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FACULTY OF ENGINEERING AND INFORMATION
TECHNOLOGY

Computer Engineering Department

Software Graduation Project

To buy list

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Abstract

Our project is a mobile application linked to a site , a user can create a list of products he would like to purchase from the stores, when he goes out to purchase the items in the list, the system will be smart enough to calculate the shortest path to the stores, so that the purchase process is completed in the least possible distance and with a map showing the store locations and a notification when a store has been approached.

This project is important because it saves time for the user when he goes to buy his house necessities and reminds him when he approaching the store to buy the things on the list. It also calculates the total amount he spends each month.

In our project, there is a website that contains supermarkets located within a specific area. People suggest stores, and the admin checks for the existence of this store . Or if any supermarket wants to display its goods on the site, it makes a request to the administrator. When the admin verifies the information, the request confirms, and the goods, the prices, and the offers are displayed on the website.

The list can be shared by more than one person in the family , such as between married couples and they can mark the things as purchased. And also if there is a children , they can make a request to buy a specific thing, so it appears to the parents .When they accept the request, it is automatically added to the list .

Additionally, the system gives monthly reports on purchases and total payments, and there is also a notification system that notifies the user when certain goods become cheaper, so the user can purchase them. Also, when a person is outside and passes through a store that contains the things on the list, the system reminds him to buy the things in the list while he is on his way. Also the system gives notification when the list contains a lot of items that need to be purchased .

Through our research, we found that there are many well-known applications that alert the user to do a daily job during his day, but there is no application that reminds of a purchase list that is placed manually by the user and using a map that guides him to the locations of the stores that contain his purchase list , and we wish to use our application in our country.

Chapter 1 : Introduction

1.1 Motivation

Many people may face problems in shopping by forgetting the list of orders to be purchased, as well as participating in the lists of orders among family members or friends so that everyone is allowed to add purchases they need, or forgetting the supermarket places and who is closest to the user, and he may need to go to several markets at the same time . Thus, we developed an application that alerts the user to his nearest supermarket, saving his time and effort and enabling him to choose among products from several stores.

1.2 Objective of the project

In our project, there are two apps, one for administrators representing marketplaces in the web app, and one for users in the mobile app. A user can create as many lists as he likes, and he can

also share the lists with family members and send requests to the list from another participant, and there's also an offer page that shows store offers that can be added to the list.

Among its features, users can send a friend request to other users in the application and chat with them, in addition to the map feature that shows the user the route in the least time and the shortest way to all stores, as well as a notification system to remind him to approach the store while driving.

1.3 Scope of the project

Using our application allows people to deal with more than one market at once and save time and effort since it provides flexibility.

1.4 Organization

This report has organized as follows:

- Chapter 1: Overview about objectives and importance of this project.
- Chapter 2: the description for constraints, standards
- Chapter 3: Literature Review.
- Chapter 4: Followed methodology for the implementation of the project.
- Chapter 5: Result and Discussion.
- Chapter 6: summarize the report, and provide information about future work.

Chapter 2

Constraints and Standards / Codes and Earlier course work

2.1 Constraints and Standards

- One of the problems that we faced in the project at the beginning was the difficulty in dealing with programming languages, because we had not built applications before in these languages.
- Difficulty in dealing with the map and showing locations with expected accuracy, determining the shortest route and taking into account the traffic crisis.
- Difficulty dealing with showing notifications inside and outside the application using Firebase.

In mobile app , we use NodeJS for backend and flutter for frontend .

In web app , we use php for backend and HTML , CSS and JS for frontend .

2.2 Earlier course work

The university offered several courses in languages, including web and database courses, as well as online courses.

During the training that we took in conjunction with the project, we learned how to manage our time and write code properly.

Chapter 3

Literature Review

The Smart Shopping List' [1], a mobile software solution which enables the users to perform their grocery shopping experience with the ease of overcoming the above complications. The Application consists of several modules; Interactive Shopping List where the user can add/remove/cross items, Shop Locator which assist the user to find the ideal supermarket to go to so that most of the items can be bought in one place, Items Recommender powered with Apriori algorithm to remind the user of any possible missing items or items he may be interested in and BringMe!', which is a text-to-app feature to share the shopping lists between the users.

`Shop-Lister' [2] is then discussed along with implementation and design methodologies, which is a mobile based application that enables people to create grocery lists, manage (add/delete/cross items) lists, find nearby supermarkets available, recommend items to added to list along with brand suggestions and also helps locate items within a supermarket through the use of augmented reality. This type of solution will help improve people's lifestyle and reduce the level of complexity faced in grocery list management.

Cozi Family Organizer app . The “List” tab allows users to create a shared shopping list that everyone with access to it can add to — meaning that kids can share snack ideas and parents can keep everyone updated on meal plans. Once an ingredient gets added, the list automatically organizes it by food group to make shopping that much easier. In our application, we have added many features that make it unique and different from the previous one, such as the Google Map feature, sending friend requests, and chatting with them, as well as a notification system that alerts the person when he is about to access the market that contains the items on his list.

Chapter 4

Methodology

4.1 Tools , Methods and programming Languages

4.1.1 programming Languages :

Our application was built using three different languages:

- Flutter for the frontend.
- Node-JS for the backend.
- PHP, HTML, CSS, JS for the website.

4.1.2 Tools :

- Visual Studio Code
- Xampp.
- PhpStorm .
- Android Phone for testing.
- Google map.
- Firebase .

4.1.2 DataBase :

This is our MYSQL database tables for our to buy list project :

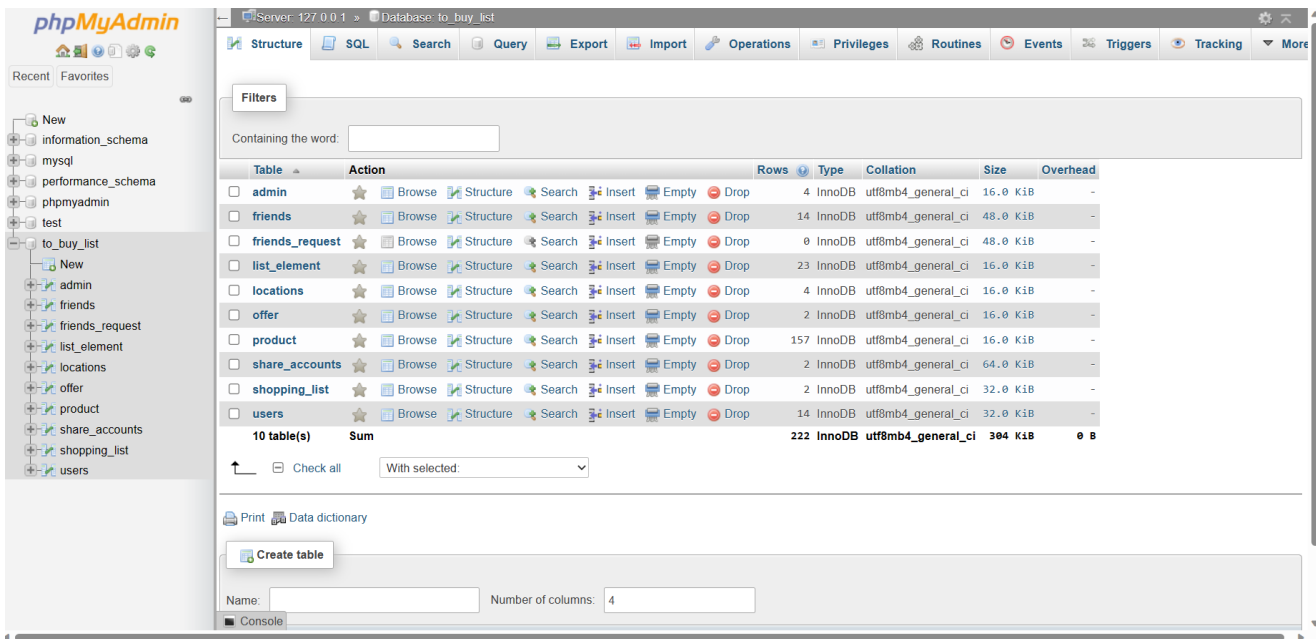


Figure 1: Database tables

- **Admin Table:** For website owners and for stores interested in joining our to-buy app (admin =1, market =2) and (status =1 for accepted markets) .

+ Options															
← T →															
	AdminName	AdminPass	aboutMarket	city	place	email	street	NumberSales	market_id	status	type <small>(theadmin,2market)</small>	image	number		
<input type="checkbox"/>	Edit	Copy	Delete	Lail Nhar	123456	Nablus	Rafedia	lialnhar@gmail.com	Rafedia Street	0	1	1	2	assets/images/Lail-Nhar.png	568022022
<input type="checkbox"/>	Edit	Copy	Delete	Tal-ALakhdar	123456	Nablus	Rafedia	TalALakhdar@gmail.com	Rafedia Street	0	2	1	2	assets/images/Tal-ALakhdar.png	568022052
<input type="checkbox"/>	Edit	Copy	Delete	bravo	123456	Nablus	baitWazan	bravo@gmail.com	baitwazan street	0	3	1	2	assets/images/bravo.png	598745214
<input type="checkbox"/>	Edit	Copy	Delete	seema	123456	ramallah		seema@gmail.com	المزينة - الاسكان بالقرب من مستعم ييسان	0	4	1	1		568032914

Figure 2 : Admin table

- **Users Table:** for the users that use the mobile app .

+ Options								
← T →								
	username	email	userpass	place	phone			
<input type="checkbox"/>	Edit	Copy	Delete	ahmad	ahmad@gmail.com	123456	jenin	567895212
<input type="checkbox"/>	Edit	Copy	Delete	eleen	eleen@gmail.com	123456	jenin	532689546
<input type="checkbox"/>	Edit	Copy	Delete	eleenzeyad	eleenz@gmail.com	123456	jenin	532689524
<input type="checkbox"/>	Edit	Copy	Delete	hana	hana@gmail.com	123456	jenin	568974548
<input type="checkbox"/>	Edit	Copy	Delete	raghad	ragha@gmail.com	123456	tolkarm	568987654
<input type="checkbox"/>	Edit	Copy	Delete	rana	rana@gmail.com	234	nablus	599879874
<input type="checkbox"/>	Edit	Copy	Delete	sama	sama@gmail.com	123456	nablus	568032954
<input type="checkbox"/>	Edit	Copy	Delete	seema	seemaz@gmail.com	123456	jenin	568032914
<input type="checkbox"/>	Edit	Copy	Delete	seemaZeyad	seemaz@gmail.com	123456	jenin	568032915

Figure 3 : Users table

- **Product Table:** In every market, each product is assigned a specific number based on its characteristics.

