problem

The problem lies in the poor communication between the donors and the needy, and the needy are sometimes shy to ask for help, as well as not knowing the donors from the right place and the right people to volunteer for.

Also, in our society there are many cases of poverty and needy people, and also the social classes in our country Palestine tend from the average to poverty, and this thing needs to be organized more globally.

Another problem is the presence of some fraudulent pages that claim to be for financial aid and cause problems in this matter.

4.2 Objective

The aim of the application is to create an appropriate way to communicate between the needy and the donors, to facilitate the process for both parties, and to save effort for them.

4.3 Scope Of the Work

Our application Synergy focuses on the needy group of students, the needy, and the people who donate and volunteer to help in the completion of volunteer work.

4.4 Importance

Finding a smart and technical solution to Donation problems contributes:

1. Save time and effort searching for those in need to donate to them.
2. Furthermore, the use of the application is suitable for all age groups, so there is no difficulty in creating the donation process and the request process.
3. Privacy was an important topic in the application to solve the problem of shyness of those in need in asking for help, whether it was financial, study, food, or otherwise.
4. The presence of donors in the application contributed to increasing charitable work and organizing difficult operations, by either donating a special place for them to take advantage of its space and place items in it, or by delivering requests to the needy.

5. Also, the presence of notifications in the application contributed to the speedy process of requesting urgent blood units that contribute to saving people's lives.

4.5 Report Organization

The report is structured into seven distinct phases, each serving a specific purpose. It commences with an introduction that sets the context and provides an overview of the project. Next, the constraints, standards, and codes relevant to the project are discussed in detail, ensuring compliance with established guidelines. Building upon this foundation, the report delves into an exploration of previous coursework that contributed to the project and highlights the significant challenges encountered along the way.

A dedicated chapter is then dedicated to conducting a comprehensive literature review, where relevant scholarly works and research in the field are critically analyzed and synthesized. Subsequently, the methodology chapter elucidates the practical approach employed, encompassing the specific tasks undertaken, as well as the tools and technologies utilized for the project's development.

Moving forward, the report underscores the obstacles triumphantly surmounted and presents the accomplishments achieved in the results and discussion section. These findings are thoroughly examined and contextualized, shedding light on their implications and contributions.

Lastly, the report concludes by offering valuable recommendations for future work and development goals, providing insights and directions for further exploration in the field. The conclusion chapter wraps up the report, summarizing the key findings and reinforcing the significance of the project's outcomes.

5 Constraints, Standards and Earlier coursework

5.1 Constraints & Limitations

1. **Platform Compatibility:** One constraint to consider is ensuring compatibility with multiple platforms, such as Android and iOS. Flutter provides a cross-platform framework, but there may be specific design and functionality considerations to address for each platform[1].
2. **User Experience** Designing a user-friendly and intuitive interface is important to encourage donations. Constraints related to user experience might include optimizing app performance, and accommodating different screen sizes and orientations.
3. **Device Compatibility:**Flutter supports a wide range of devices, but ensuring compatibility across different device models, screen resolutions, and operating system versions might require testing and adapting the app accordingly.

5.2 Standards

5.2.1 MVC (Model View controller)

The Model View Controller pattern was employed in our system. We could divide the entire project into 3 stages to make it easier to follow the flow of work, These components are as follows:

1. **The Model:** In Flutter the model represents the data structures we used and business logic within the app. It can include classes that define the data models and operations related to data manipulation or retrieval .
2. **The View:** In Flutter represents the user interface elements and presentation logic
3. **The Controller:** In PHP It represent in the backend handles the business logic, receives and processes requests from the client, and coordinates the interactions between the model and the view. It contains PHP code that receives API requests, validates input, invokes relevant model methods, and generates appropriate responses.

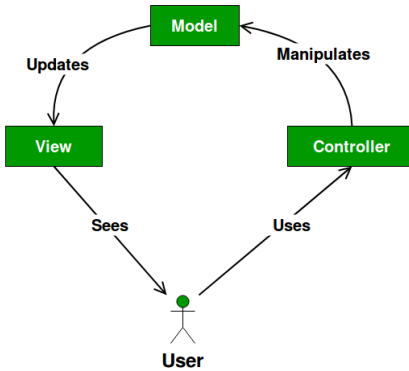


Figure 1: MVC Structure of the system

5.2.2 Agile Model

The agile model is the project management model, is an iterative and incremental approach to software development that emphasizes flexibility, collaboration, and adaptability.

1. Brain storming to get all the needed requirements.
2. We created UML diagrams and other design artifacts to visually represent the functionality and interactions of the new features within our system. This helped in clarifying the requirements and ensuring a common understanding among the team members.
3. Development: in this part, we started writing the code for the front end and back end of each page.
4. Testing: Once the development was complete, we performed thorough testing to ensure that all components, including the integration between the back-end and front-end, worked correctly. This involved functional testing, performance testing, and user acceptance testing to validate the system against the defined requirements.
5. Feedback: we kept getting feedback from the supervisor if the project we built satisfied the requirements.

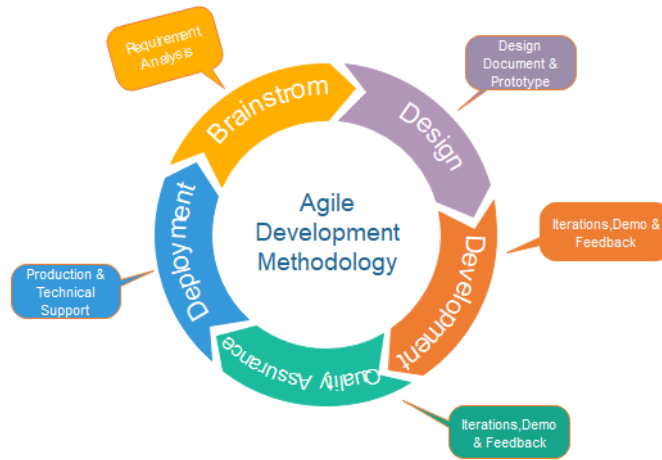


Fig. Agile Model

Figure 2: Applying Agile model

5.3 Earlier coursework

The courses that we learned during our studies in the Department of Computer Engineering helped us build this project .Through this application, we showed our skills that we learned in courses , such as Web Programming and Object-Oriented Programming ,Security ,Software Engineering . Furthermore, we took online courses in MySQL, PHP, Flutter, and Firebase, which aided in the implementation and development of our project.

6 LITERATURE REVIEW

As we have seen in our time, most of our lives tend to solve our problems through applications and technology, because these methods are used to save time and effort and facilitate processes for us ,There are applications that provide the donation service, but not completely. For example,Blood Donor App is an application to donate blood, and provides a service to search for blood , for donors and organizes volunteer campaigns.[2].

In addition, the Give Lively an app that provides free donations and fundraising pages.

But what is unique about our application is that it provides all these services together, as it provides donations of blood, money, food, and medicine, in addition to providing a service to the other party (in need) and organizing all these operations.

7 Methodology

After conducting a thorough review of the pertinent literature, we have come that this project has enormous potential and is a brilliant idea. The specifics of the collection, analysis, and manipulation of data will be the focus of this section. Along with the findings from our efforts, we will also look into the procedures, tools, and constructions used during the creation phase. By analyzing these elements, we hope to achieve a thorough understanding of the project's execution and effects.

7.1 Inspiration phase

After looking at the applications available in our country, we noticed a lack of applications that organize donation and charitable work of all kinds and are limited to specific associations, and also our society began to develop and interest in obtaining the service in the easiest and fastest way, and also the presence of a large group of people who are interested in donating and charitable work, so our application idea was comprehensive to these requirements .

7.1.1 Ideation phase

After considering all the requirements that we need in the application, the result was to create an application which can be specified as a smart application with the following features:

1. Solve the problem of time and effort in the donation process and communication between the donors and the needy .
2. Solving the problem of knowing the needs of the needy by requesting from the needy side for the purposes he desires and showing them to the donors.
3. It solved the problem of not showing the identity of the needy to the donor, thus increasing privacy among users.
4. And the presence of a volunteer group in delivering orders and donating space contributed to making the work inexpensive and did not require a large budget .
5. It also contributed to the rapid availability of blood donors by sending notifications to all users to donate blood as soon as possible.

7.2 Tools, Methods and Programming Languages

In our project many programs and programming languages were used, frameworks, and many other things when designing the app for mobile devices and the website, which will be explained more below:

7.2.1 Client Side

- **The Design:** After defining all the features in the application, we started thinking about the external form of the application in order to be in the best and easiest way and suitable for all ages to deal with.
- **The Frameworks:** We chose to use Flutter, an open-source UI framework from Google, for developing the client-side. Before starting the project, there was a thorough investigation and examination conducted which led to this particular choice. With Flutter, we can develop mobile apps for both iOS and Android platforms using a single code base, thus eliminating the requirement for distinct native programming for each platform. Developing cross-platform applications can be made more efficient by adopting this approach, as it reduces the amount of time and effort required. Flutter may be a relatively new language, but it still boasts a wealth of libraries that make coding easier and enhance the overall look and feel of the application. Recent statistics show that its fame is rapidly increasing. Flutter was identified as the most popular mobile language in 2020 by Google News.

Taking into account the figures and patterns, we opted for Flutter due to its increasing prominence in the realm of programming. Adopting innovative technologies improves our expertise and equips us for technical positions, given the probability that numerous companies will utilize Flutter for their mobile development assignments. Our dedication to keeping abreast of industry developments and trends is reflected in our adoption and incorporation of new technologies as they emerge.

- **Programming Languages Dart,** an object-oriented programming language developed by Google, is the language used by Flutter for its client-side programming. We find the language easy to learn and work with, as it is comparable to C++, Java, and JS, which we already have some familiarity with from our university education. Our dedication to keeping abreast of industry developments and trends is reflected in our adoption and incorporation of new technologies as they emerge. Before starting the project, there was a thorough investigation and examination conducted which led to this particular choice.
- **The Website**

We employed Flutter Web to transform the existing Flutter code into a responsive web page. By utilizing the capabilities of Flutter Web, we seamlessly adapted the code base to ensure optimal rendering and functionality across various web browsers and screen sizes. This allowed us to extend the reach of our application beyond mobile devices and provide a consistent and user-friendly experience on the web.

Furthermore, as part of our project, we designed and developed a simple web view page using HTML, CSS, and JavaScript.

7.2.2 Server Side

- Servers Design We implemented the client-server architecture to accommodate a large number of clients.’ Our scenario involves both the website and mobile application, both of which can access the Identical API.

- Packages

On the server side, Due to its many advantageous features, we chose PHP to meet our server-side requirements. Some of its great features are its easy-to-use learning curve and comprehensive manuals, along with its outstanding scalability and good performance. So we chose PHP instead of other options like Django or ASP.NET. Moreover, PHP is very flexible and will come in handy if we plan to build a mobile application with a native interaction platform in the future.[3] [4]

- Programming Languages we chose to utilize the PHP programming language on the server-side.

7.2.3 Version Control

Programmers and developers know that GitHub is a platform for hosting Git repositories, which has a graphical interface that allows team members to work together and monitor code modifications more conveniently.

7.2.4 IDEs and Code Editors

We made use of Visual Studio Code as a tool for code editing, taking advantage of its excellent capabilities through downloadable plugins that enhanced the development process’s adaptability. It enabled us to debug, format, complete, and refactor code, making programming easier and ensuring code correctness.

We utilized Android Studio in order to create for both Android and iOS, as it provided us with the essential capabilities. Nonetheless, we faced an obstacle when attempting to test distinct features of Android and iOS separately. Although we were able to test Android applications on our computers, we were not capable of conducting tests on iOS applications.

7.2.5 Server and API Testing

Regularly testing the server components is essential in assessing the behavior and functionality of the API when vital information is submitted, as widely acknowledged.

Thunder Client is a tool for software development that enables users to easily conduct trials of API requests. The tool allows users to input data and this data is then sent to a specific web server address, with interactive engagement options available. Thunder Client is frequently utilized for the purpose of receiving and displaying information, offering a flexible framework to accomplish these objectives.[?]

7.2.6 Visualization

To create database we use the Draw Io tool, a diagramming tool that can produce diagrams in different file formats, to generate correlations between database groupings.

7.3 Database Design

Our application needs a database that serves the mobile and web application to store user data to carry out the process of organizing the donation process. And for choosing the type of database we decided to use non-relational databases ,Because of the large number of requests and users.

MySQL was utilized. Users are able to connect by using separate clients that are included. Using SQL, the MySQL database can be accessed directly; however, it is more commonly used in combination with other tools.[5] using additional instruments to create applications that demand the capability of relational databases.

In the development of mobile applications, Firebase, a platform created by Google, serves as a non-relational database.[6] There is no requirement to design an API when utilizing Firebase. The infrastructure of Firebase includes the data store, server, and API. Receiving information at a quicker pace is possible because of establishing a Web Socket connection as opposed to an HTTP connection. using additional instruments to create applications that demand the capability of relational databases,We used it in our app to send push notifications.

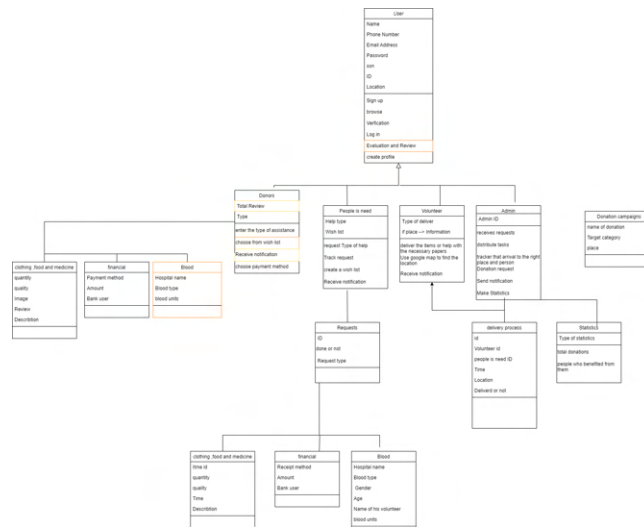


Figure 3: The UML diagram for the database.