+ Options												
← T →												
	productname	productcategory	amount	price	expirydate	marketname	image	id	unit			
<input type="checkbox"/>	Edit	Copy	Delete	Zucchini	Vegetables	65	6	2023-04-22	bravo	Zucchini.png	20	kg
<input type="checkbox"/>	Edit	Copy	Delete	Yogurt	Egg Dairy	500	12	2023-05-04	bravo	Yogurt.png	47	1
<input type="checkbox"/>	Edit	Copy	Delete	XL Energy	Beverages	100	5	2023-05-02	bravo	XL Energy Drink.png	116	1
<input type="checkbox"/>	Edit	Copy	Delete	White Flour	Cooking Baking	800	6	2023-05-24	Lail Nhar	White Flour.png	42	kg
<input type="checkbox"/>	Edit	Copy	Delete	White Bread	Bread Bakery	100	4	2023-05-04	Tal-ALakhdar	White Sliced Bread.png	111	kg
<input type="checkbox"/>	Edit	Copy	Delete	Watermelon seeds	Snacks&Chips	120	10	2023-05-04	Tal-ALakhdar	Watermelon seeds.png	55	1
<input type="checkbox"/>	Edit	Copy	Delete	Watermelon	Fruits	40	8	2023-05-04	bravo	Watermelon.png	23	kg
<input type="checkbox"/>	Edit	Copy	Delete	Water	Beverages	100	2	2023-05-05	Lail Nhar	Water.png	121	1
<input type="checkbox"/>	Edit	Copy	Delete	Tomato Paste	Canned Jar	300	8	2023-05-03	bravo	Canned Tomato Paste.png	95	1
<input type="checkbox"/>	Edit	Copy	Delete	Tomato Ketchup	Sauces Spices Condiments	120	10	2023-05-03	Tal-ALakhdar	Tomato Ketchup.png	74	1
<input type="checkbox"/>	Edit	Copy	Delete	Tomato	Vegetables	10	8	2023-05-03	Tal-ALakhdar	Tomato.png	2	kg
<input type="checkbox"/>	Edit	Copy	Delete	Thermometer	Pharmacy	100	4	2023-05-05	Tal-ALakhdar	Thermometer.png	162	1
<input type="checkbox"/>	Edit	Copy	Delete	Sunwhite Rice	Grains Pasta Slides	120	20	2023-05-04	bravo	Sunwhite Rice.png	64	kg
<input type="checkbox"/>	Edit	Copy	Delete	Sunflower Oil	Oil Vinegar	120	25	2023-05-04	bravo	Sunflower Oil.png	71	2 L
<input type="checkbox"/>	Edit	Copy	Delete	Suger	Cooking Baking	500	6	2023-05-03	bravo	Suger.png	44	kg
<input type="checkbox"/>	Edit	Copy	Delete	Sprite	Beverages	100	3.5	2023-05-01	Lail Nhar	Sprite.png	120	1
<input type="checkbox"/>	Edit	Copy	Delete	Spinach	Vegetables	600	2	2023-04-26	bravo	Spinach.png	22	kg
<input type="checkbox"/>	Edit	Copy	Delete	Snickers	Sweets	200	3	2023-05-04	Lail Nhar	Snickers.png	101	1
<input type="checkbox"/>	Edit	Copy	Delete	Shrimps	Fish Seafoad	200	50	2023-05-03	bravo	Shrimps.png	91	kg
<input type="checkbox"/>	Edit	Copy	Delete	Seven Days	Sweets	200	3	2023-05-04	Tal-ALakhdar	Seven Days.png	98	1
<input type="checkbox"/>	Edit	Copy	Delete	Samolina	Cooking Baking	200	8	2023-06-25	Tal ALakhdar	Samolina.png	41	kg

Figure 4 : Products table

- **Shopping list table:** The user can create an unlimited number of shopping lists and choose products from the participating stores in the application. Each list has certain characteristics such as the time, date, and friends involved.

+ Options										
				id	name	date	username	price	Time	color
<input type="checkbox"/>				87	raghadsharing	5/24/2023	seema	227.0	11:25 AM	2196F3
<input type="checkbox"/>				88	New	5/23/2023	raghad	109	11:05 AM	2196F3
<input type="checkbox"/>				90	birthday party	5/30/2023	seema	0.0	4:28 PM	2196F3
<input type="checkbox"/>				91	party	5/30/2023	seema	0.0	4:29 PM	F32163

Figure 5 : Shopping List table

- **List element table:** Each list includes products that the user adds or the participating person requests from the offers or stores pages .

+ Options																	
				id	list_id	product_id	productName	count	ProductCategory	price	isShopped	image	Comment	offerPrice	username	request	market_name
<input type="checkbox"/>				558	87	57	Lays Chips	2	Snacks Chips	4.0	0	Lays Chips.png		0		0	bravoo
<input type="checkbox"/>				559	87	80	Meat	2	Meats	120.0	0	Meat.png		0		0	Lail Nhar
<input type="checkbox"/>				560	87	87	Sausages	1	Meats	12	0	Sausages.png		0		0	bravo
<input type="checkbox"/>				561	87	84	Chicken ship	1	Meats	26	0	Chicken ship.png		0		0	Tal-ALakhdar
<input type="checkbox"/>				562	87	79	Babrecue	1	Sauces Spices Condiments	5	1	Babrecue.png		0		0	bravo
<input type="checkbox"/>				565	87	91	Shrimps	1	Fish Seafoad	50	0	Shrimps.png		0	raghad	1	bravo
<input type="checkbox"/>				573	87	7	Cucumber	2	Vegetables	8.0	0	Cucumber.png		0		0	Tal-ALakhdar
<input type="checkbox"/>				574	87	2	Tomato	1	Vegetables	8	0	Tomato.png		0		0	Tal-ALakhdar
<input type="checkbox"/>				575	87	18	Potatoes	1	Vegetables	4	0	Potatoes.png		4		0	bravo
<input type="checkbox"/>				576	87	71	Sunflower Oil	2	Oil Vinegar	50.0	1	Sunflower Oil.png		0		0	bravo
<input type="checkbox"/>				577	87	70	Corn oil	2	Oil Vinegar	60.0	0	Corn oil.png		0		0	Tal-ALakhdar
<input type="checkbox"/>				578	87	72	Olive Oil	2	Oil Vinegar	24.0	1	Olive Oil.png		0		0	Lail Nhar
<input type="checkbox"/>				579	87	48	Butter	3	Egg Dairy	30.0	0	Butter.png		0	raghad	1	Lail Nhar
<input type="checkbox"/>				580	87	83	chicken breast	2	Meats	40.0	0	chicken breast.png		0	raghad	1	Tal-ALakhdar
<input type="checkbox"/>				581	87	28	Mango	2	Fruits	20.0	0	Mango.png		0	raghad	1	Lail Nhar
<input type="checkbox"/>				582	88	1	Carrots	3	Vegetables	30	0	Carrots.png		0		0	Tal-ALakhdar
<input type="checkbox"/>				583	88	2	Tomato	1	Vegetables	8	0	Tomato.png		0		0	Tal-ALakhdar
<input type="checkbox"/>				584	88	5	Corn	2	Vegetables	10	0	Corn.png		0		0	Tal-ALakhdar
<input type="checkbox"/>				585	88	7	Cucumber	2	Vegetables	8.0	0	Cucumber.png		0		0	Tal-ALakhdar
<input type="checkbox"/>				586	88	45	Egg	1	Egg Dairy	6	1	Egg.png		0		0	bravo
<input type="checkbox"/>				587	88	57	Lays Chips	1	Snacks Chips	2	0	Lays Chips.png		0	seema	0	bravo

Figure 6 : List element table

- **Share account table:** This table includes the names of people with whom it has been shared lists.

+ Options							
				list_id	username	id	friend
<input type="checkbox"/>				87	seema	32	raghad
<input type="checkbox"/>				88	raghad	33	seema

Figure 7 : share account table

- **Friend table:** This table includes the names of friends.

+ Options				id	username	friend
<input type="checkbox"/>				48	raghad	seema
<input type="checkbox"/>				56	seema	raghad
<input type="checkbox"/>				59	eleen	seema
<input type="checkbox"/>				60	seema	eleen
<input type="checkbox"/>				75	eleenZeyad	seema
<input type="checkbox"/>				76	seema	eleenZeyad
<input type="checkbox"/>				77	sama	seema
<input type="checkbox"/>				78	seema	sama

Figure 8 : Friend table

- **Friend request table:** table of offers offered by stores and shown to users within the application.

+ Options				id	sender	receiver
<input type="checkbox"/>				32	seema	hana

Figure 9 : Friend request table

- **offer table:** Table of friend requests from sender and receiver .

+ Options											
← T →											
		productname	newprice	date	marketname	image	id	product_id	unit		
<input type="checkbox"/>				Potatoes	4	2023-05-26	bravo	Potatoes.png	6	18	kg
<input type="checkbox"/>				Canned Corn	3	2023-05-26	bravo	Canned Corn.png	7	94	1

Figure 10 : offer table

- **Location table:** Table that stores the location values for each store.

+ Options		
store_name	latitude	longitude
Tal-ALakhdar	32.44403406	35.16135990
bravo	32.44326855	35.16387679
Lail Nhar	32.44017525	35.15558015

Figure 11 : Location table

4.2 System Features Implementation

4.2.1 Admin Interface

first page: Our application first page

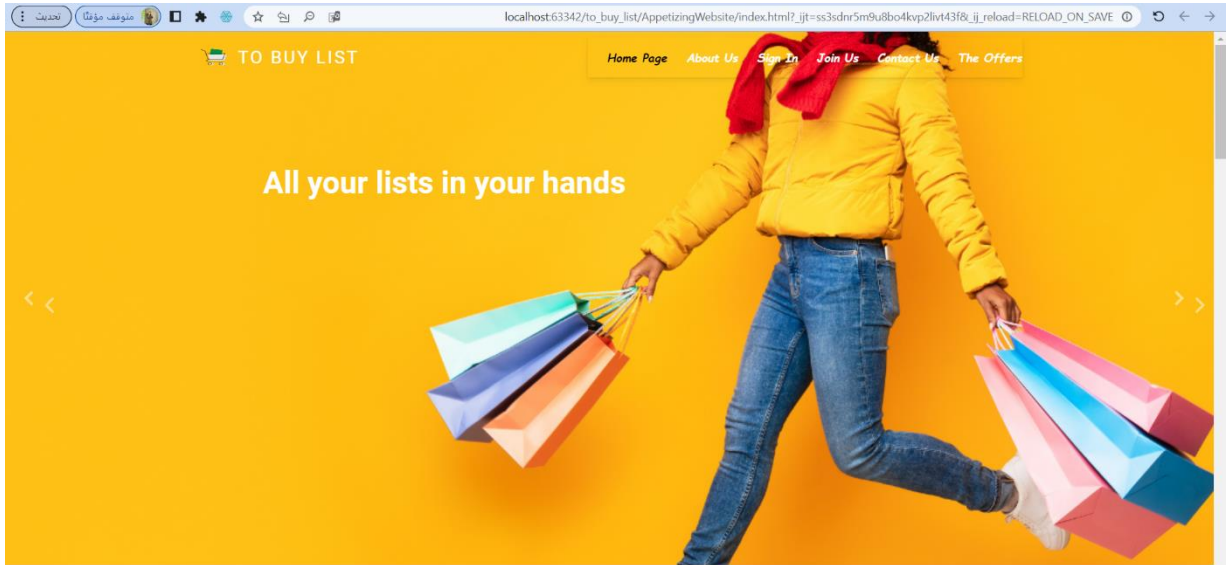


Figure 12 : First page

Admin Signing page : (just the accepted markets can login in our app)

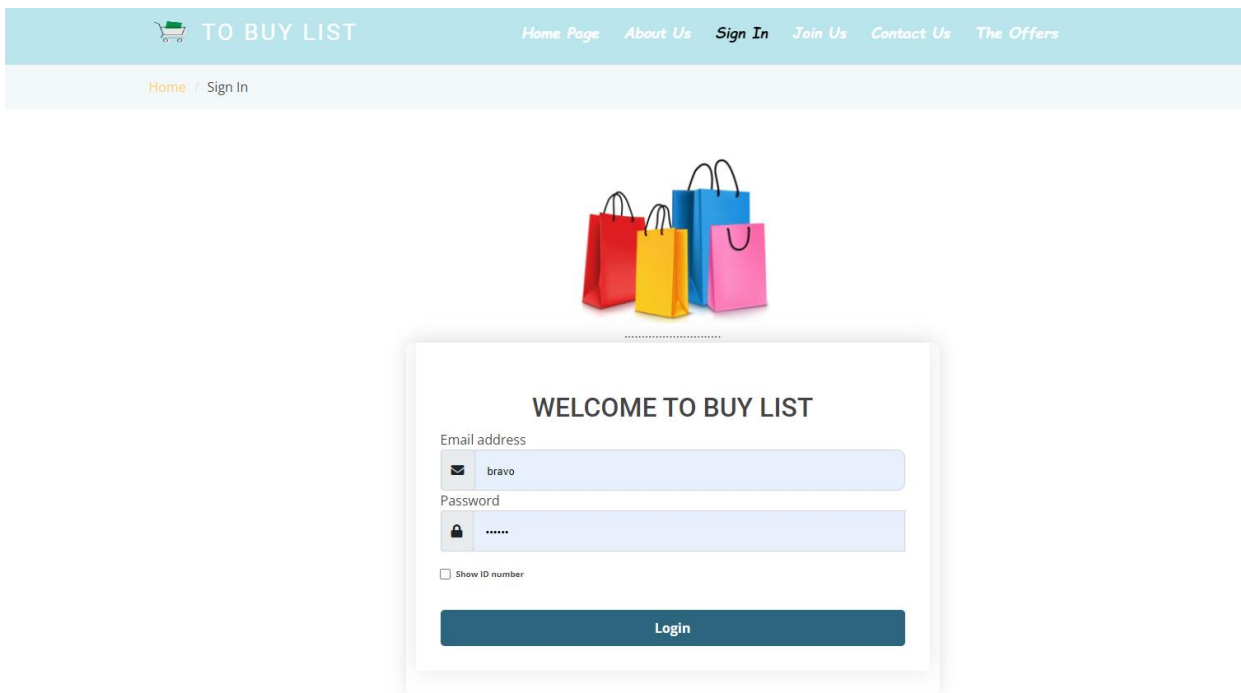


Figure 13 : Sign In page

Join us page : In this page the markets can send a request to the admin so he can then accepts or rejects the request .