7.4 System Features and Implementation

7.4.1 Login and Registration

The app starts with the on boarding interfaces that the user interacts with when the app is launched, the user is shown a set of motivational images to show the goals of the application and to support the donation process. we're taken to the login page. On this page, we can only log in if we have an account in the database. If we didn't create an account or entered the wrong password or email, we warn you what went wrong. There is also an create account sign up page where we enter the information which include name ,ssn,phone number ,email ,gender ,and password to be stored in the database with a verification code that is sent to the entered email to verify the information , as well as there is a forgot password page through which the email is entered to set a new password.

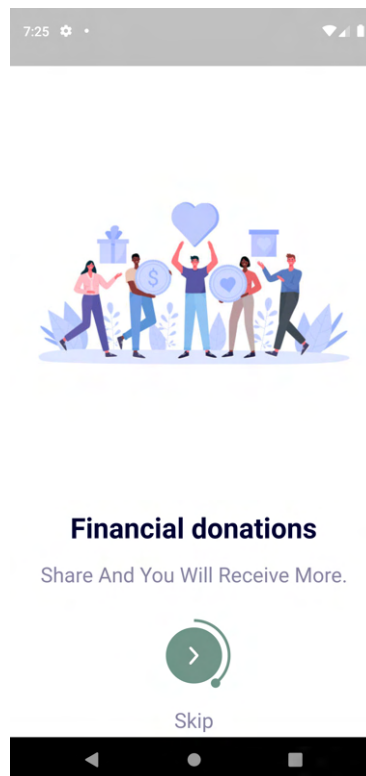


Figure 4: On boarding1 for the user.



Figure 5: On boarding2 for the user.

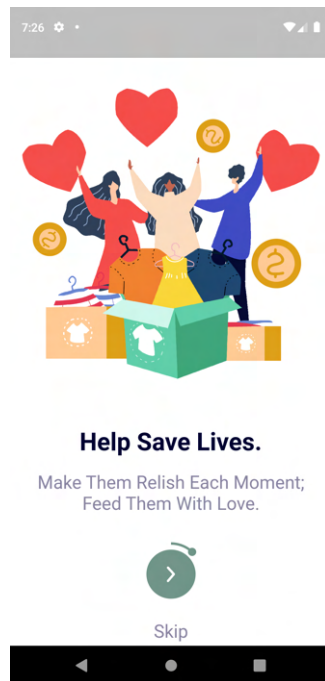
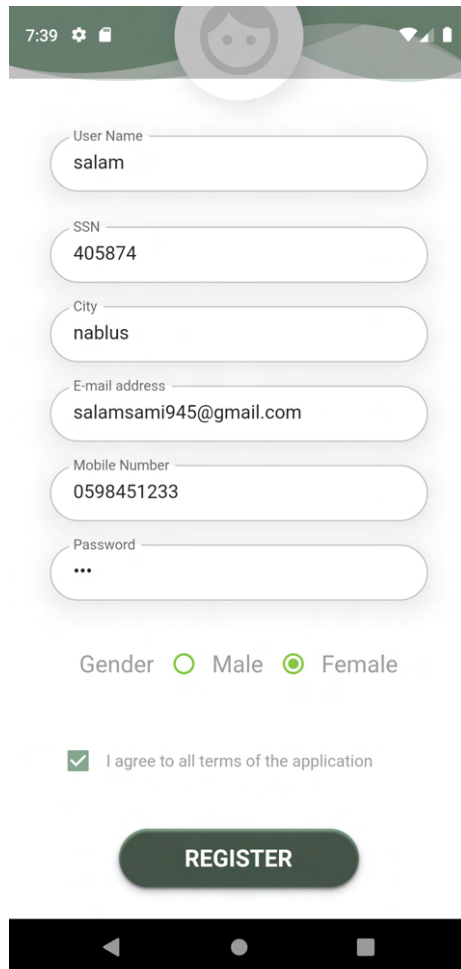


Figure 6: On boarding3 for the user.



The image shows a mobile application sign-up screen. At the top, there is a dark green header with a clock showing 7:39, a settings gear icon, a battery icon, a circular profile icon, and signal, Wi-Fi, and battery status icons. Below the header are several input fields, each with a label and a value: 'User Name' with 'salam', 'SSN' with '405874', 'City' with 'nablus', 'E-mail address' with 'salamsami945@gmail.com', 'Mobile Number' with '0598451233', and 'Password' with '...'. Below these fields is a 'Gender' section with two radio buttons: 'Male' (unselected) and 'Female' (selected). Underneath is a checked checkbox with the text 'I agree to all terms of the application'. At the bottom of the form is a dark green rounded rectangular button with the text 'REGISTER'. The entire screen is set against a light green background with a subtle leaf pattern. At the very bottom, there is a black Android navigation bar with back, home, and recent apps icons.

7:39

User Name
salam

SSN
405874

City
nablus

E-mail address
salamsami945@gmail.com

Mobile Number
0598451233

Password
...

Gender Male Female

I agree to all terms of the application

REGISTER

Figure 7: Sign-Up screen for new user.

7:38

User Name
salam

SSN
405874

City
nablus

E-mail address
salamsami945@gmail.com

Mobile Number
0598451233

Password
Please enter your password

Gender Male Female

I agree to all terms of the application

REGISTER

Figure 8: Sign-Up screen for new user with incomplete data.

5555
An-Najah National University | Nablus -
Palestine | P.O. Box 7

Figure 9: Verify registration by sending the code to the user email.

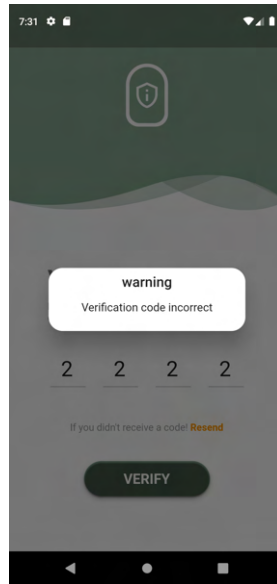


Figure 10: Verify code with Wrong code.

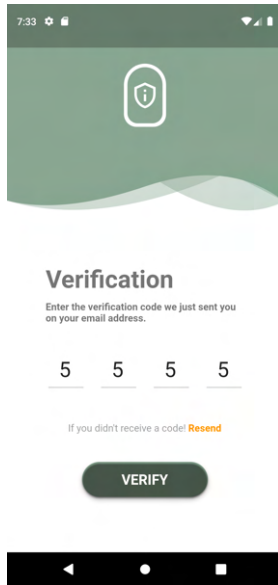


Figure 11: Verify code .

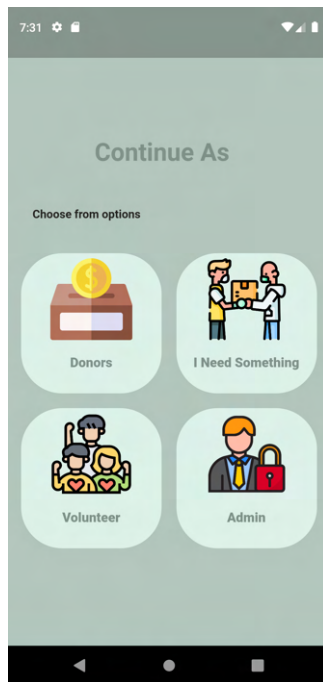


Figure 12: Choose the type of user.

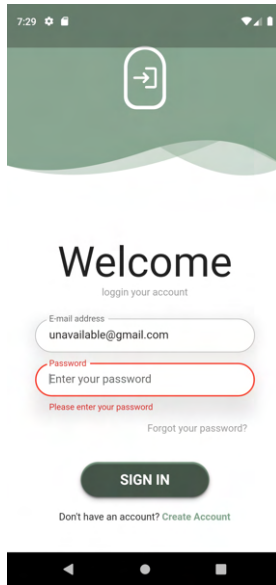


Figure 13: Login with incomplete data.

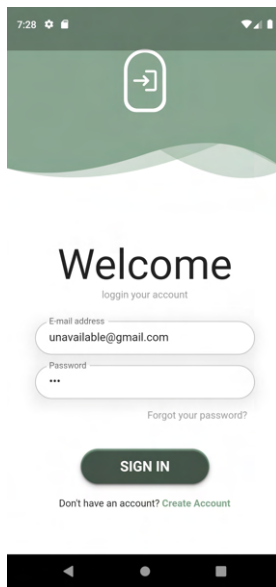


Figure 14: Login with wrong email or password.

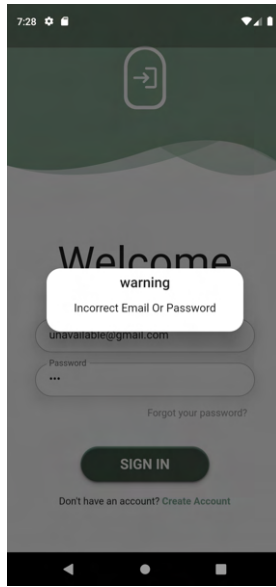


Figure 15: Alert message.

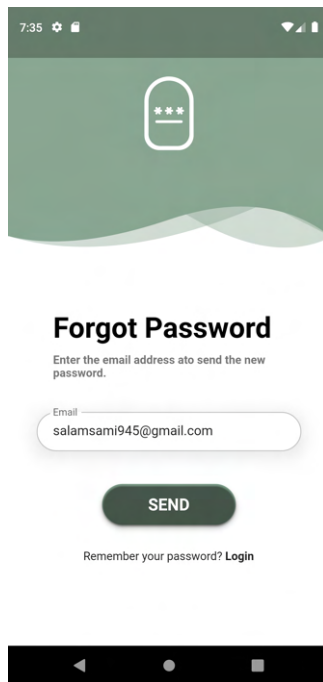


Figure 16: Forget Password .

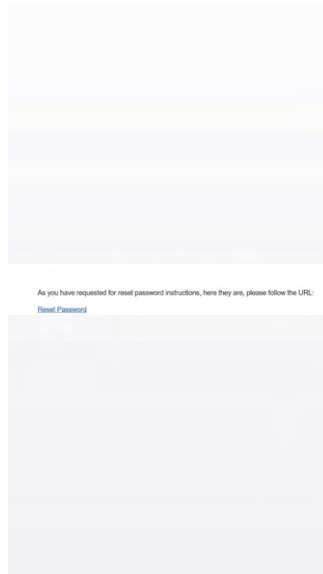


Figure 17: Reset Password .

7.4.2 Donor feature

Now we will start with the first type of user, the donor, we entered his email and password to move to the main page of the donors, during which the types that the donor can donate appear, where there is a donation of money, medicine, clothes, and food, also the donation campaign button appears in it to take us to its campaigns page .

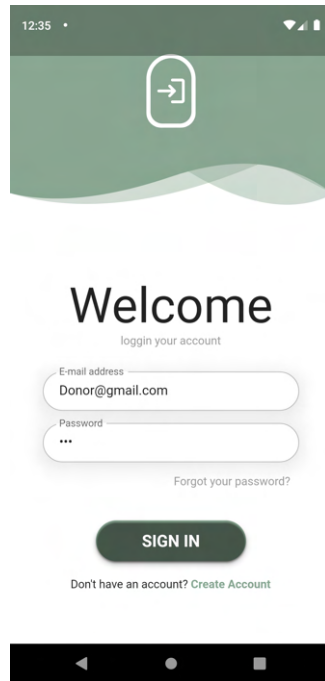


Figure 18: Log in as a donor.

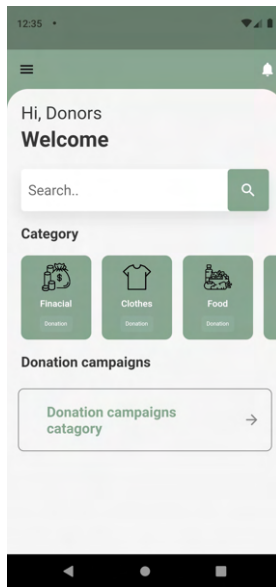


Figure 19: Donor Page .

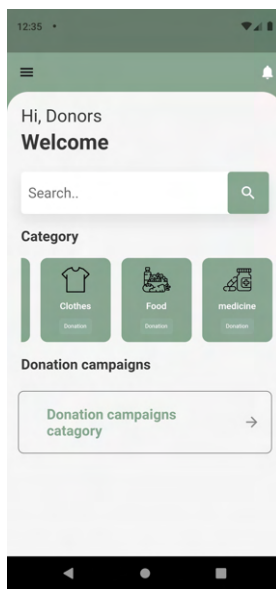


Figure 20: Donor page continue .

When the donor chooses to donate money, the donor will be transferred to the money donation page, through which he will enter the amount of money he wants to donate in addition to choosing the payment method, as there are three methods, through the visa, and when choosing it, the donor will be asked to enter his own visa, or through the bank , through the dialog message, the bank account will be shown to him, finally by paying directly, as it appears to the donor through the dialog message of the location from which it is received.

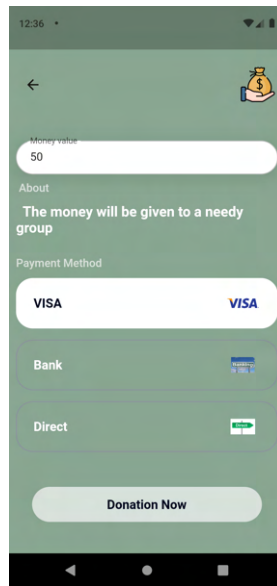


Figure 21: Donate using visa option.

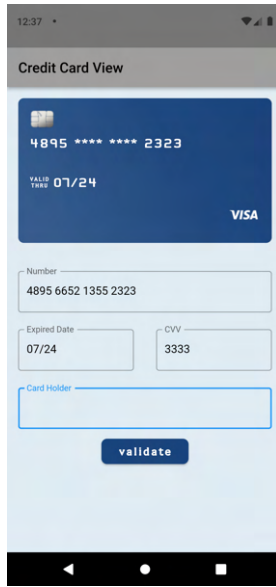


Figure 22: Visa information.

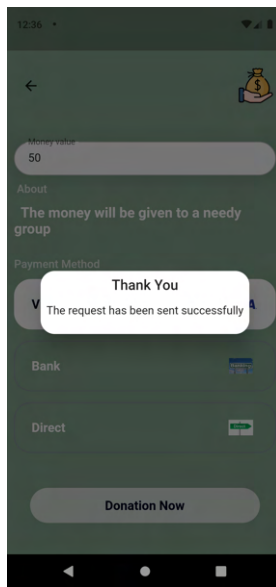


Figure 23: Dialog message (visa) .

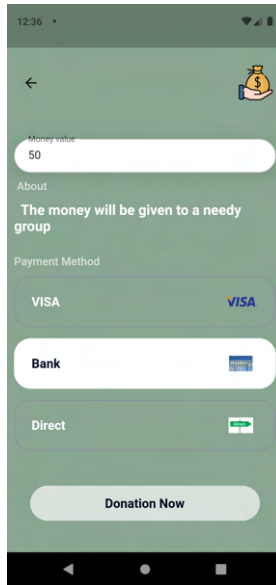


Figure 24: Donate using bank option .

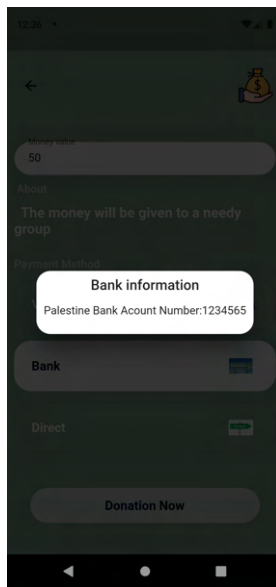


Figure 25: Dialog message (bank) .

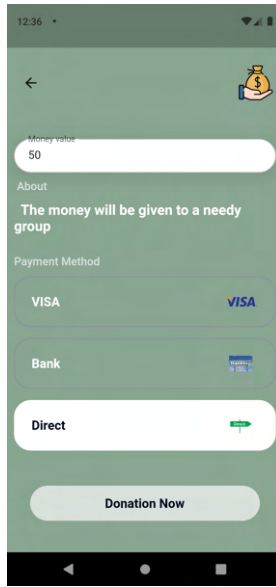


Figure 26: Donate using direct option .

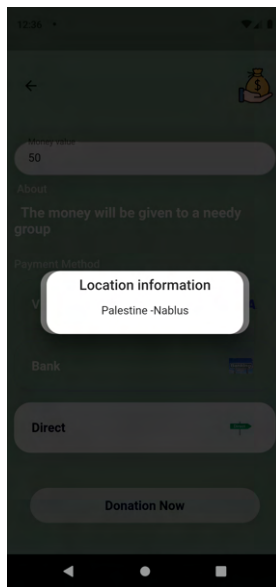


Figure 27: Dialog message (direct) .

When the donor chooses to donate food, the donor will transfer it to its page to enter information, description, type of food, quantity, and also attach a picture of it. When choosing to donate clothes, the donor will enter the information, type of clothes, size and quantity, and also attach a photo.

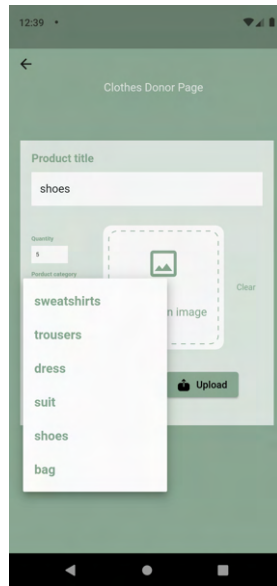


Figure 28: Donate clothes.

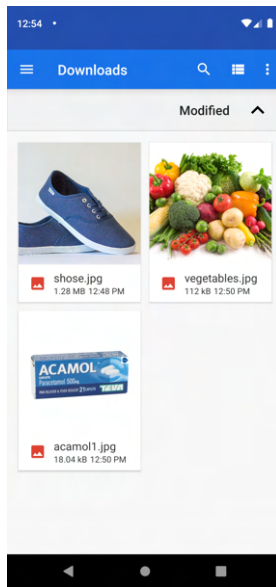


Figure 29: Attach a photo.

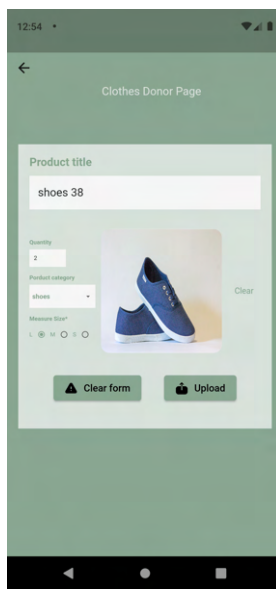


Figure 30: Send Request .

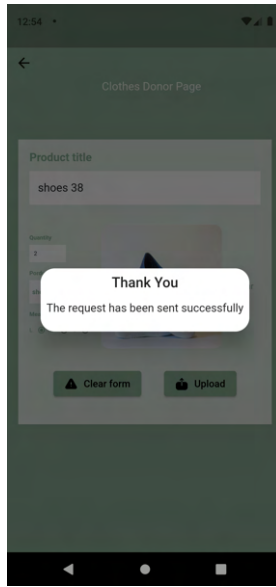


Figure 31: Dialog message (clothes) .

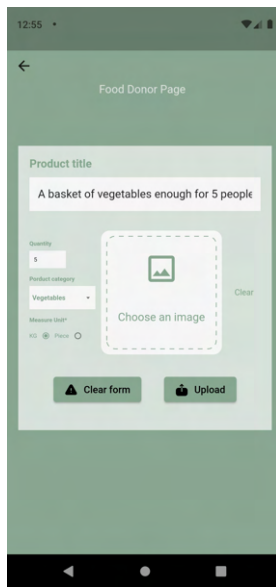


Figure 32: Donate food .

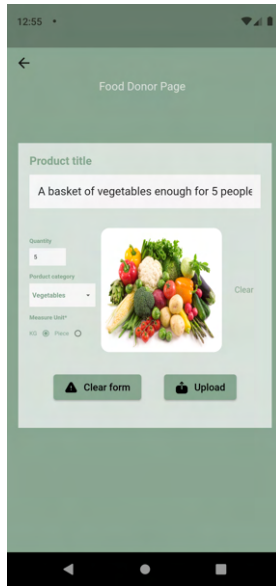


Figure 33: Send Request (food).

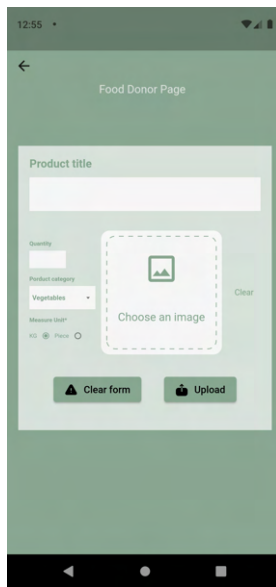


Figure 34: Clear form .

Finally, when donating the medicine, the donor will enter the medicine's information, the type and quantity of the medicine, and whether it is a liquid or a pill. When the donor confirms that he wants to donate, a Dialog message will show him that the donation has been confirmed, in addition to storing his donation in the data base.

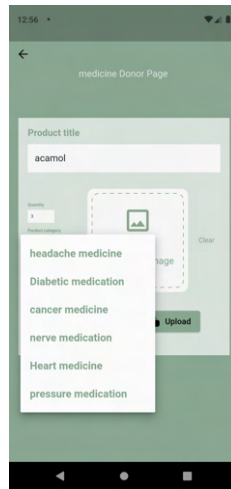


Figure 35: Donate medicine .

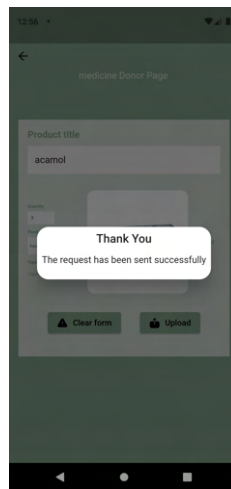


Figure 36: Dialog message (medicine).

The donation campaigns page, it shows the types of donation campaigns, and the campaigns available for each type. When clicking on the donation campaign, a description of the donation campaign will appear, what is the goal of the campaign, and how much has been raised, and the user can donate through it directly.

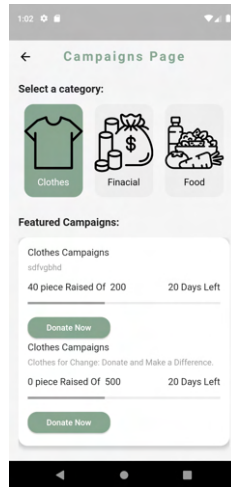


Figure 37: Clothes campaigns.

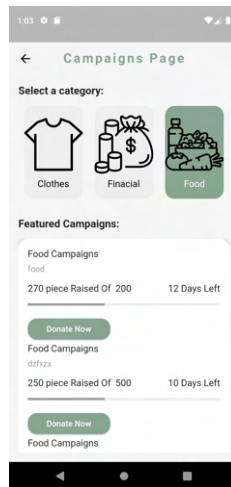


Figure 38: Food campaigns.

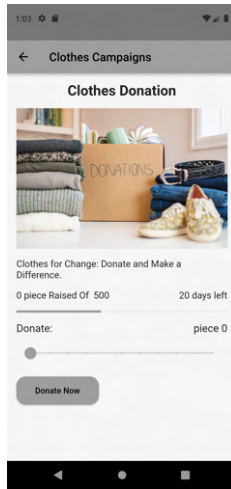


Figure 39: Clothes campaigns details .

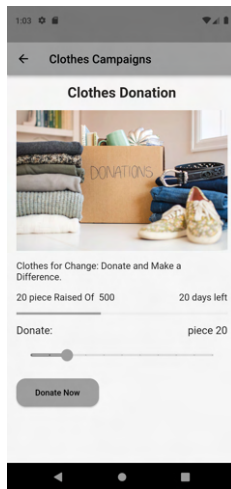


Figure 40: Clothes campaigns raise.

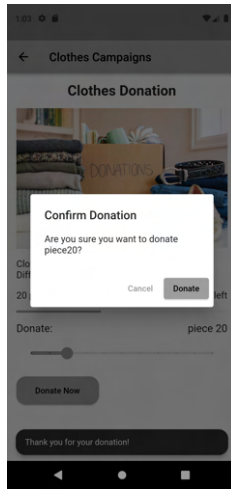


Figure 41: Clothes campaigns donate dialog.

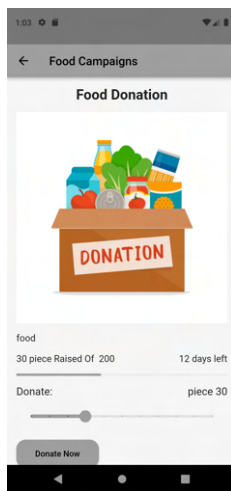


Figure 42: Food campaigns details.

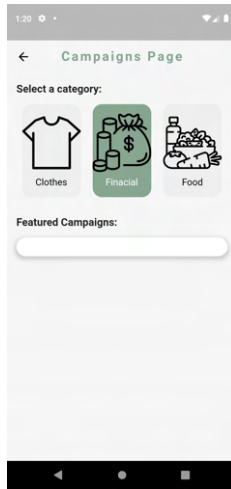


Figure 43: Financial campaigns but not available.

In addition, when the donor's request is confirmed, he will receive a notification from the admin confirming the receipt of the request, also when there is a need for blood, Notification reaches all users to request blood units with the details needed.

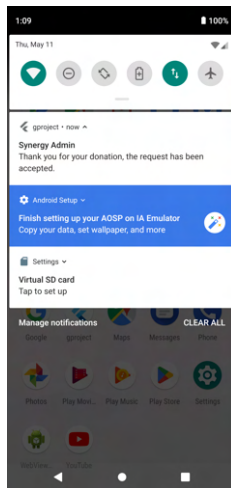


Figure 44: Request accepted notification .

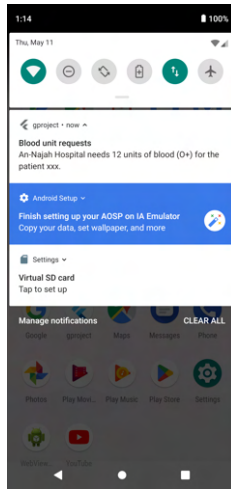


Figure 45: Blood notification .

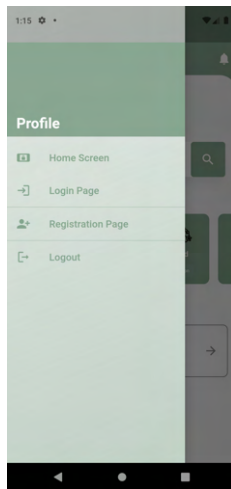


Figure 46: side menu for donor .