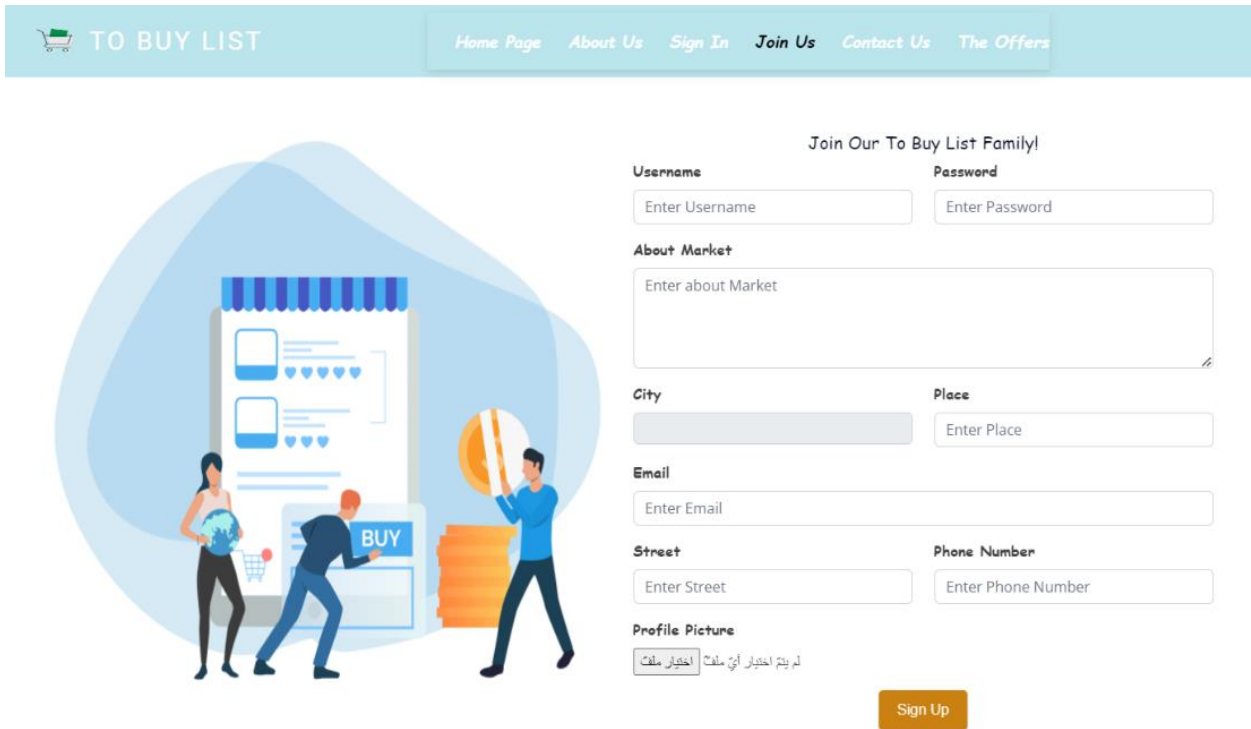


Figure 14 : Join us page

Request page : In this page the admin can accepts or rejects the requests .

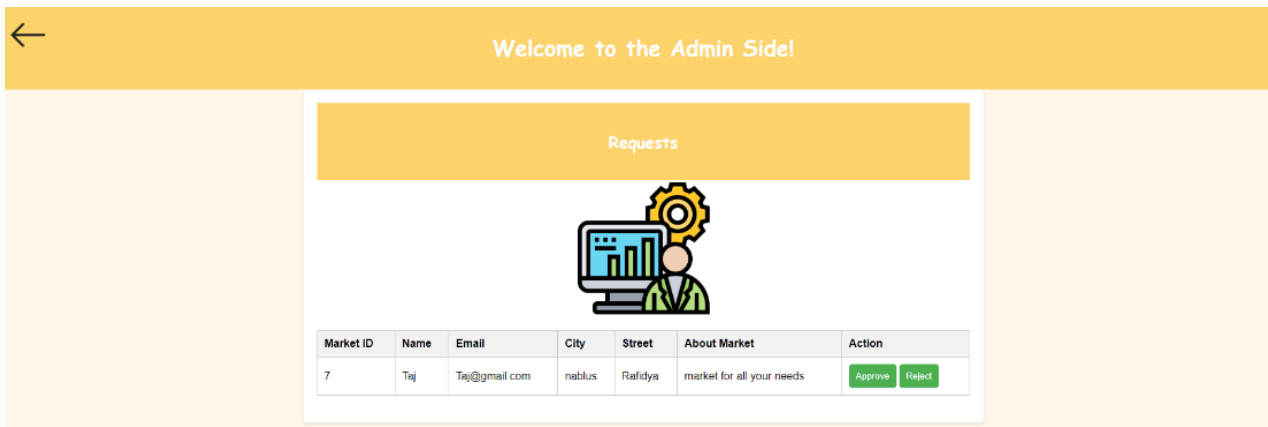




Figure 15 : Request page

Contact us page : in this page the users of the app can send any message to the admin .

Contact Us

Feel free to keep in touch with us!

-  010-020-0860
-  info@company.com
-  www.company.com

Name:


Email:

Message:

Figure 16 : Contact us page

Messages page : in this page the messages appear to the admin .

Messages



name	email	message
raghad	raghadmarie@gmail.com	perfect app 🍷
seema	seema@gmail.com	good job 🍷
nagham	naghammarie@gmail.com	wooooow 🍷
adam	adam@gmail.com	I love this app 🍷🍷🍷

Figure 17 : Messages page

Add Products page: From this page, the market can add its own products with the all information .

The screenshot shows the 'Add Products' page in the 'TO BUY LIST' application. At the top, there is a navigation bar with the following items: Home, Profile, Your Products, Add Products, Market Location, Market Offers, My Offers, and Add Category. Below the navigation bar is a shopping cart icon containing various items like Bread, Chicken, and Pizza. The main content area features a form with the following fields:

- Product Name:** A text input field.
- Product Category:** A dropdown menu currently showing 'Vegetables'.
- Amount:** A text input field with the placeholder text 'amount'.
- Price:** A text input field with the placeholder text 'Price In Dollar'.
- Expiry date:** A text input field with the placeholder text 'Expiry date'.
- Product image:** A button with the text 'لم يتم اختيار أي ملفات' (No files selected) and 'اختر ملفات' (Select files).

At the bottom of the form is a yellow 'Add' button.

Figure 18 : Add products page

Products page: Here is all the products that the market adds , so then the market can delete or update as want .


The screenshot shows the 'Products' page in the 'TO BUY LIST' application. The page features a table with the following columns: Product Name, Product Category, Amount, New Price, Expiry Date, Image, and Actions. The table lists the following products:

Product Name	Product Category	Amount	New Price	Expiry Date	Image	Actions
Potatoes	Vegetables	600	5	2023-05-05		Edit Delete
Radish	Vegetables	45	7	2023-04-20		Edit Delete
Zucchini	Vegetables	65	6	2023-04-22		Edit Delete
Parsley	Vegetables	600	1	2023-04-27		Edit Delete
Spinach	Vegetables	600	2	2023-04-26		Edit Delete
Watermelon	Fruits	40	8	2023-05-04		Edit Delete
Plum	Fruits	500	6	2023-05-06		Edit Delete
Peach	Fruits	600	5	2023-04-29		Edit Delete

Figure 19 : products page

Update product page: Here you can update products information so it appears to the user .

Update Product



Product Name:

Product Category:

Amount:


Price:

Expiry Date:


Image:

Figure 20 : Update products page

Add Categories page: Here you can add a new category for products so it appears to the user .

 TO BUY LIST

[Home](#) [Profile](#) [Your Products](#) [Add Products](#) [Market Location](#) [Market Offers](#) [My Offers](#) [Add Category](#)



Add Category

Name:

Image:

Market Name:

Figure 21 : Add Categories page

Add Offer Page: The market can add offers to his market so that they appear on the offers page and on the user side in the mobile application.



Product Name:

Price:

Expiry date:

Product image:

Figure 22 : Add offers page


Offer page : This is where the market displays its offers so that it can delete and update it .

Product Name	New Price	Expiry Date	Image	Actions
Frozen Kabab	10	2023-05-17		Edit Delete
Cotton Swabs	4	2023-06-27		Edit Delete
Honet	20	2023-06-20		Edit Delete
Mayonnaise	10	2023-06-15		Edit Delete
Yogurt	3	2023-06-22		Edit Delete

Figure 23 : Market offers page

Update offer page : Here you can update offers information so it appears to the user .

Update Offers



Product Name:


New Price:

Expiry Date:

Image:

Figure 24 : Update offer page

The offers page : all the offers display in this page in the website with the market name that makes the offer and the end date of it .

 **TO BUY LIST**

[Home Page](#) [About Us](#) [Sign In](#) [Join Us](#) [Contact Us](#) **The Offers**











 Frozen Kabab End Date: 2023-05-17 Market Name: bravo	 Cotton Swabs End Date: 2023-06-27 Market Name: bravo	 Honet End Date: 2023-06-20 Market Name: bravo	 Mayonnaise End Date: 2023-06-15 Market Name: bravo	 Yogurt End Date: 2023-06-22 Market Name: bravo
 Nuts End Date: 2023-06-15 Market Name: Tal-ALakhdar	 Mustard Sauce End Date: 2023-06-21 Market Name: Tal-ALakhdar	 Beef End Date: 2023-06-18 Market Name: Lail Nhar	 Hair Shampoo End Date: 2023-06-30 Market Name: Lail Nhar	 Sunflower Oil End Date: 2023-06-29 Market Name: bravo

Figure 25: all Market offers page

Map Page (for market location) : By zooming in and out, stores can locate their own stores, then the coordinates are saved in the database.

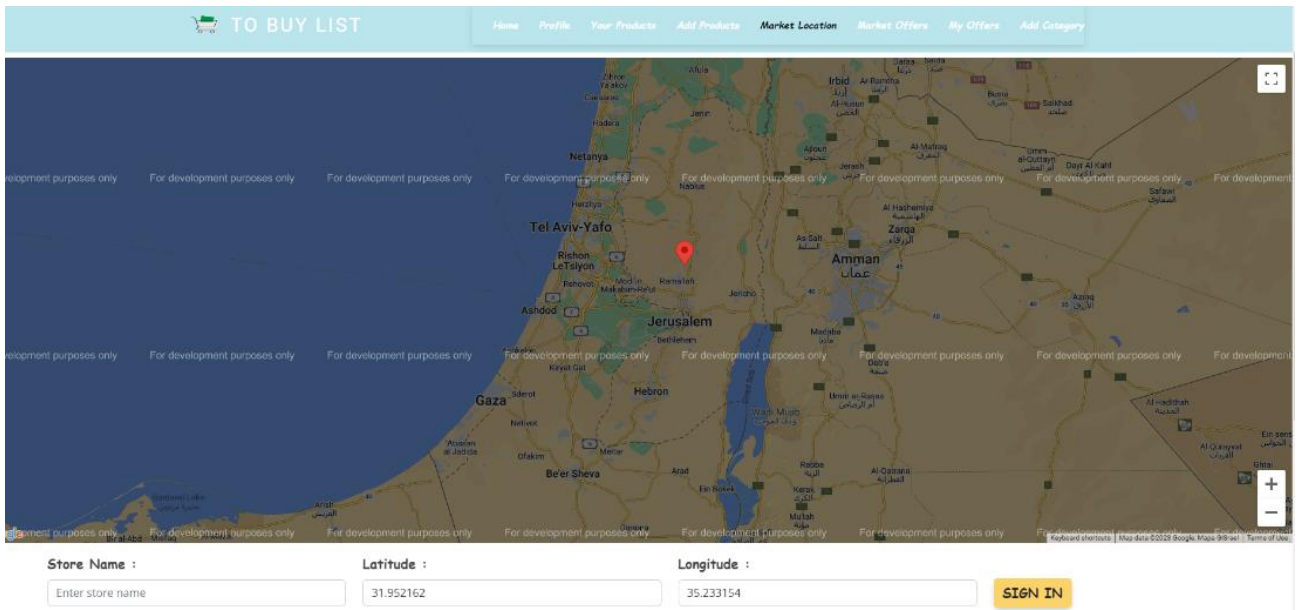


Figure 26 : Map page

Profile Page: It is possible for each market to modify his information, and it is displayed on this screen.

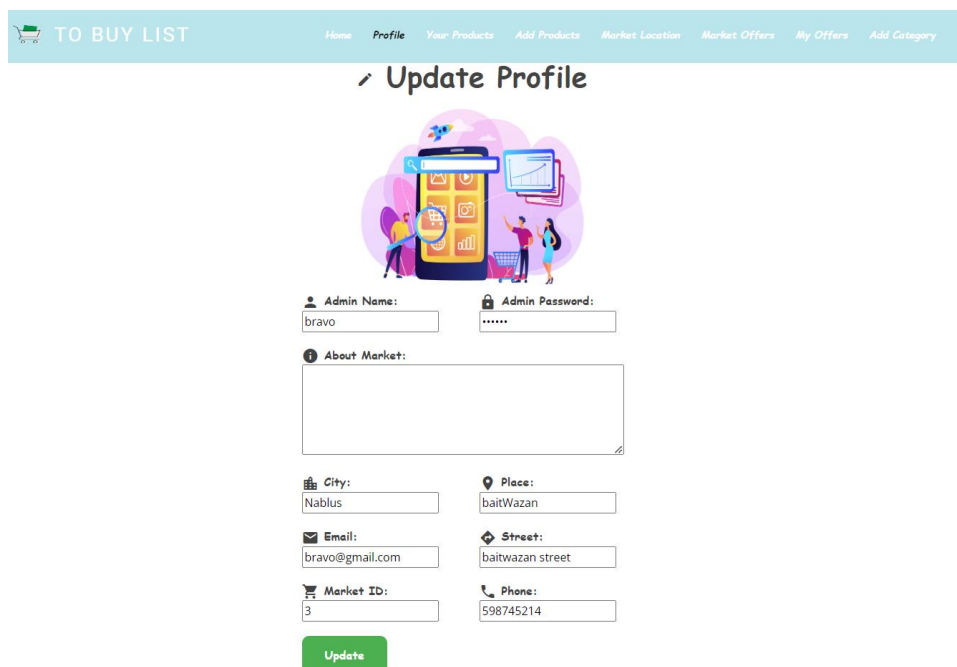


Figure 27 : profile page

Our Services page :

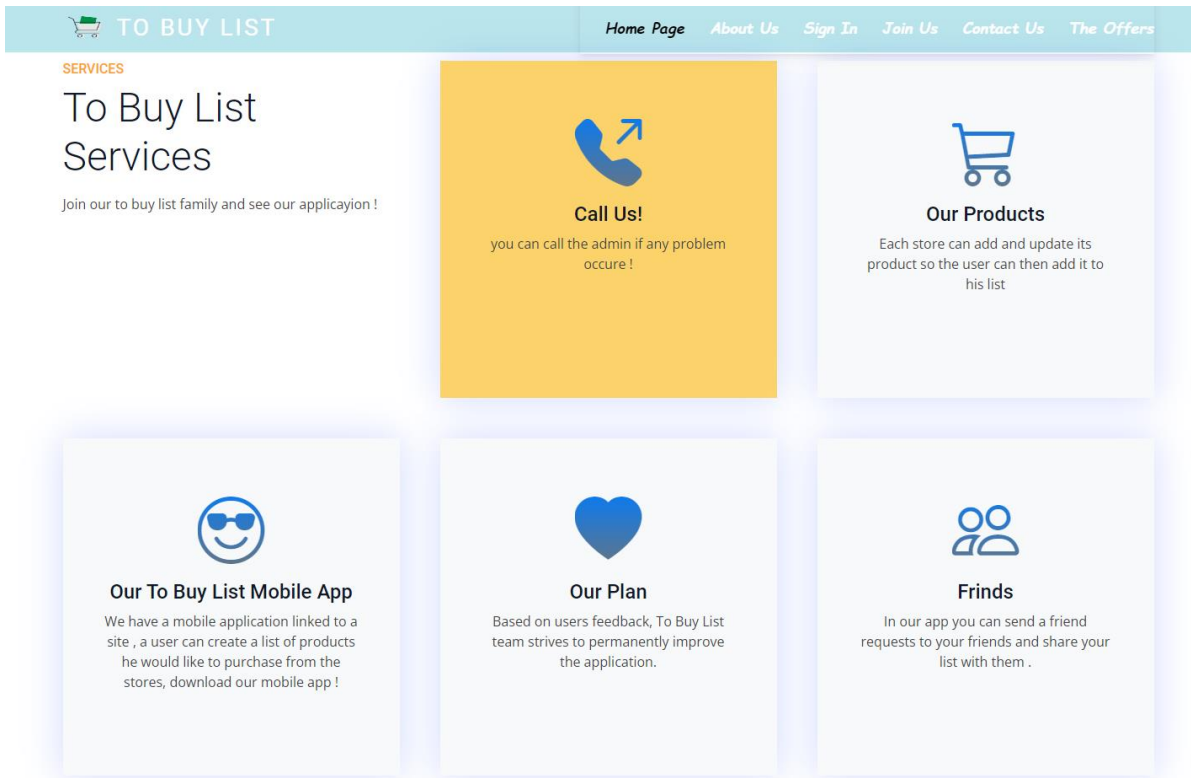


Figure 28: Our Services page

Testimonials of to buy list app :

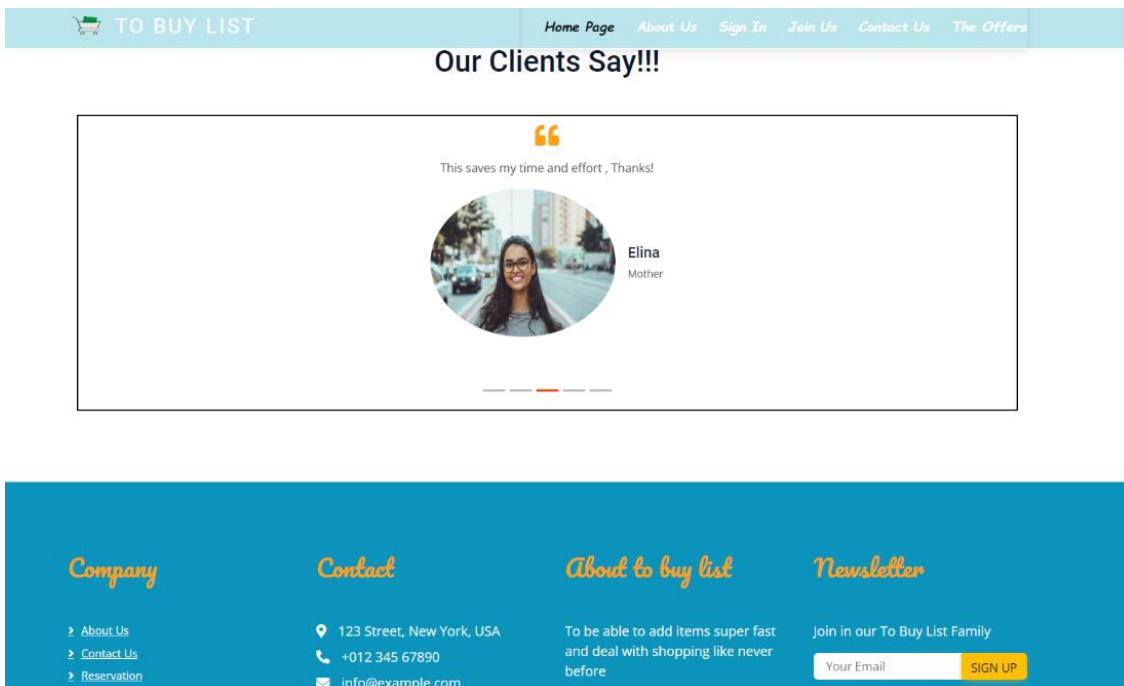


Figure 29 : Testimonials

To Buy List family page :