7.4.3 Person in need feature

Now we will talk about the second type of user, which is the needy. the needy enter his e-mail and his password to move to the main page of the needy. On this page, the types that the needy can request will appear. Does he need units of blood, clothes, food, medicine, or money for education or else . In addition, there is a wish list on this page, the things that the needy requested, It is either green if it is available and approved by the admin, or red if it has not been approved yet .

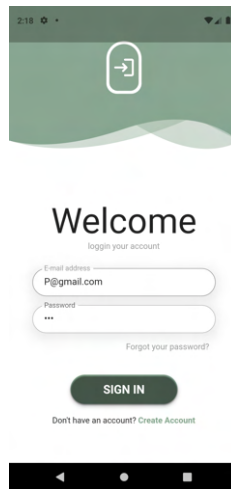


Figure 47: Log in as a needy .

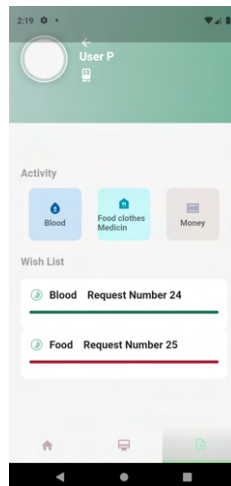


Figure 48: Needy home page .

When the user needs to request units of blood, the user will be asked to enter information, type of blood, how many units and a description of the request. As for when choosing food, medicine and clothes, he will be asked to enter information about the thing he needs and a description for it.

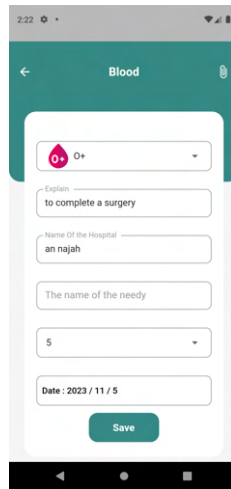


Figure 49: Blood request information .

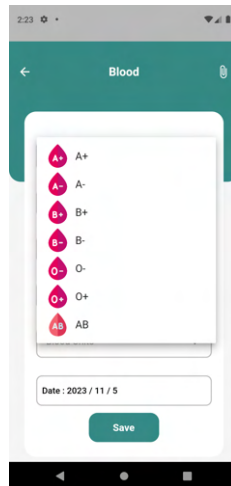


Figure 50: Types of blood .

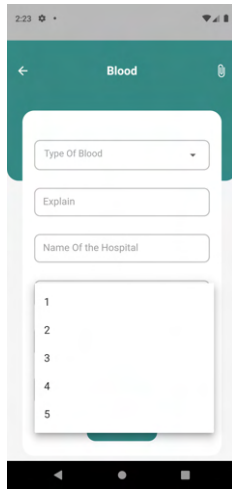


Figure 51: Units of blood .

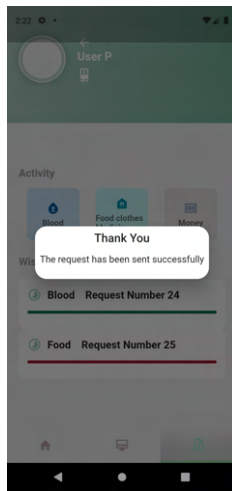


Figure 52: Dialog message (blood request) .

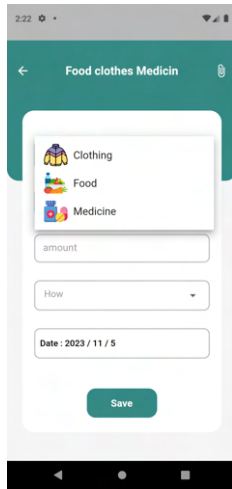


Figure 53: Food ,medicine and clothes request information .

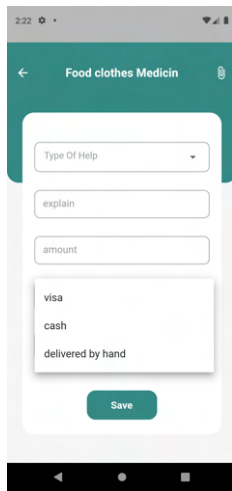


Figure 54: Receipt method .

Finally, asking for money or money for education, the user will be asked to enter information, the amount of money required and how to receive it, and he will also be asked to enter his visa information.

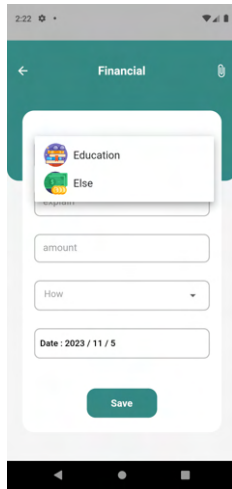


Figure 55: Financial request information .

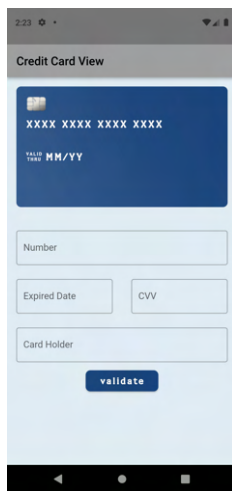


Figure 56: Visa Information.

In addition, there is a place to upload proof papers so that it attaches pictures and converts them to PDF, with an emphasis that these papers are seen only by the admin to approve the request to ensure privacy.

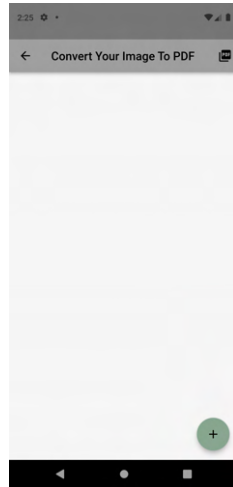


Figure 57: Upload PDF .

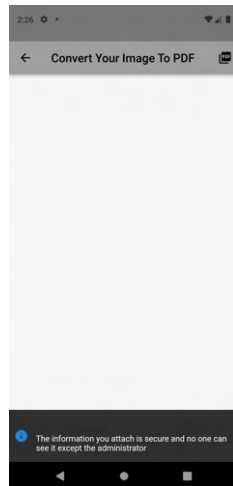


Figure 58: Ensure privacy of the pdf .

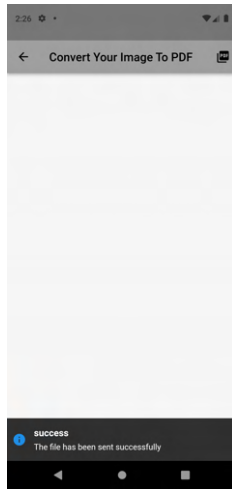


Figure 59: Send pdf.

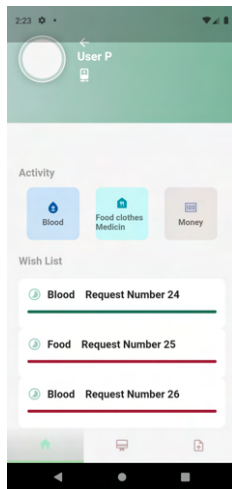


Figure 60: Needy home page after adding request.

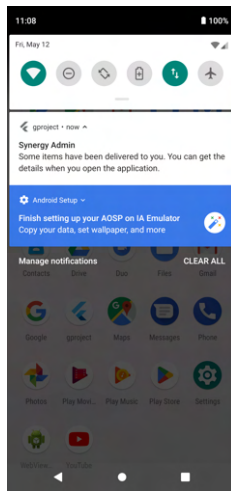


Figure 61: Notification when an item arrives.

7.4.4 Volunteer feature

Now we will talk about the third type of user which is the volunteer, the user enters his e-mail and his password to move to the volunteers homepage, from which the volunteer chooses the type of volunteering, does he want to volunteer to deliver orders or volunteer in a place to store items, when choosing delivery, the volunteer will see the requests he has to deliver sent by the admin.

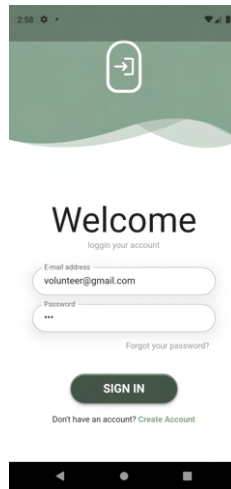


Figure 62: Log in as a volunteer .

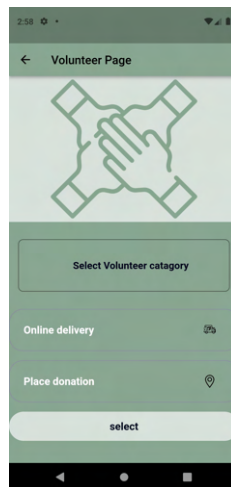


Figure 63: Volunteer home page.

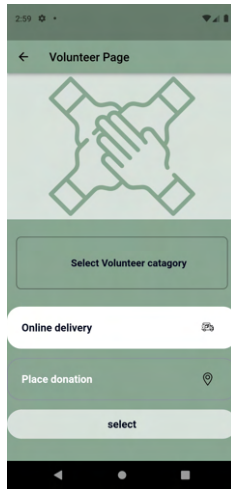


Figure 64: Order option.

When the user chooses the order option, the delivery details appear to him, the place to which it will be delivered, the name of the recipient, in addition to the presence of a map through which he can see the location.

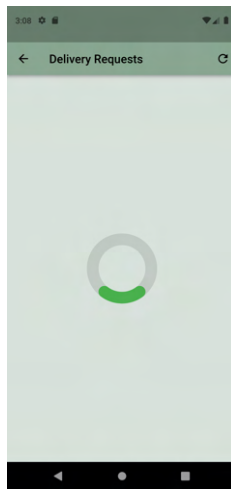


Figure 65: Order page with no requests .

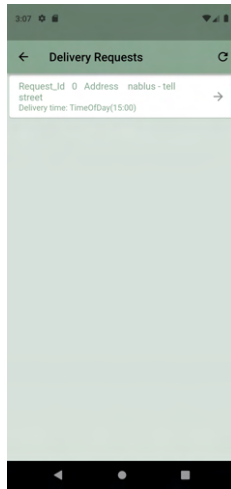


Figure 66: Order page with one request .

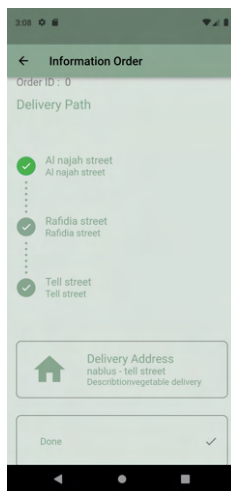


Figure 67: Delivery details .

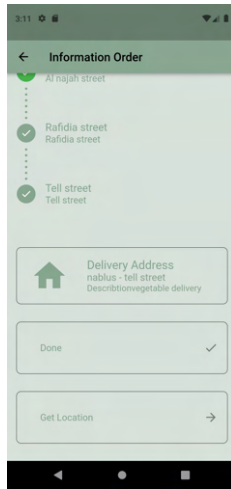


Figure 68: More delivery details .



Figure 69: Google map .

When the process is finished, the user can press Done to remove the request from the list, When choosing to donate a place, he will enter the place's information, its name, location, and description.

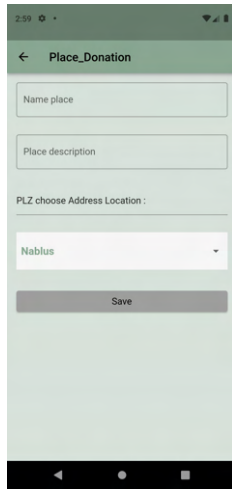


Figure 70: Place option .

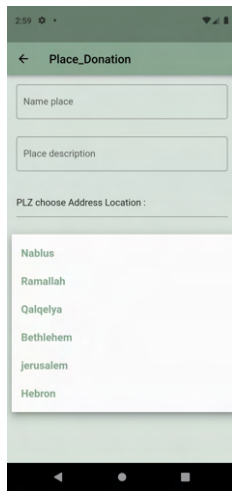


Figure 71: place information .

In addition, he will receive a notification from the admin when he gives him a delivery order, or a notification for requesting blood when blood units are needed.

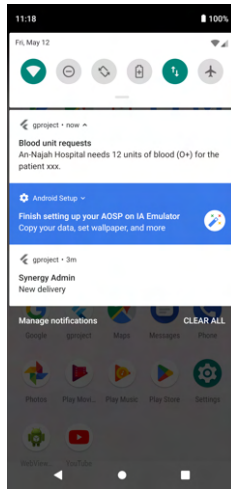


Figure 72: Volunteer notification .

7.4.5 Admin feature

Finally, we will talk about the last type of user, the admin, when the admin enters the email and the password, it will not transfer him directly to the admin page, he will be asked at first to enter a password for the admin, to transfer him after that to the admin home page.

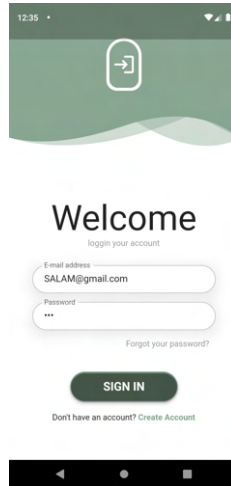


Figure 73: Log in as an admin .

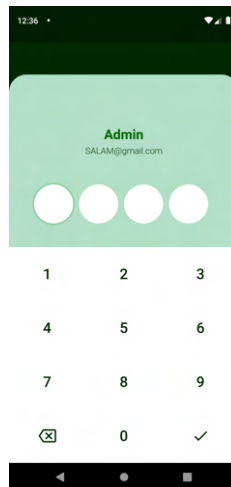


Figure 74: Password check .

home page, which shows the total amounts that have been donated from the beginning of The application, for each money, clothes, food, and medicine, also a bar chart showing the total quantities that have been collected. Also, the requests that were ordered recently in the last week will also appear, as the type and quantity of the request appears here, and whether it is complete or not.

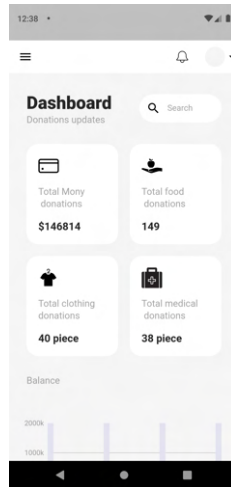


Figure 75: Home page for the admin .

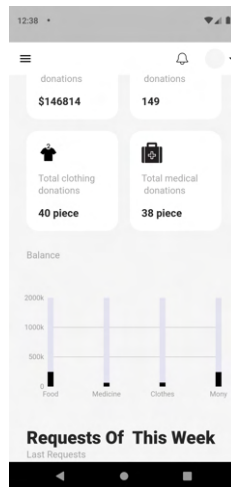


Figure 76: Bar chart .



Figure 77: Last week requests .

The side menu on this page shows several options: First, the users, where the admin can see all the users in the application, and the email, name, rating, and phone number appear to him.

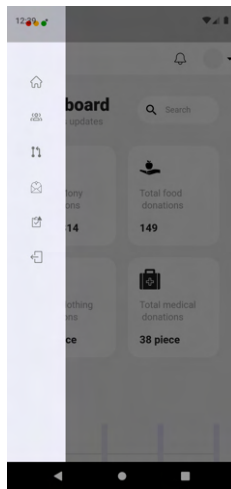


Figure 78: Admin side menu .

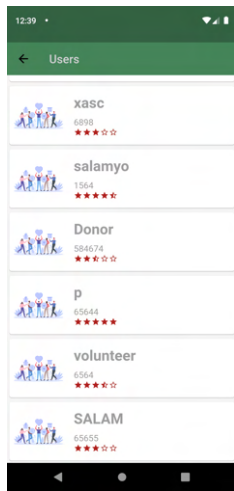


Figure 79: Users in admin side menu .

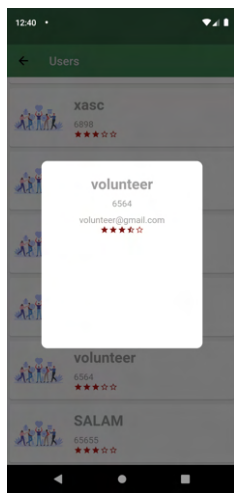


Figure 80: Users details .

Secondly, the request, where the admin shows all the requests that were requested, so that at each request there is a click to approve it.

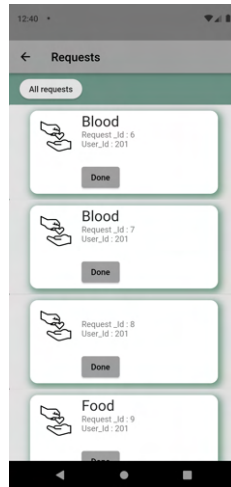


Figure 81: Requests details .

Third, donation campaigns, where the admin creates donation campaigns, enters the information about the campaign, the campaign type, describes it, the goal, the raised, and when the admin creates the campaign, it appears among the donors.

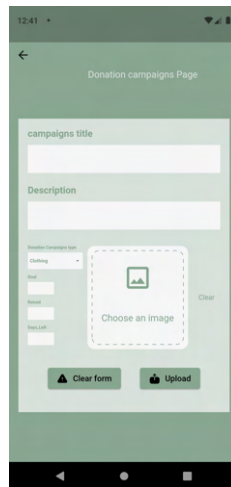


Figure 82: Add new campaign .

Finally, the Add Task, which is the page for adding a task to the Volunteer to deliver orders, where it enters the information about the order, the place of delivery, the time, the name of the recipient, in addition to choosing the Volunteer according to the nearest place, where the volunteer is chosen closest to the place of delivery, and when the admin confirms the task, it will appear to the volunteer On his order page.



Figure 83: Add Task .

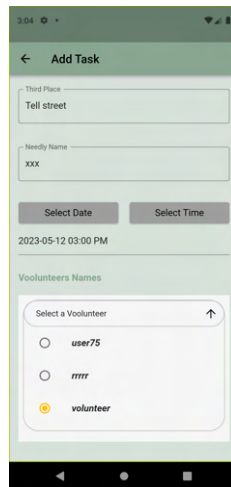


Figure 84: Add Task details .

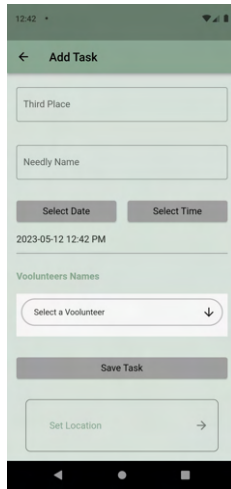


Figure 85: Add Task details and set location .

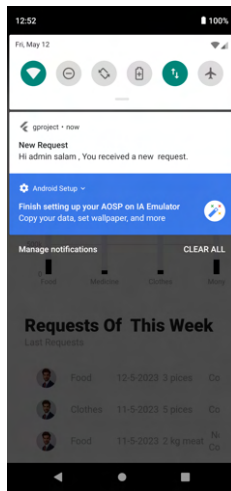


Figure 86: Notification for admin when receiving new request .

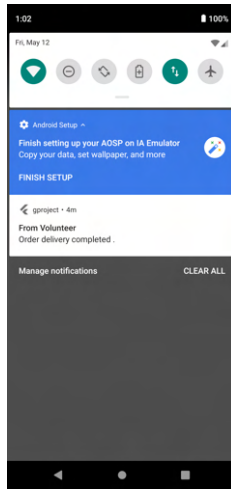


Figure 87: Notification for admin from a volunteer .

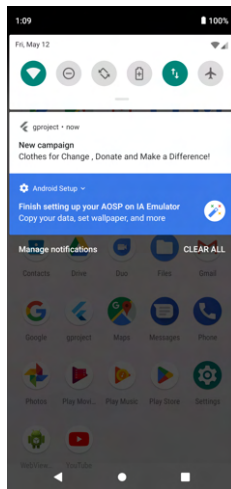


Figure 88: Notification for all users, new campaign .

7.4.6 Chat

There is also a chat feature in our application, through which any user can create a group to present new ideas for donation campaigns. When the group is created, a notification will reach all users, where the user can search for the group, join it and send messages. He can also leave the group.

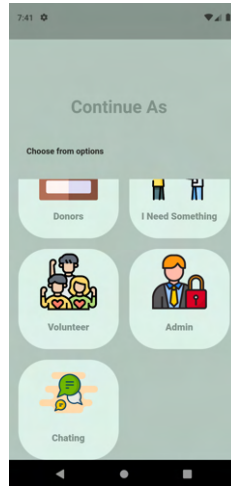


Figure 89: Enter the chat page .

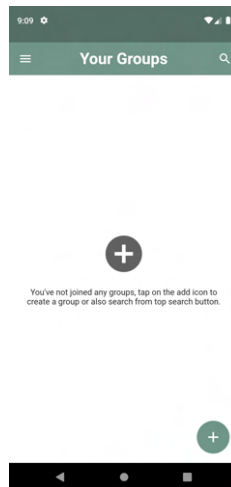


Figure 90: There are no groups yet .

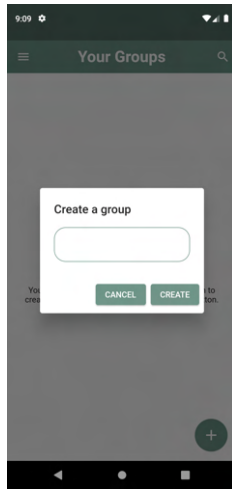


Figure 91: Create new group .

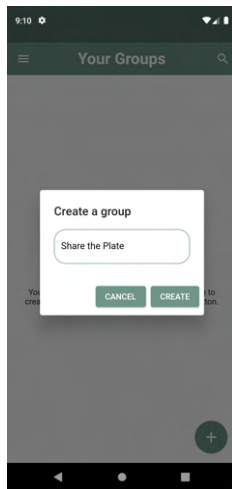


Figure 92: Determine the group name .



Figure 93: The group has been created alert message.

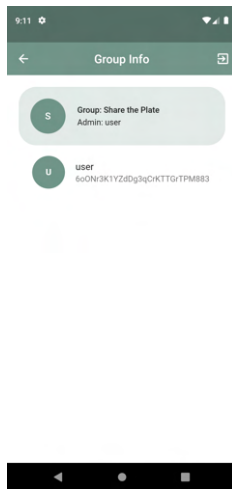


Figure 94: Group information page .

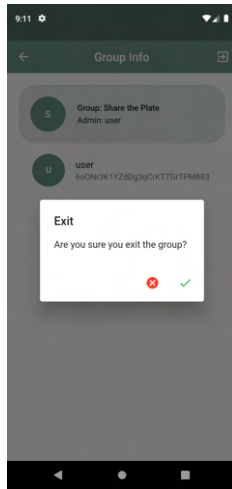


Figure 95: Left the group option .

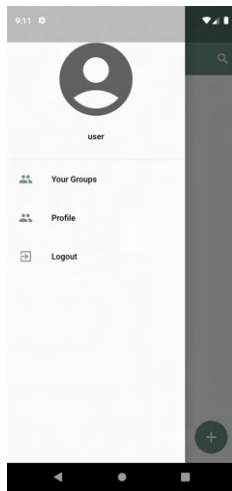


Figure 96: Side menu for the user.

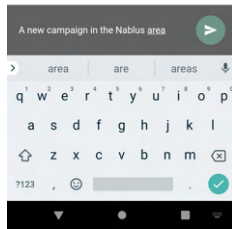


Figure 97: Start new message .

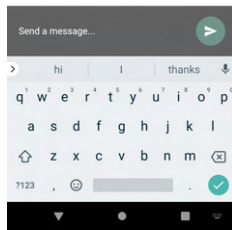


Figure 98: message View .

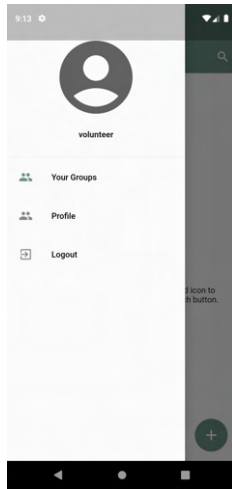


Figure 99: New user Side menu .

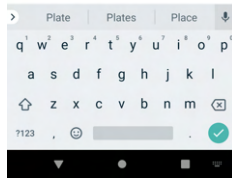
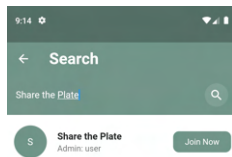


Figure 100: Search for a group by name .

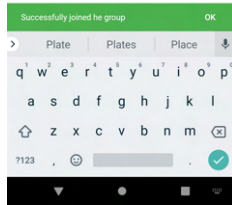
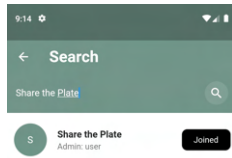


Figure 101: Join the group .

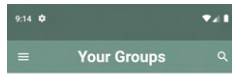


Figure 102: User groups page .

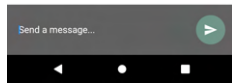


Figure 103: Send a message to the group .

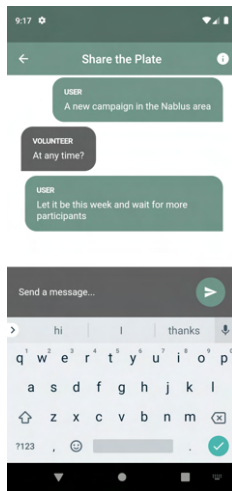


Figure 104: Preparing for a new campaign 1 .

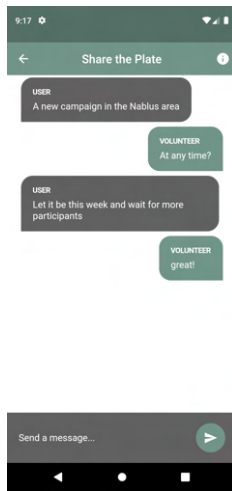


Figure 105: Preparing for a new campaign 2.

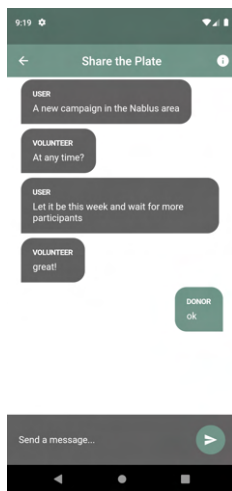


Figure 106: Third user login to the group .

7.4.7 Extra Feature

The app rating and feedback dialog, this dialog is visible to all users after they have finished using the app ,in order to benefit from their opinion and development on the application .

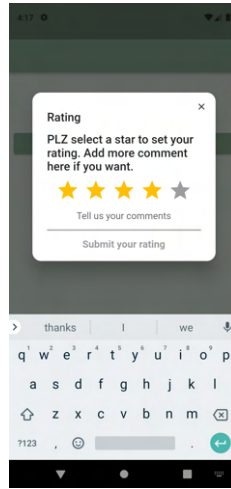


Figure 107: Rating and feedback dialog .