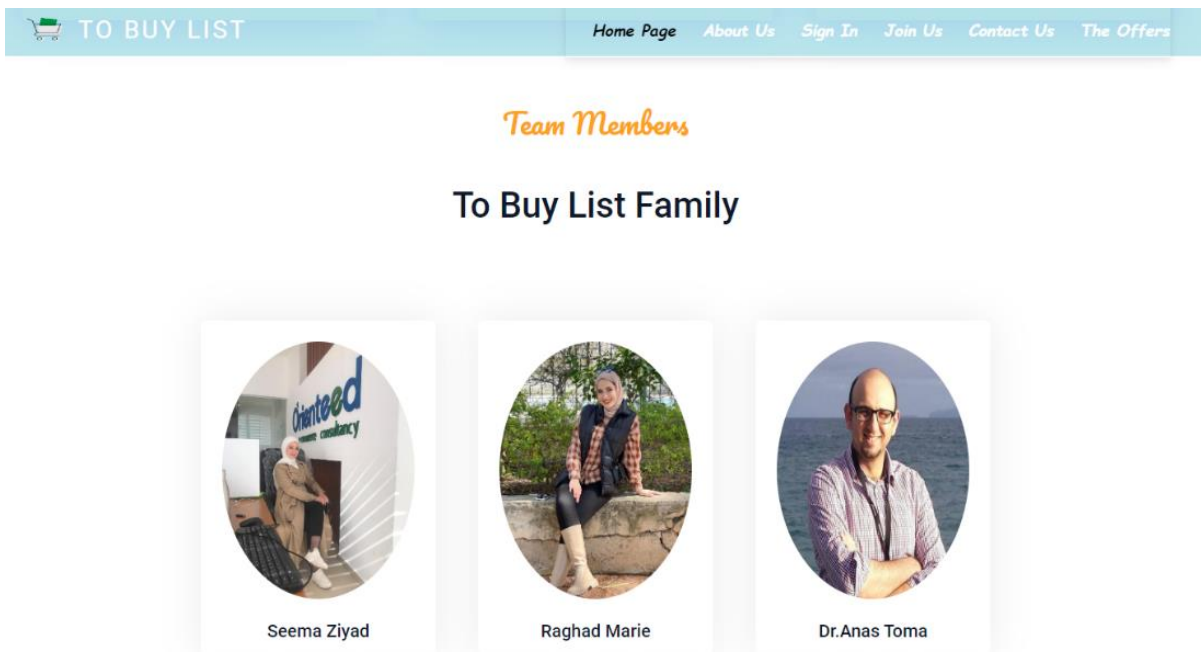


Figure 30 : To Buy List family page

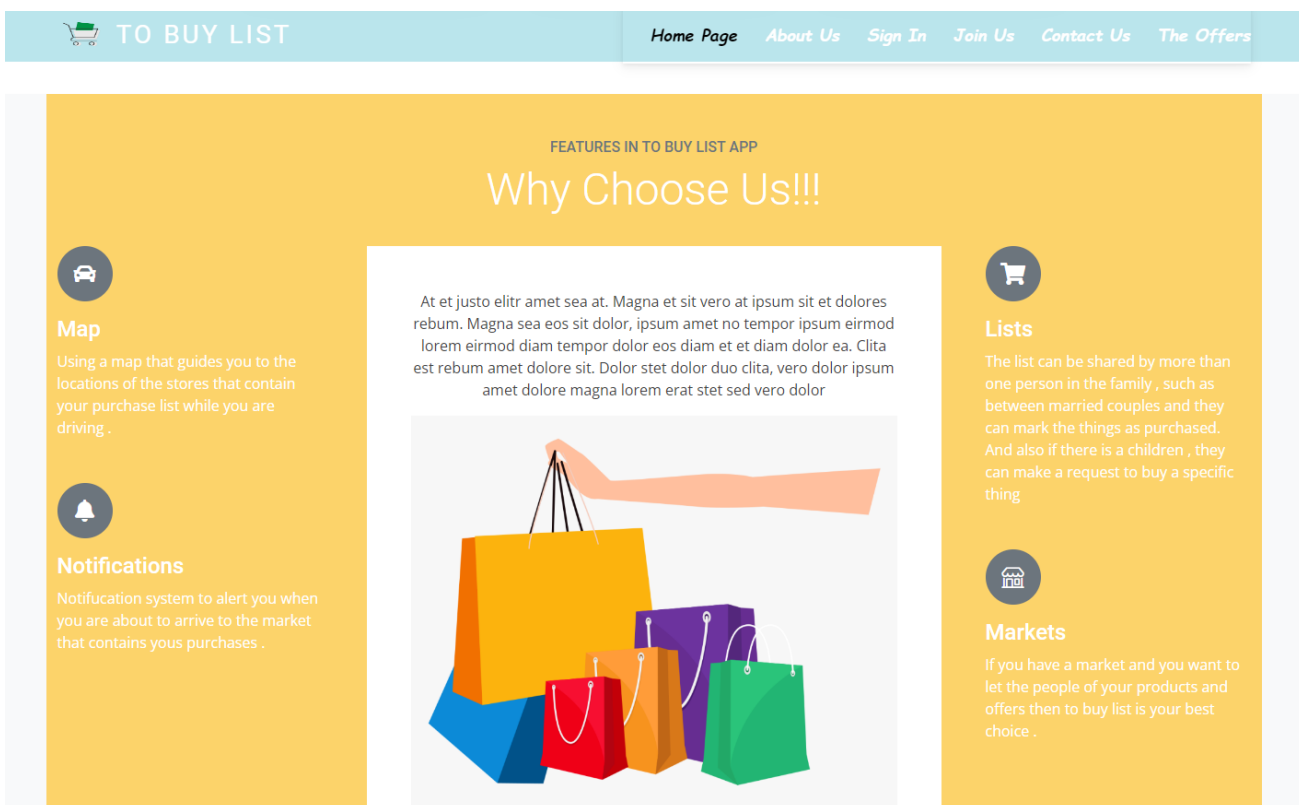


Figure 31 : Why choose us page

About us page :

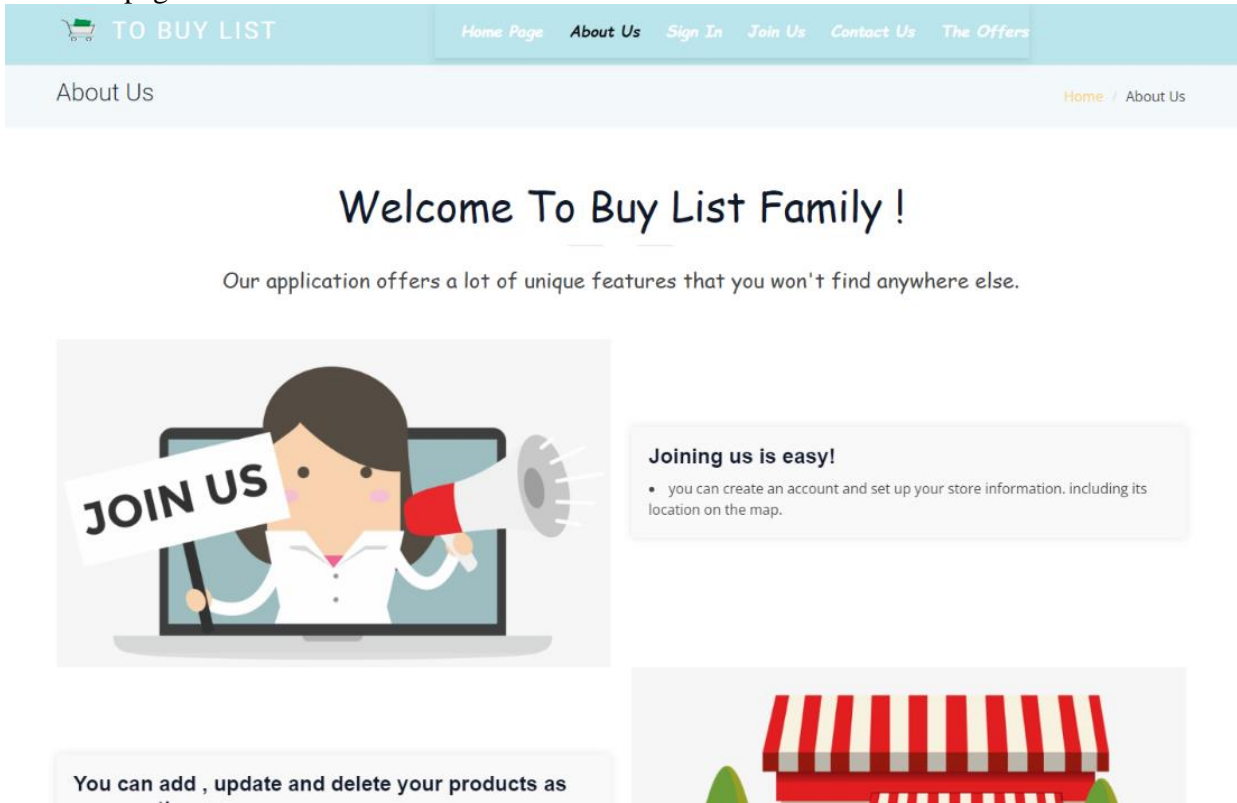


Figure 32 : About us page

4.2.1 User Interface

Main , user login and register pages :



Figure 33 : Main page

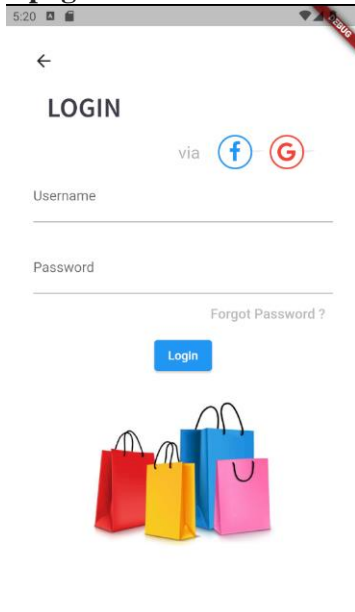


Figure 34 : Login page

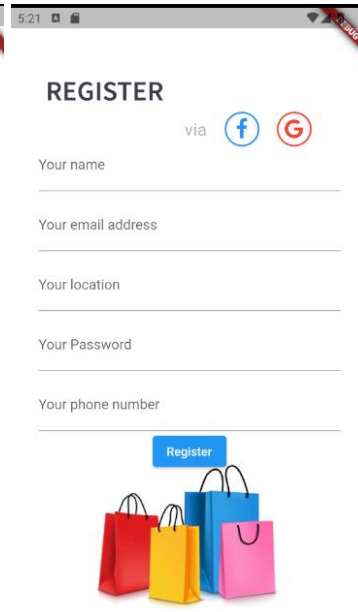


Figure 35 : Register page

Home page : On this page, a button for shopping lists appears with their number, a button items from all stores and their number, a button for stores and their number, a button for friends and their number, a button for the profile page, a button for the map, a button for offers from the stores, as well as a button for chatting with friends .

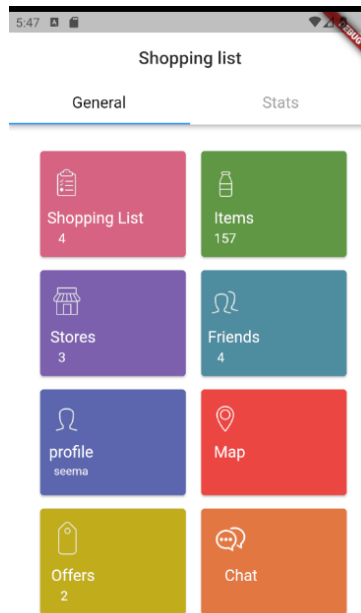


Figure 36 : Home page

Shopping list page : On this page, the lists that user was created displayed with it's information and the lists that was shared with him.

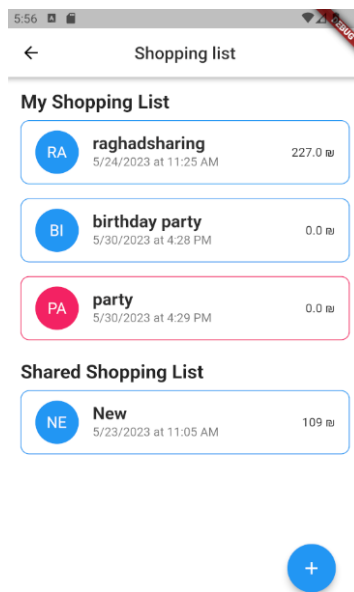


Figure 37 : Shopping list page

Add new list page : This is how to create a new list with the time, date, name, color, and friend I will share with him.