7.4.8 web pages

We have created a web page, which appears to everyone without the need to create an account, we showed general information about the application, so that the visitor can take an overview of the application and then download the mobile application, in addition to that we have created all mobile pages as a responsive website .

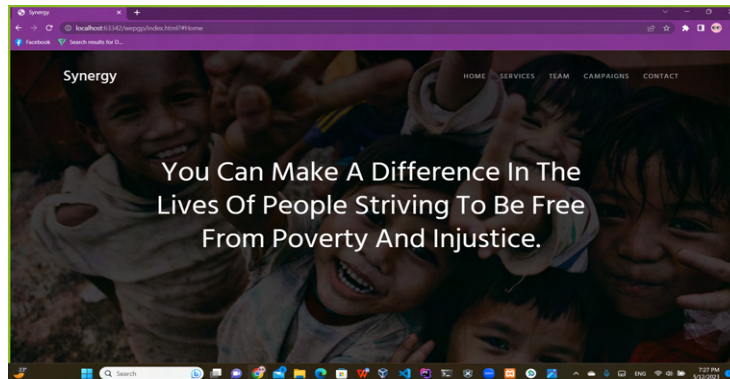


Figure 108: Web page view .

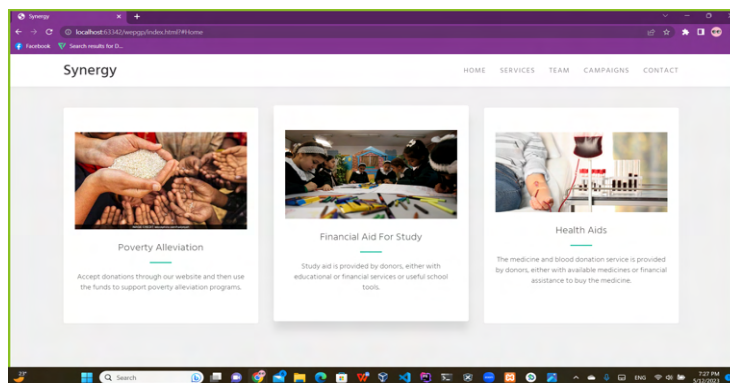


Figure 109: Services in the application .

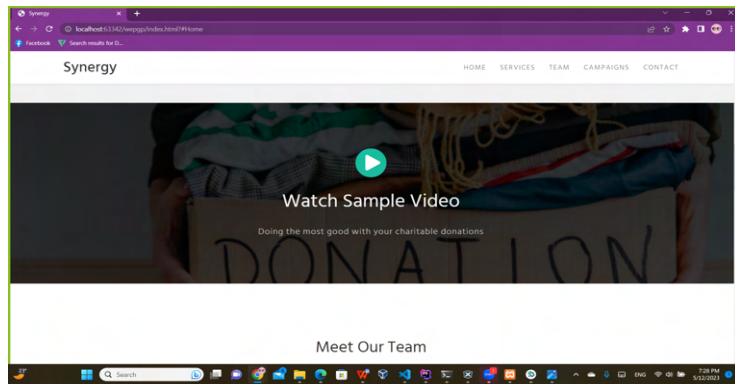


Figure 110: Simple video .

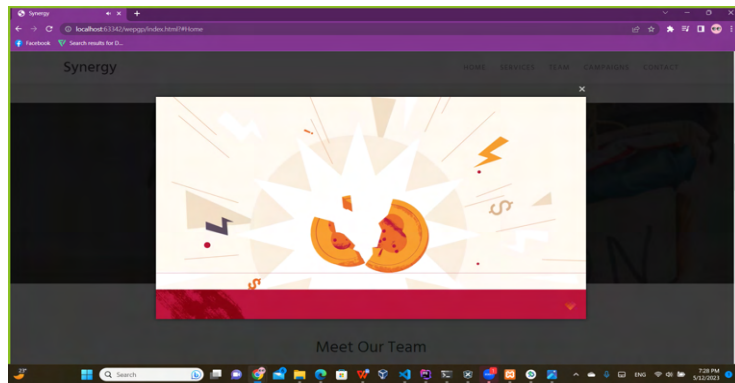


Figure 111: Video view .

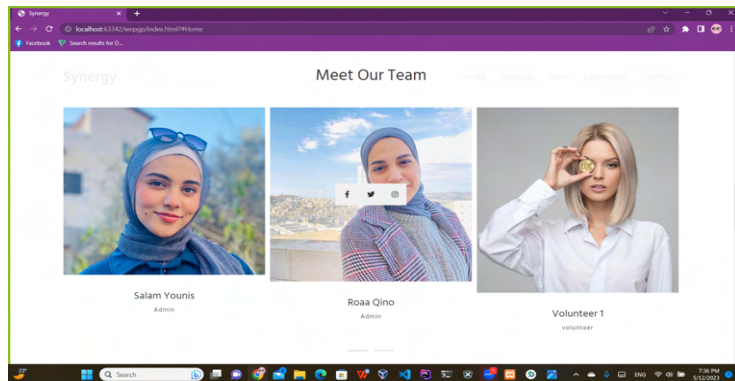


Figure 112: Our team members .

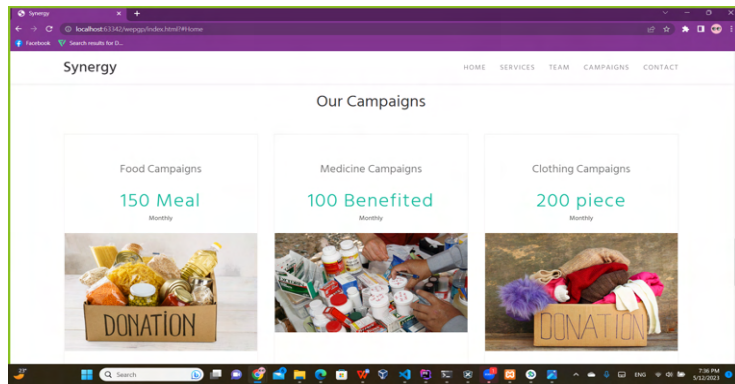


Figure 113: Our campaign .

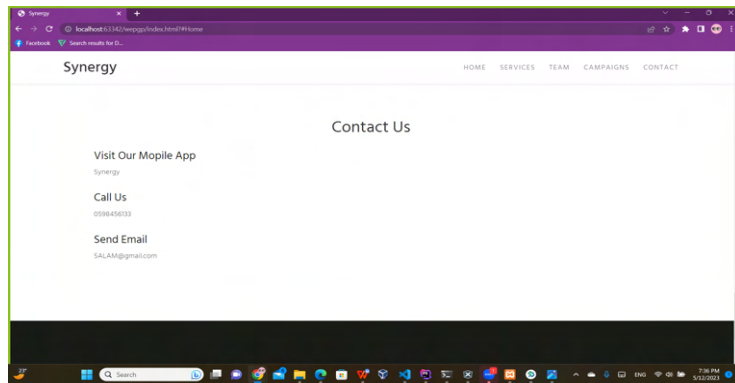


Figure 114: Contact information's .

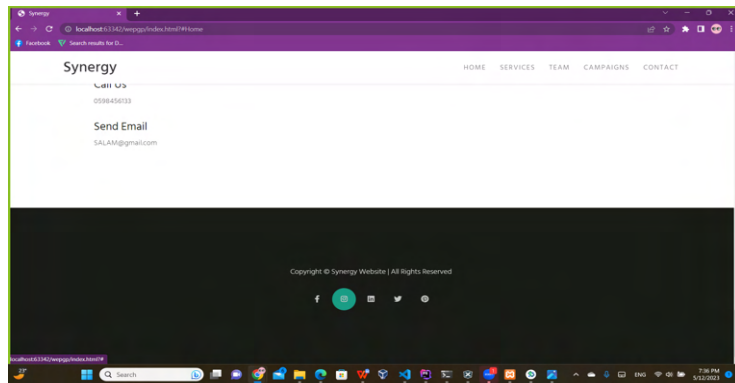


Figure 115: Web page footer .

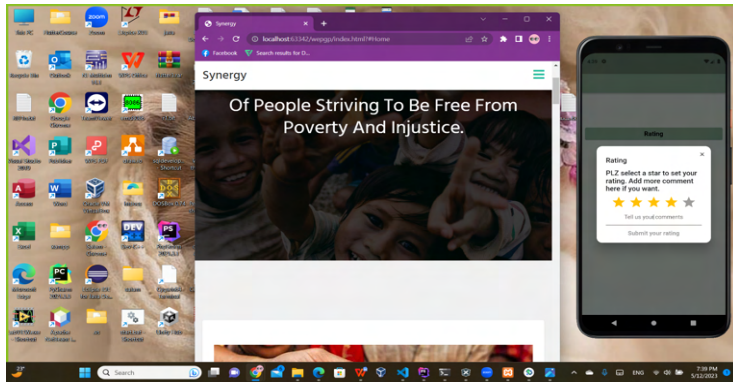


Figure 116: Responsive web page .

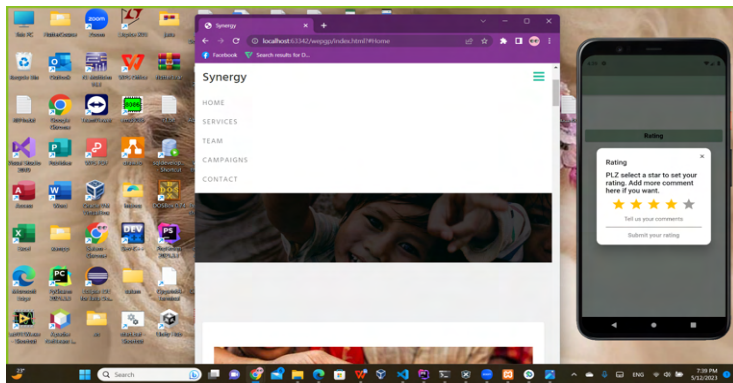


Figure 117: Responsive header page .

Also ,We have converted the filter application into a responsive web filter application , ensuring that it still includes all the features, functions, databases, and data.

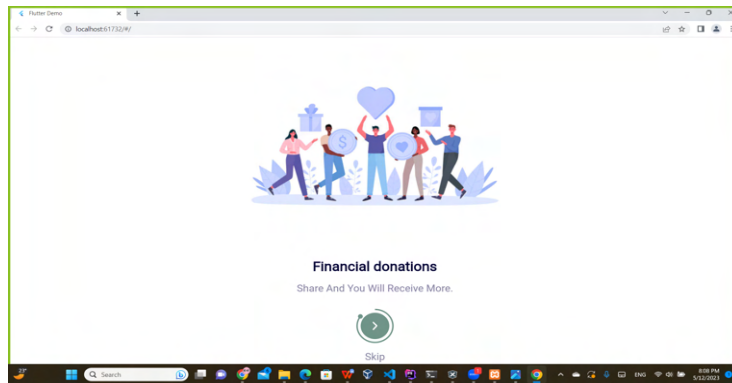


Figure 118: On boarding1 for the user web page .

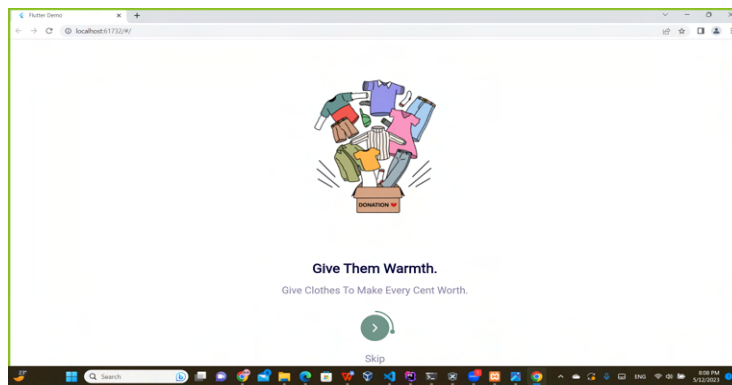


Figure 119: On boarding2 for the user web page .

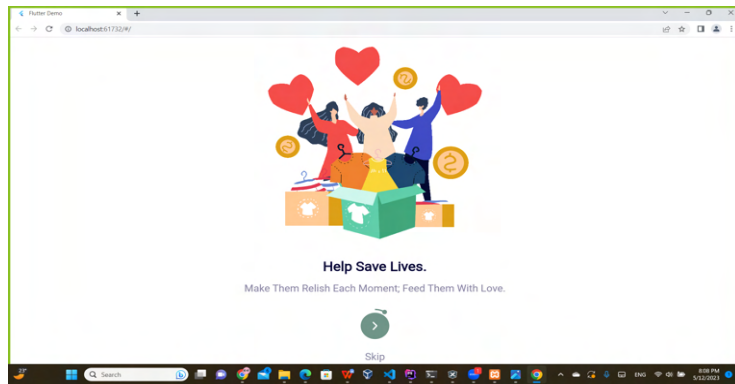


Figure 120: On boarding3 for the user web page .

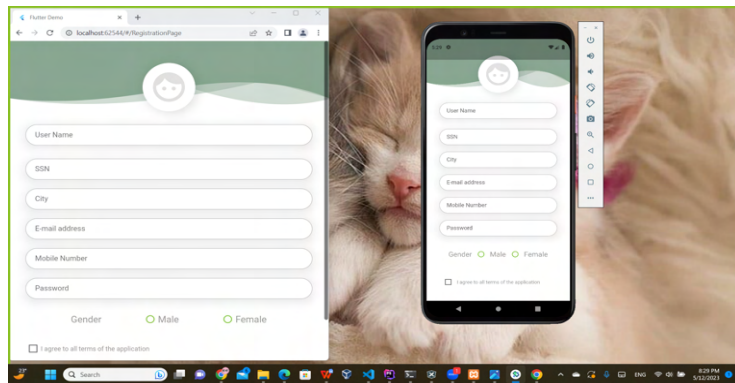


Figure 121: Sign up web page .

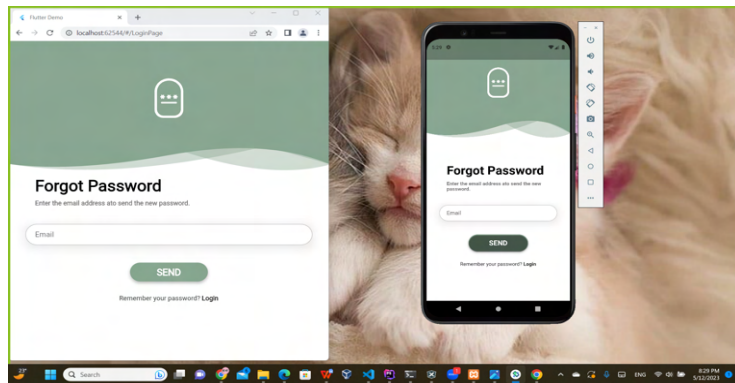


Figure 122: Forget password web page .

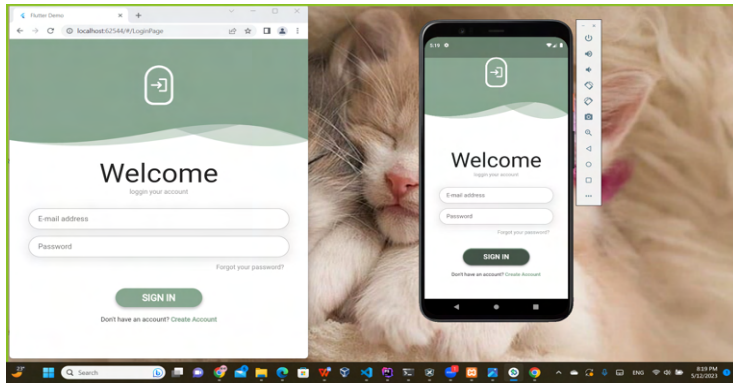


Figure 123: Log in web page .

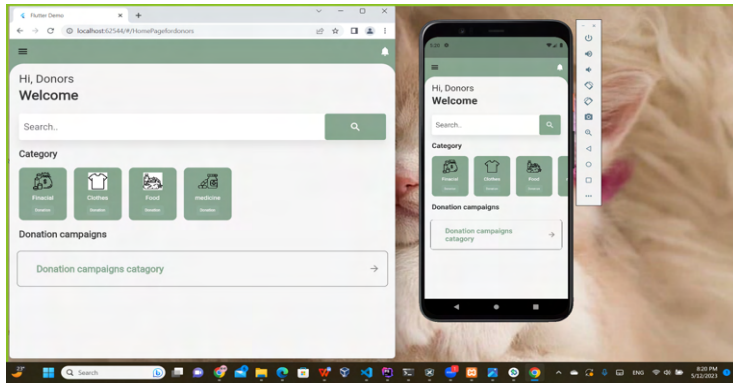


Figure 124: Sign in as a donor web page .

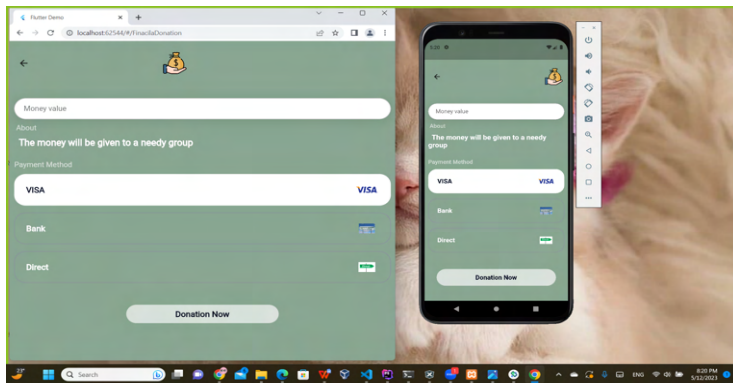


Figure 125: Donate using visa option web page .

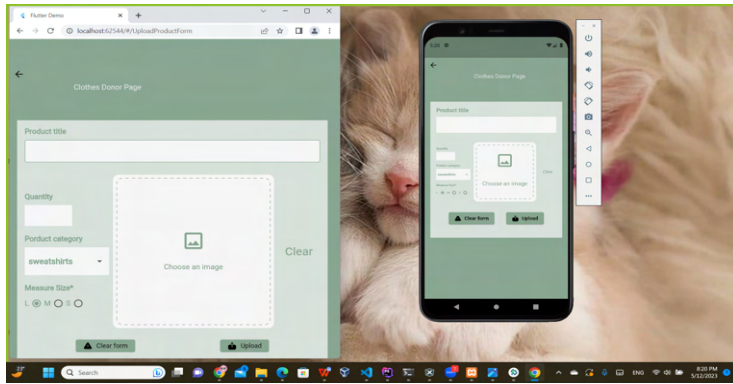


Figure 126: Donate clothes web page.

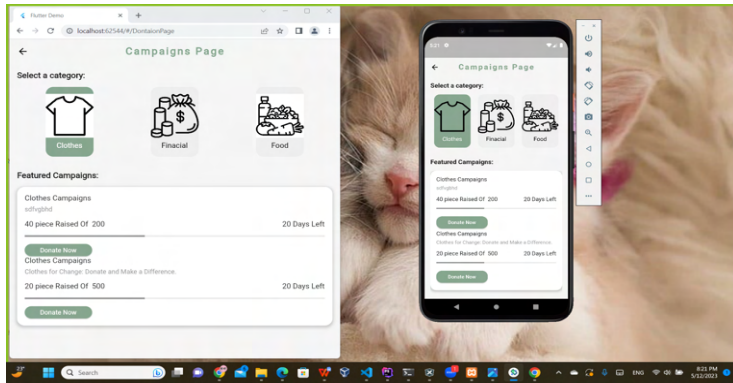


Figure 127: Clothes campaigns web page .

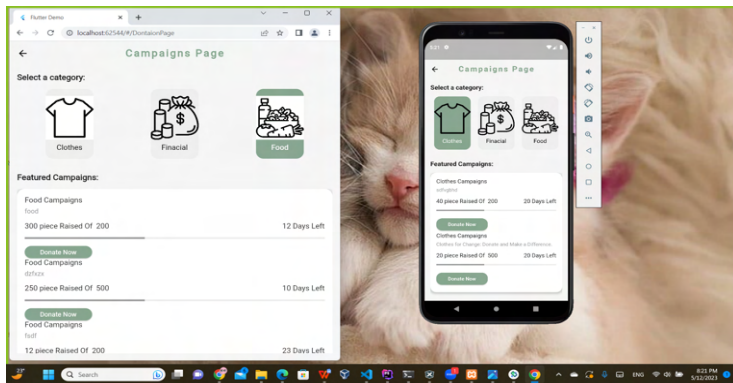


Figure 128: Food campaigns web page .

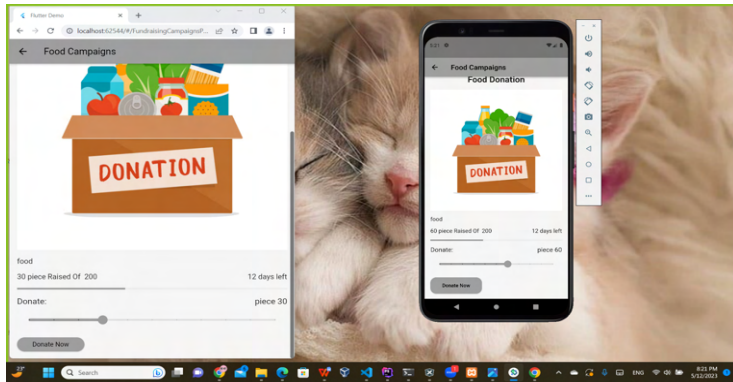


Figure 129: Food campaigns details web page .

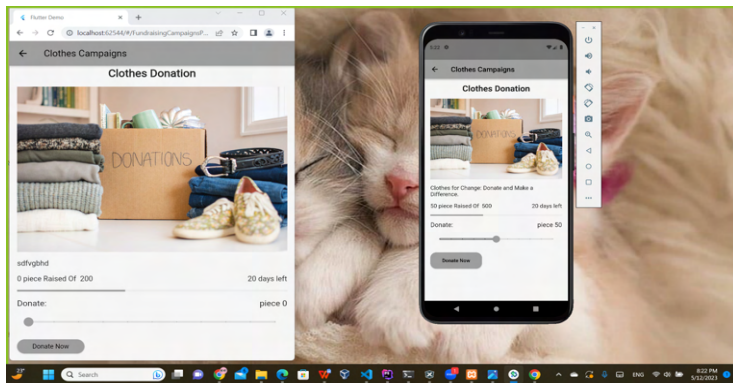


Figure 130: Clothes campaigns details web page .

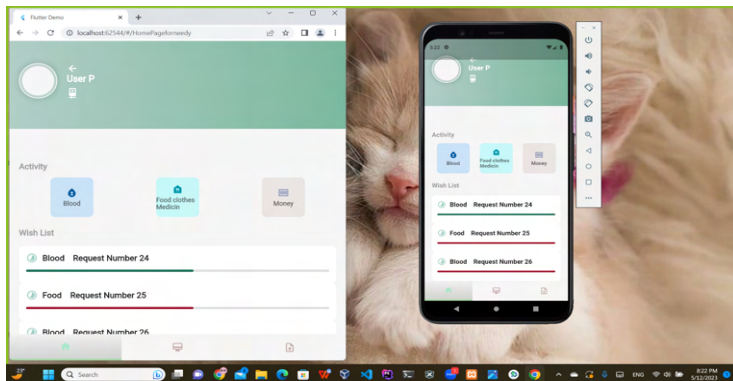


Figure 131: Needy web home page .

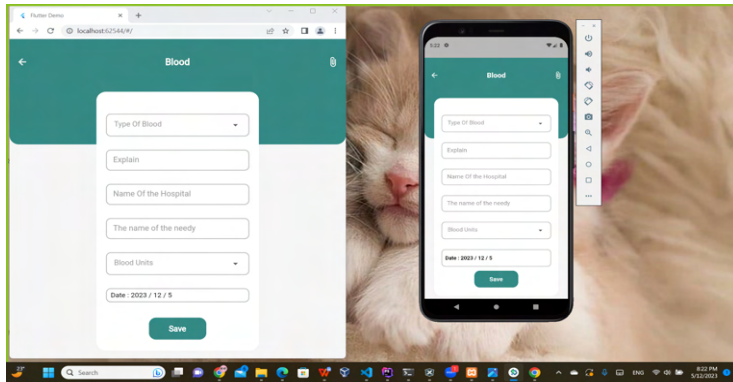


Figure 132: Blood request information web page .

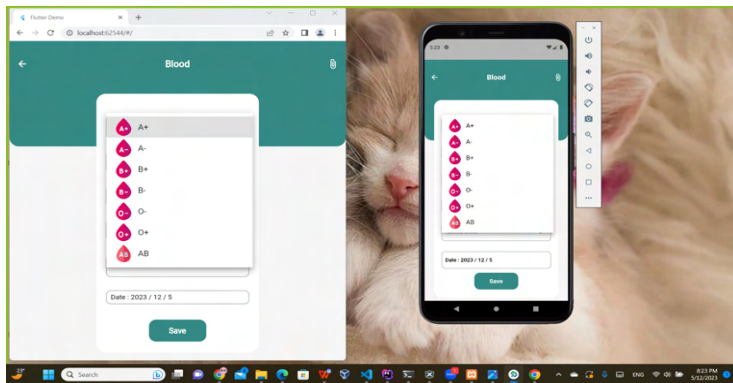


Figure 133: Blood request details web page .

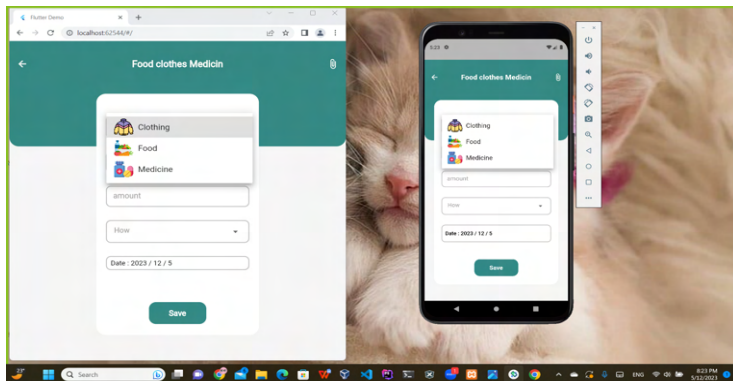


Figure 134: Food request details web page .

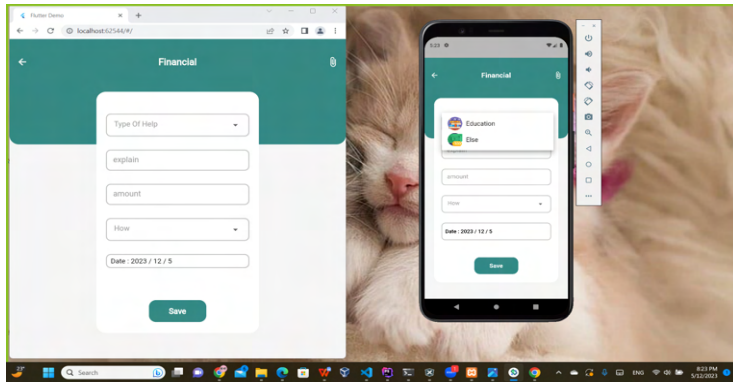


Figure 135: Financial request details web page.