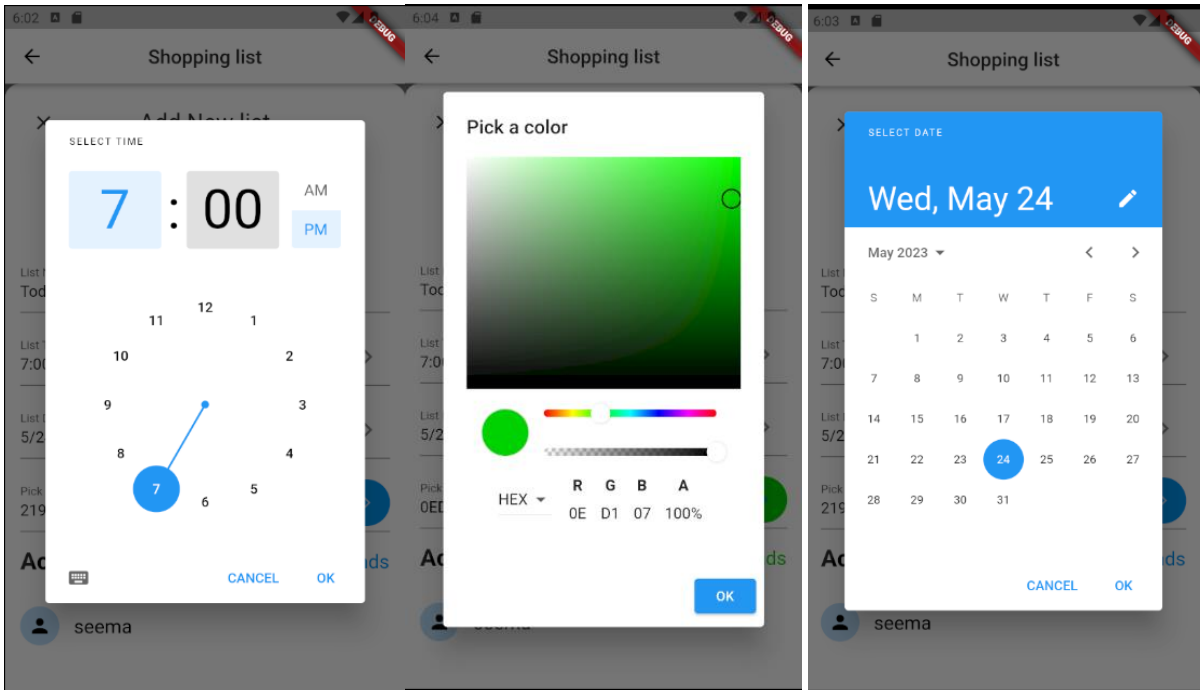


Figure 38 : Time picker screen

Figure 39 : Color picker screen

Figure 40: Date picker screen

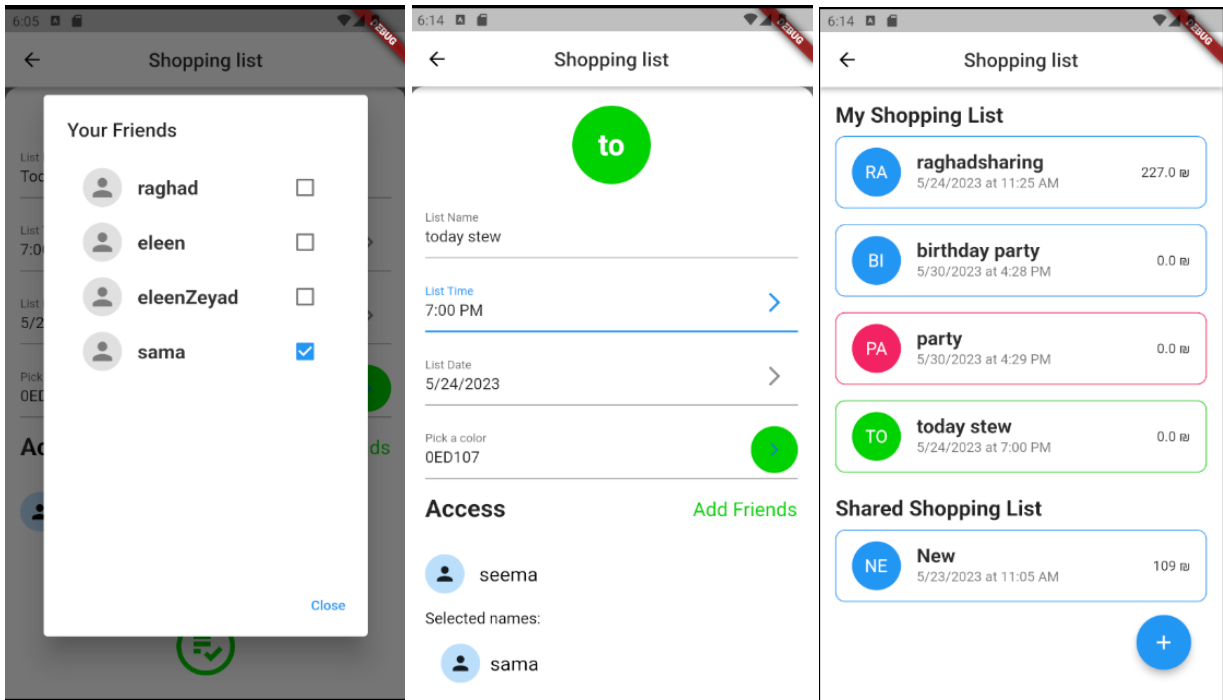


Figure 41 : friend to share screen

Figure 42: add new list page

Figure 43: shopping list page

List details page : This page shows the products selected from the stores and the total amount.

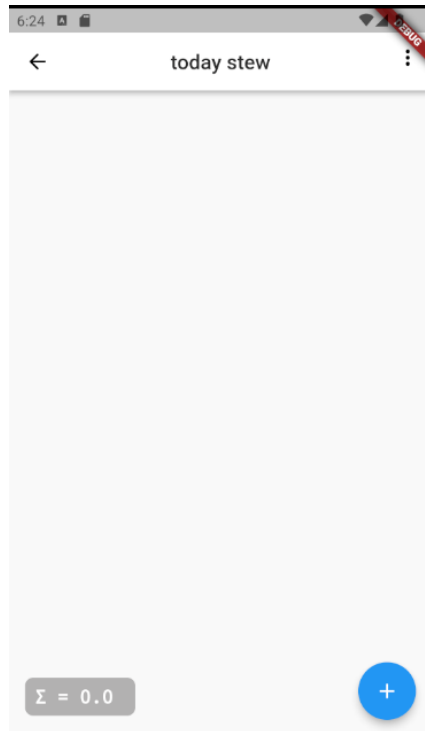


Figure 44 : List details page

addToList page : When you click the add button on the previous page, you will be presented with options to choose products from all stores(category page) , from a specific store (stores page) , or from the offers page .

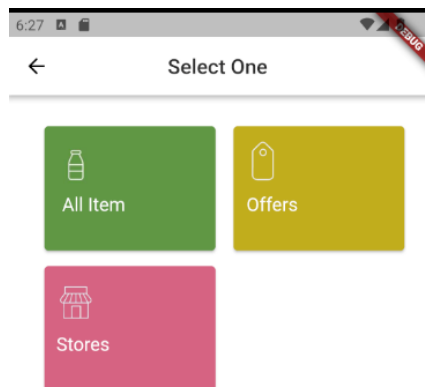


Figure 45 : add to list page



Figure 46 : Category page

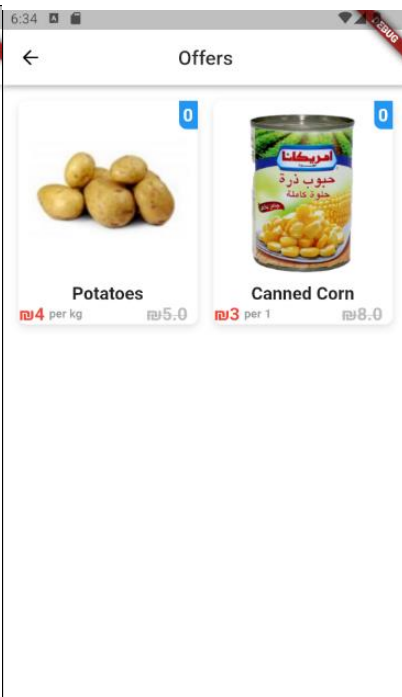


Figure 47 : Offer page

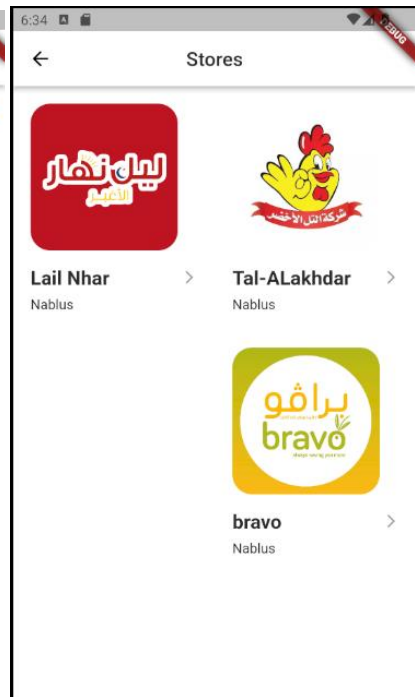


Figure 48: Stores page

Vegetable page : When you click the vegetable button on this page, you will be added to the list with a count of your clicks, and the same is true for other category pages , Additionally, the offer price will be shown in this page for products with offers, as shown in the figure below.

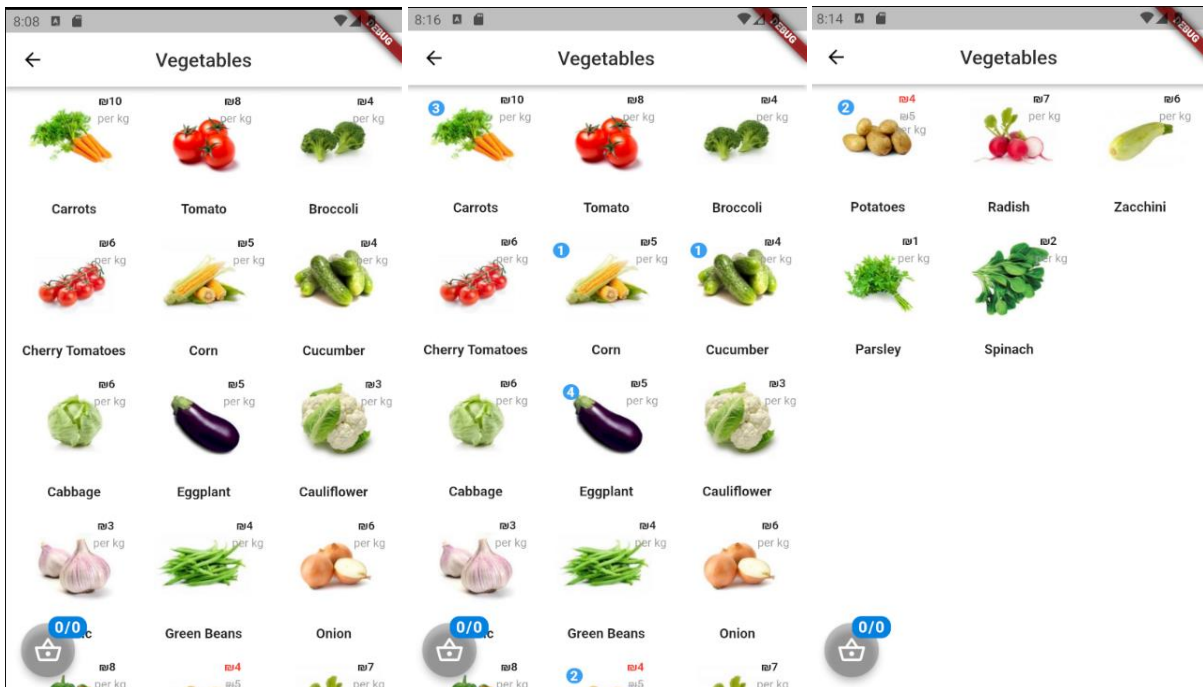


Figure 49 : vegetable category page

And you can add products to list from offer page , as shown in the figure below.

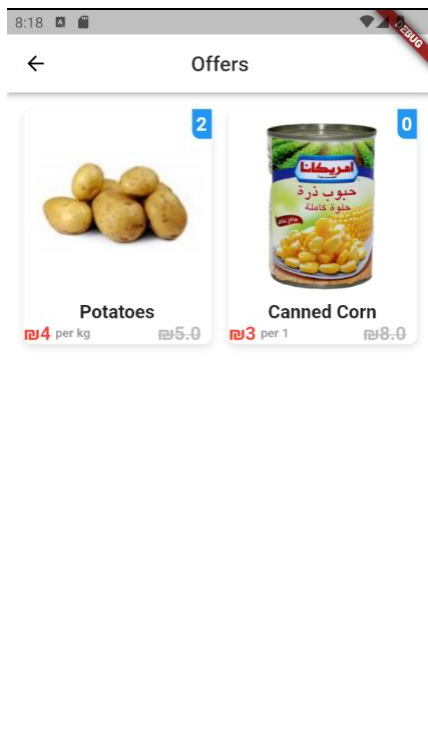
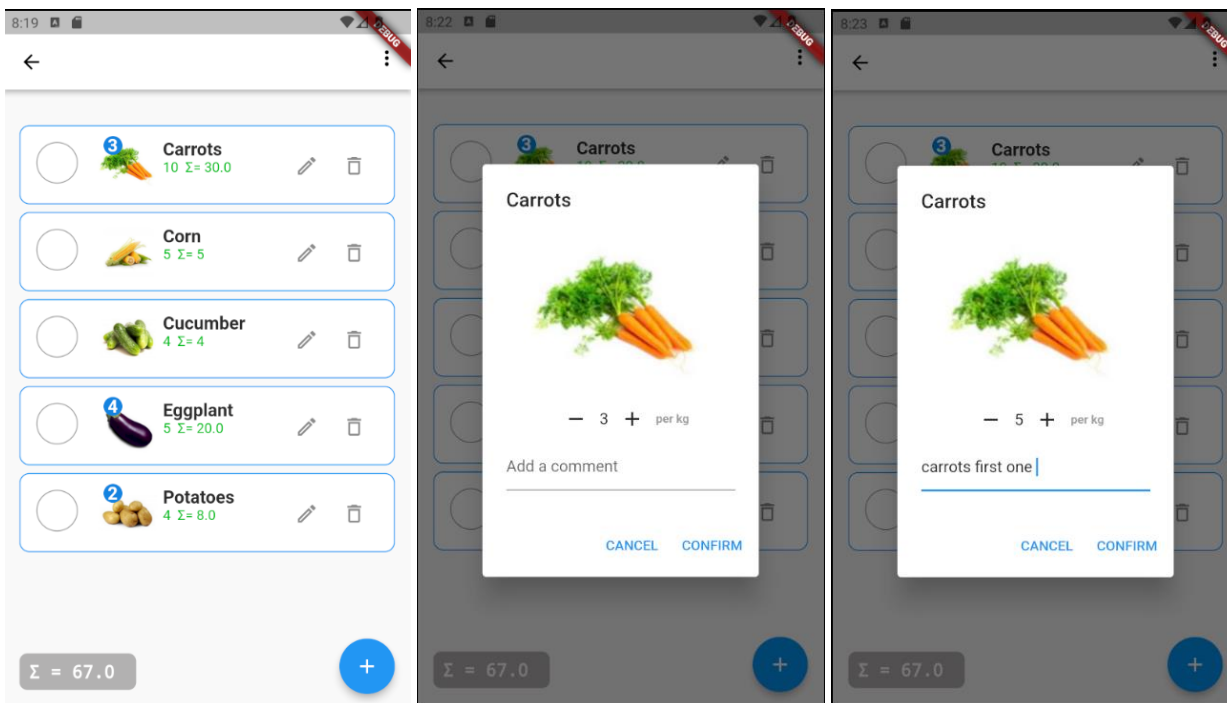


Figure 50 : Offers page

List details page: this is list page when I added the products , also we can edit the count of products , add comments for it or delete it from list.



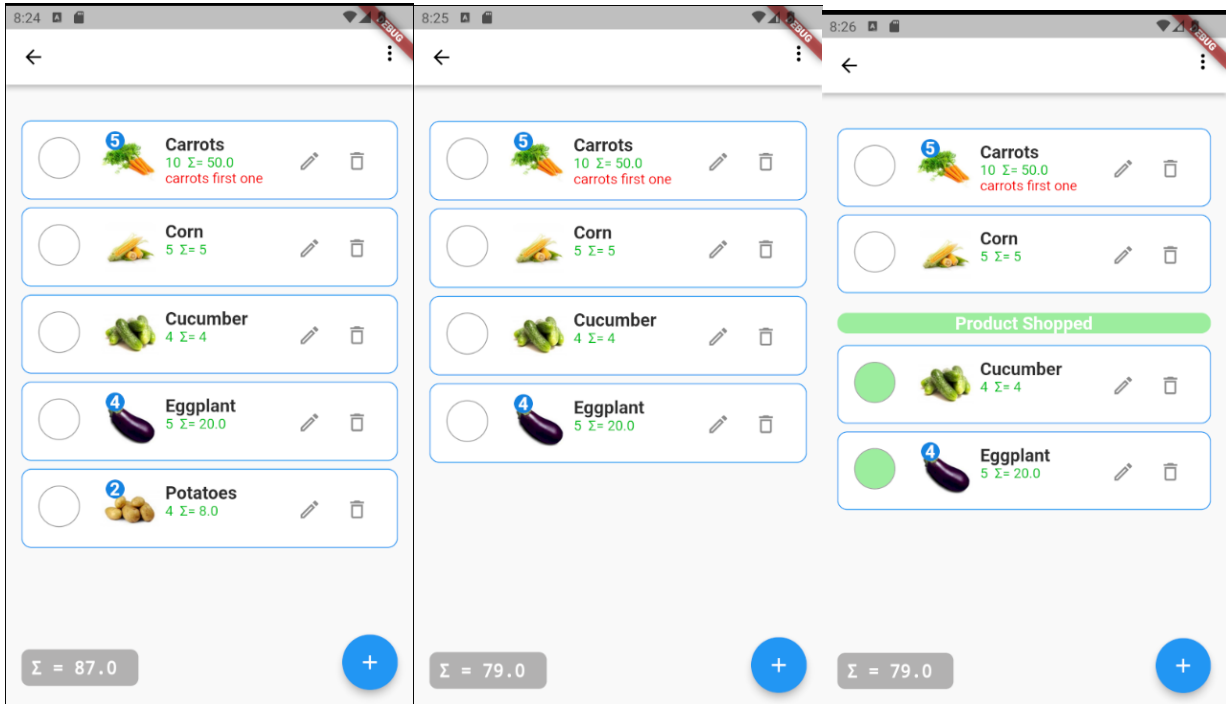


Figure 51 : list details page after edit product information

Whenever you share the list with your friend, this is how the list appears, since the friend does not have the power to amend the existing products. He can, however, send a request to add products he would like to include on the list, which will appear in a list of requests the owner of the list can accept or reject.

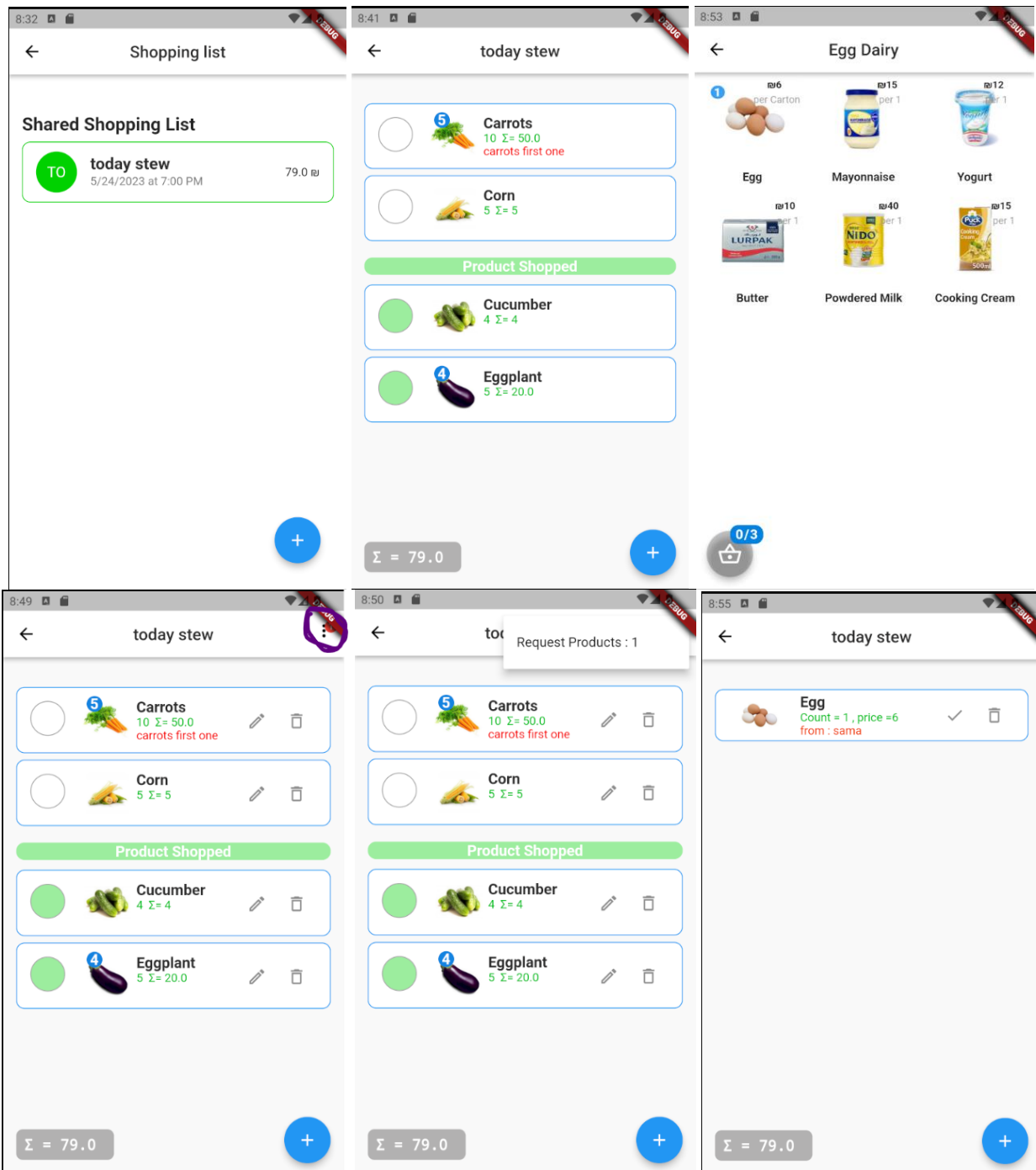


Figure 52 : list details page after sent product request

This appear when he accept the product request .

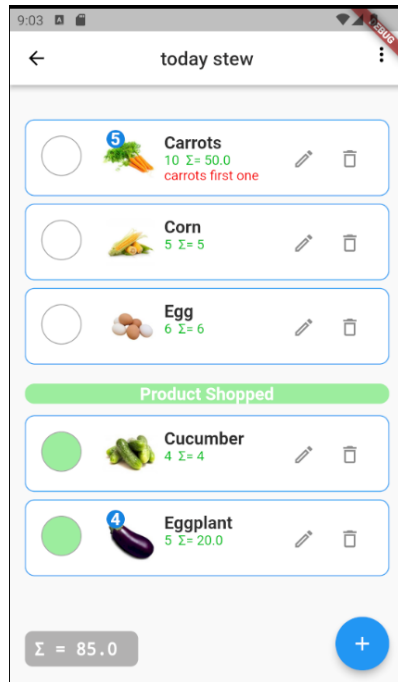


Figure 53 : list details page after accept product request

And when he double click on the list , he can edit , delete or add friend to this list .

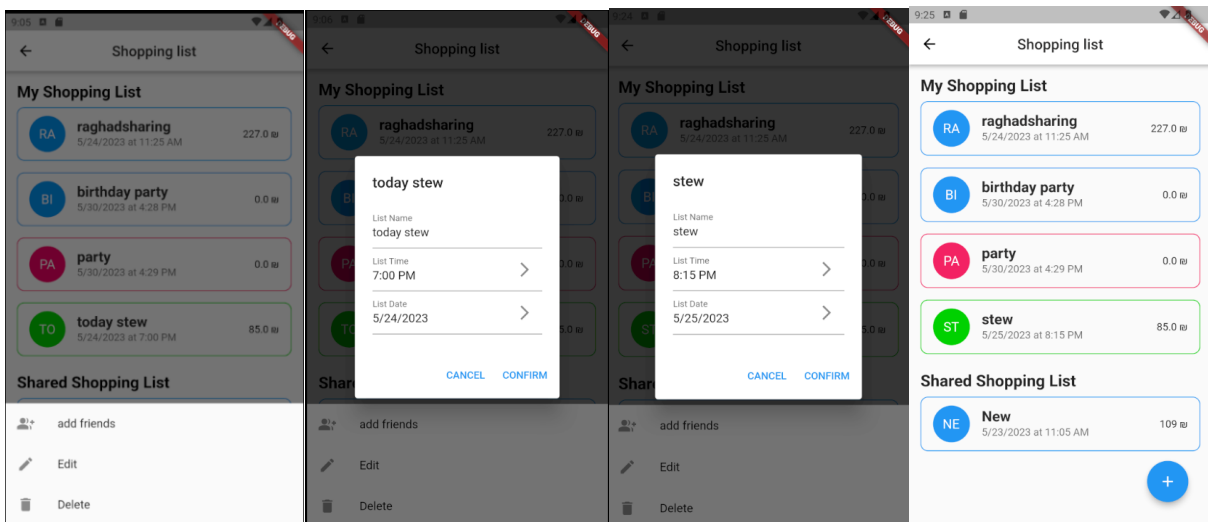


Figure 54 : edit information for shopping list

This image below shows the lists after deleting the party list.