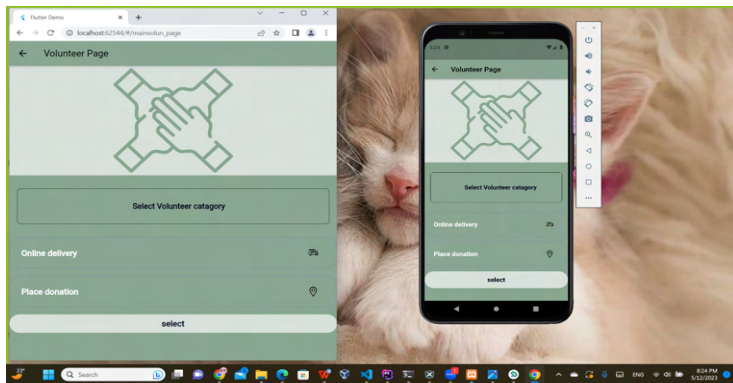


Figure 136: Volunteer web home page .

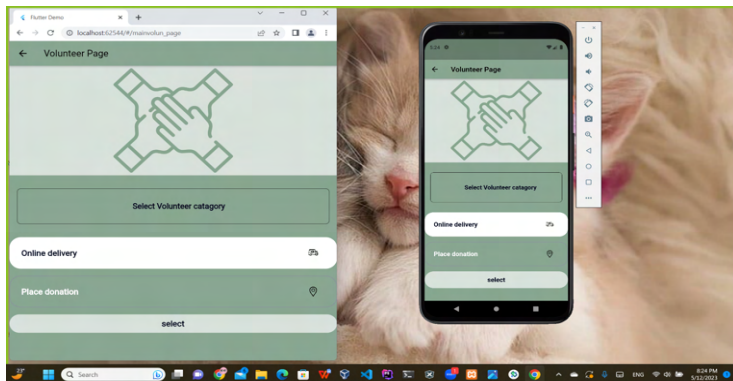


Figure 137: Order option web page .

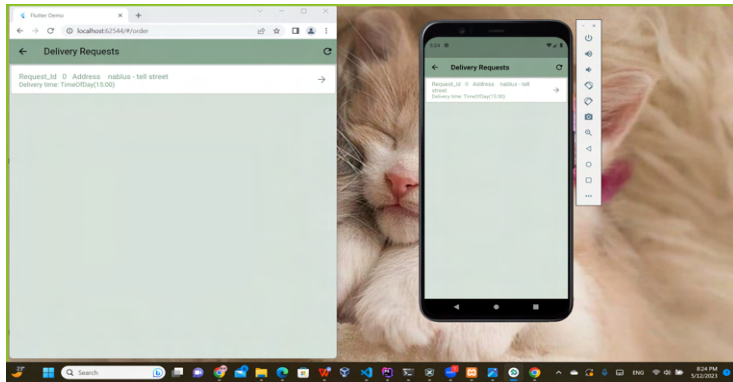


Figure 138: Orders web page with one request .

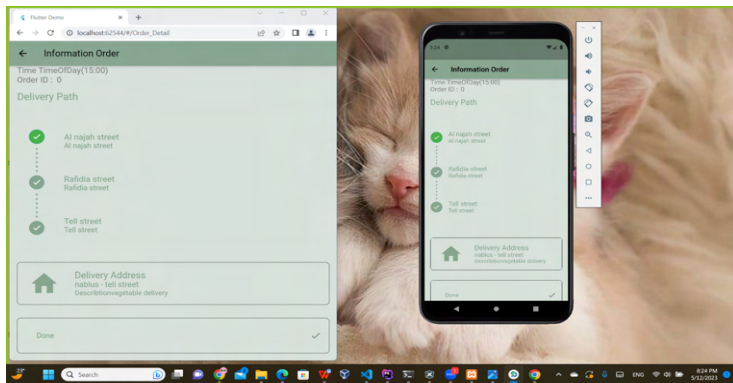


Figure 139: Delivery details web page .

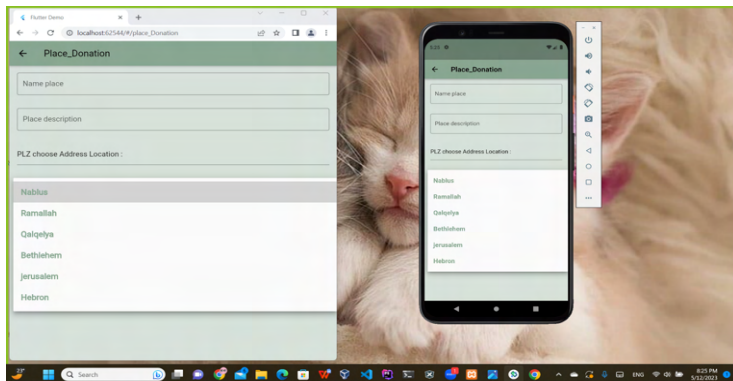


Figure 140: place information web page .

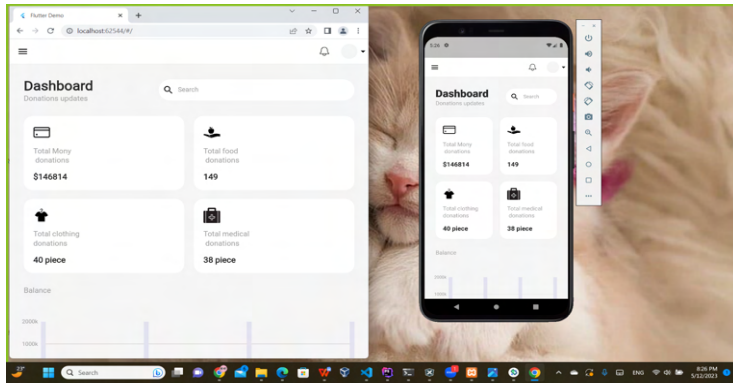


Figure 141: Home web page for the admin .

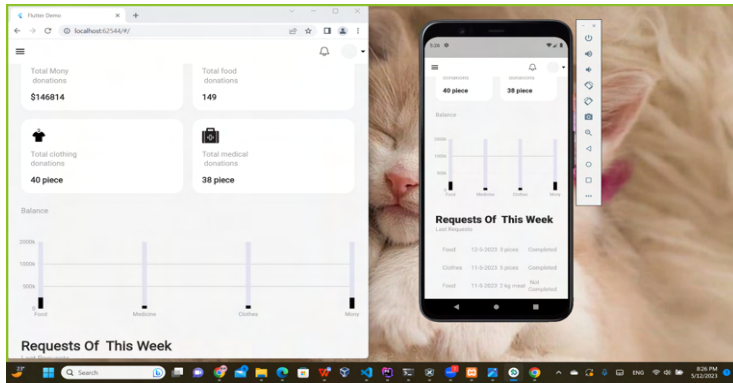


Figure 142: Bar chart web page .

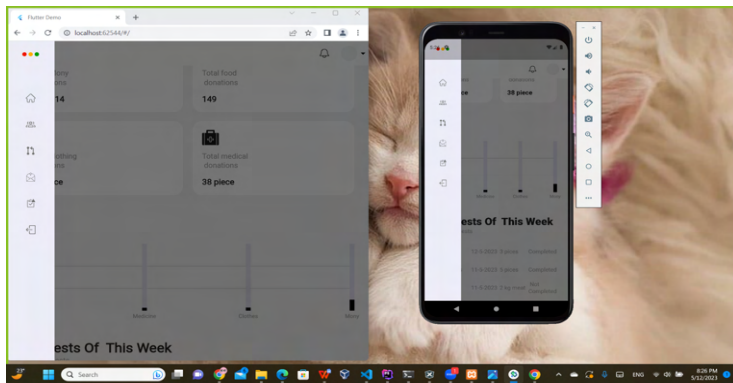


Figure 143: Admin side menu web page .

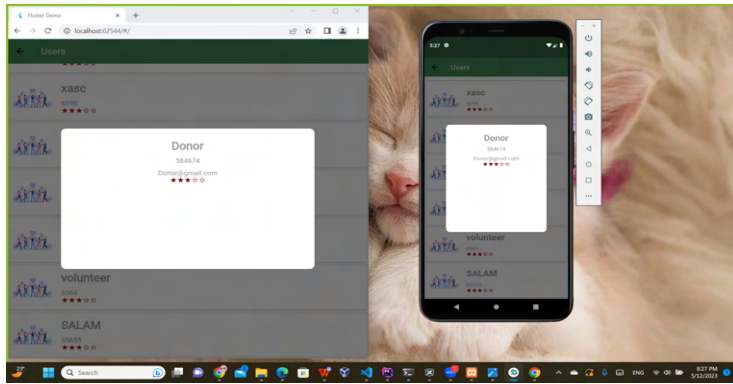


Figure 144: Users information web page .

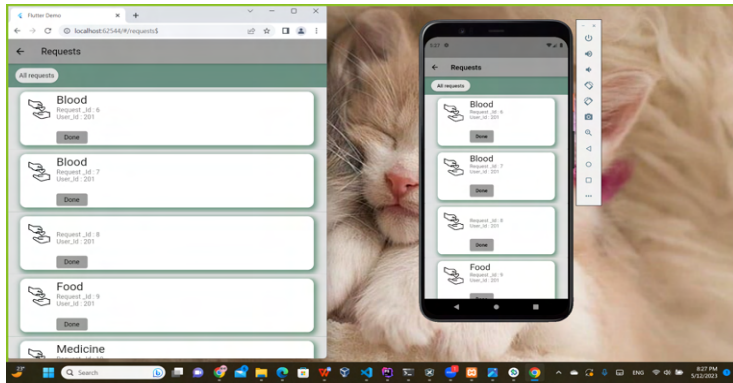


Figure 145: Requests information web page .

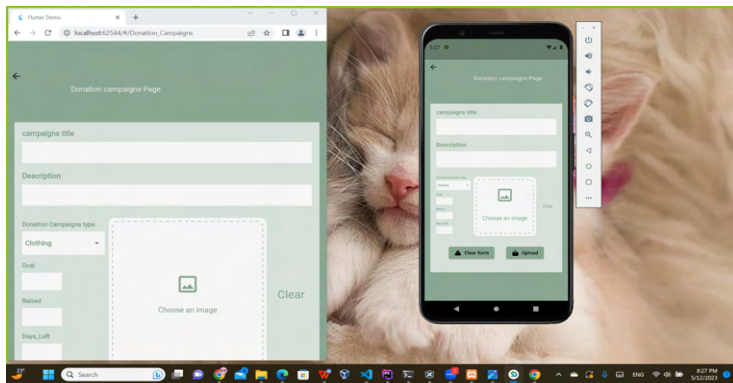


Figure 146: Create New campaign web page .

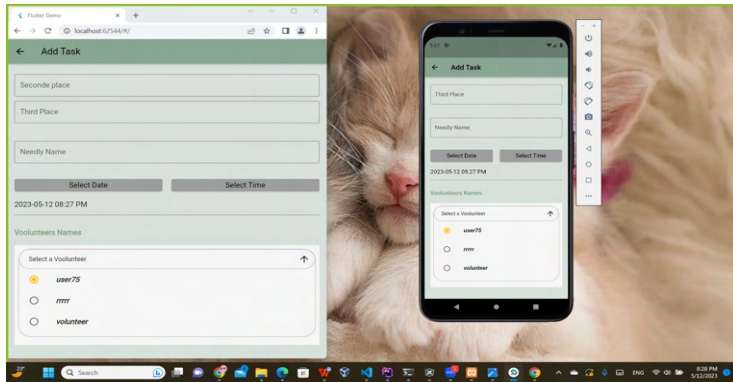


Figure 147: Add Task details and set location web page .

8 Result and Discussion:

The Synergy app is a flutter mobile application that streamlines the donation process, improving ways for those in need to benefit from donations, as well as benefit donation service volunteers.

In this project, we gained great experience and new skills, we became able to build large and integrated applications, in this project we created an application that serves all groups, and aims to encourage people to donate and do good deeds with others, and reduces the needy's sense of embarrassment in asking for help.

9 Conclusion and recommendations:

9.1 Conclusion

We gained valuable skills in the following areas upon finishing this project:

- Creating a mobile application that can work on multiple platforms utilizing Flutter and the Dart programming language.
- We worked together with a range of Flutter packages to effectively carry out our project.
- Creating the back-end by utilizing PHP.
- Engaging in map-related tasks and developing an enhanced comprehension of Google Maps as well as open-source map technologies.
- Managing databases that do not rely on relations, like Firebase.
- Using Git and GitHub to manage versions and facilitate collaborative development.

9.2 Recommendations

The field of mobile app development is deemed crucial in computer science and engineering programs, making it a subject that demands more focus because of its essential contribution to worldwide progress. The advantages it provides are not limited to just students but also have a positive impact on the larger society. Students can overcome potential challenges and save time and effort when learning about application development by adopting mobile app development. Additionally, it offers modern answers to cultural barriers that can emerge, promoting advancement and originality.

9.3 Future work

In this application, we have put almost all the possible ideas and feature, but in the future we will modify the application and add the necessary things, according to the feedback that will be returned to us by the users, where the main factor for discovering all the gaps in the application is the feedback for the users.

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