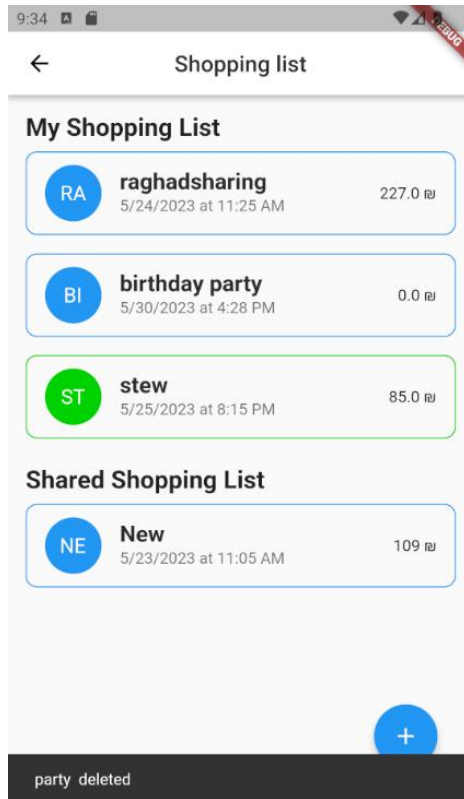
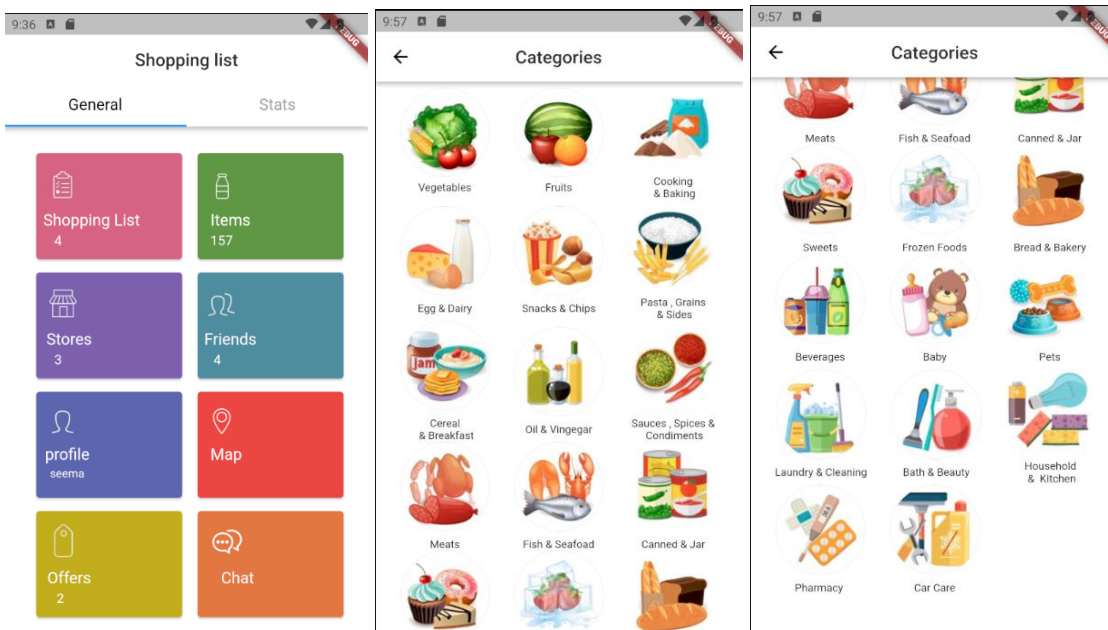


Figure 55 : delete shopping list

Item page : This page contains the category for all stores .



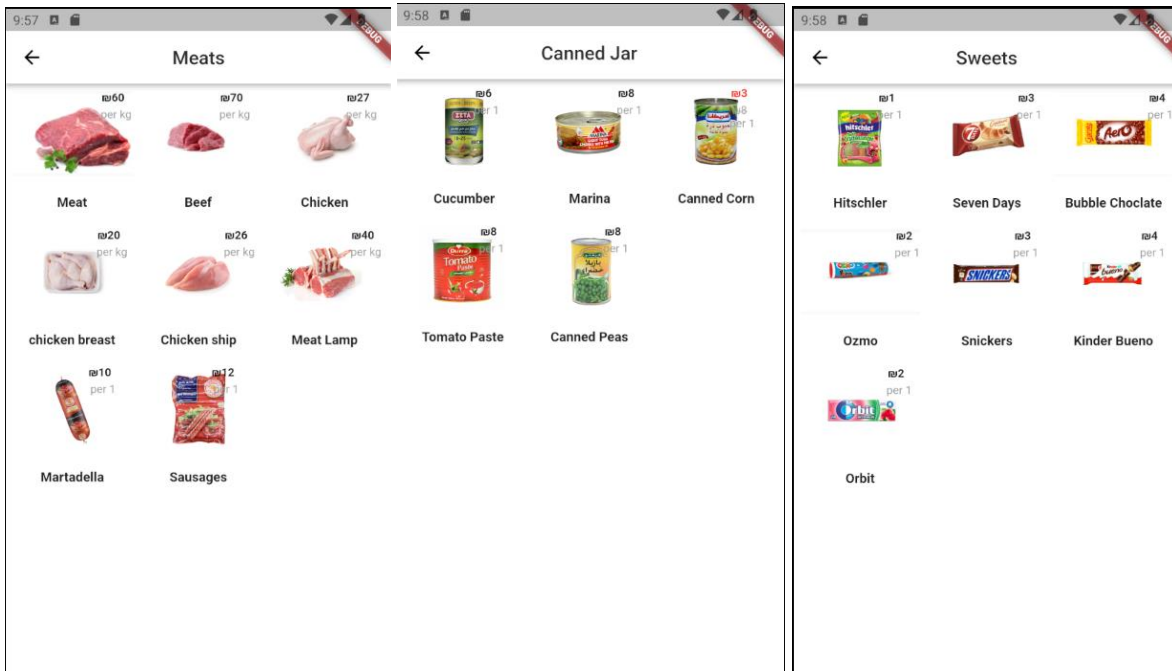


Figure 56 : Item page

Store page : This page contains all the stores in the application. And other pages shown below includes information about each store as well as products for each store in the category.

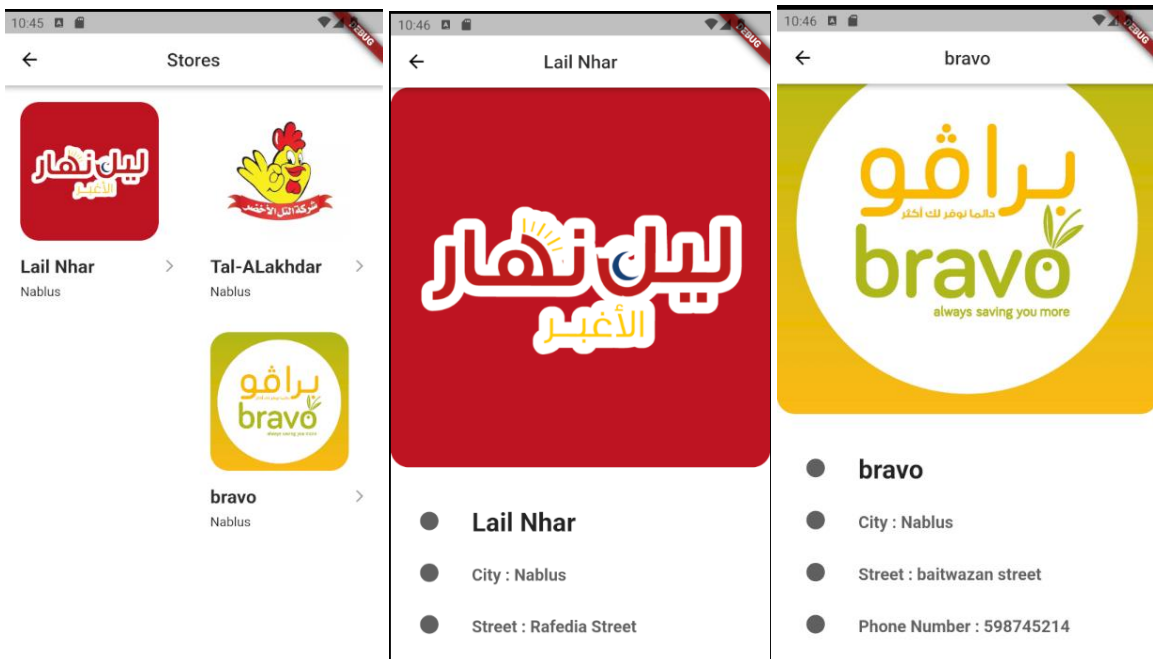


Figure 57 : Store page

Friends page : This page contains a list of the user's friends, as well as a list of friend requests.

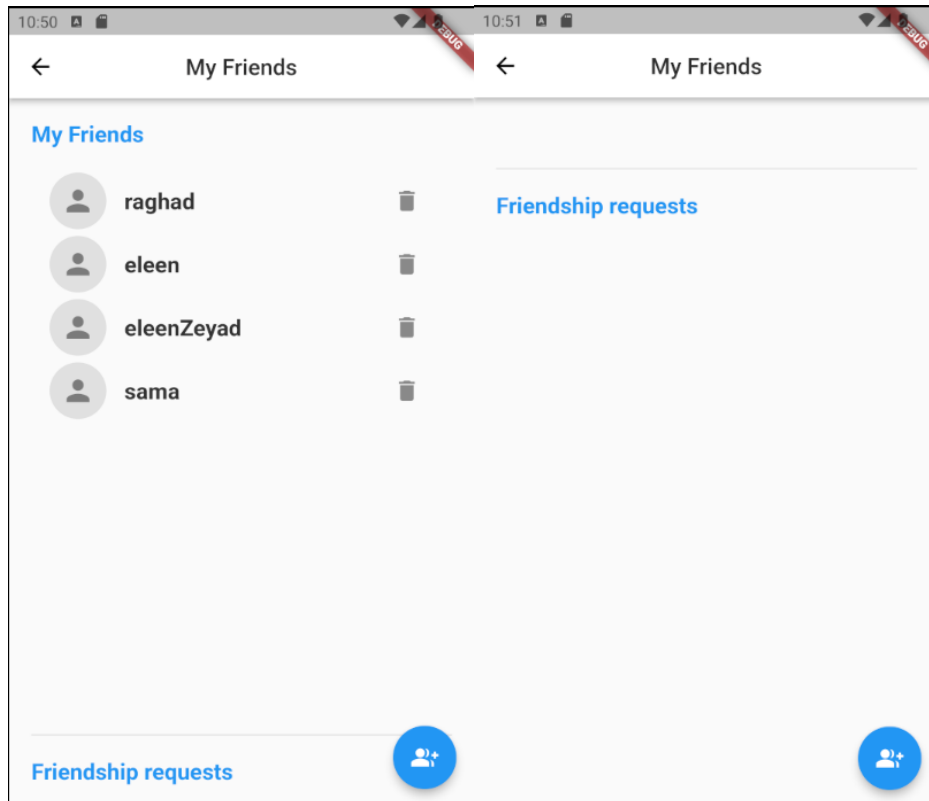


Figure 58 : Friend page

Add Friend request page : On this page, you can search for the user you want to send a friend request to.

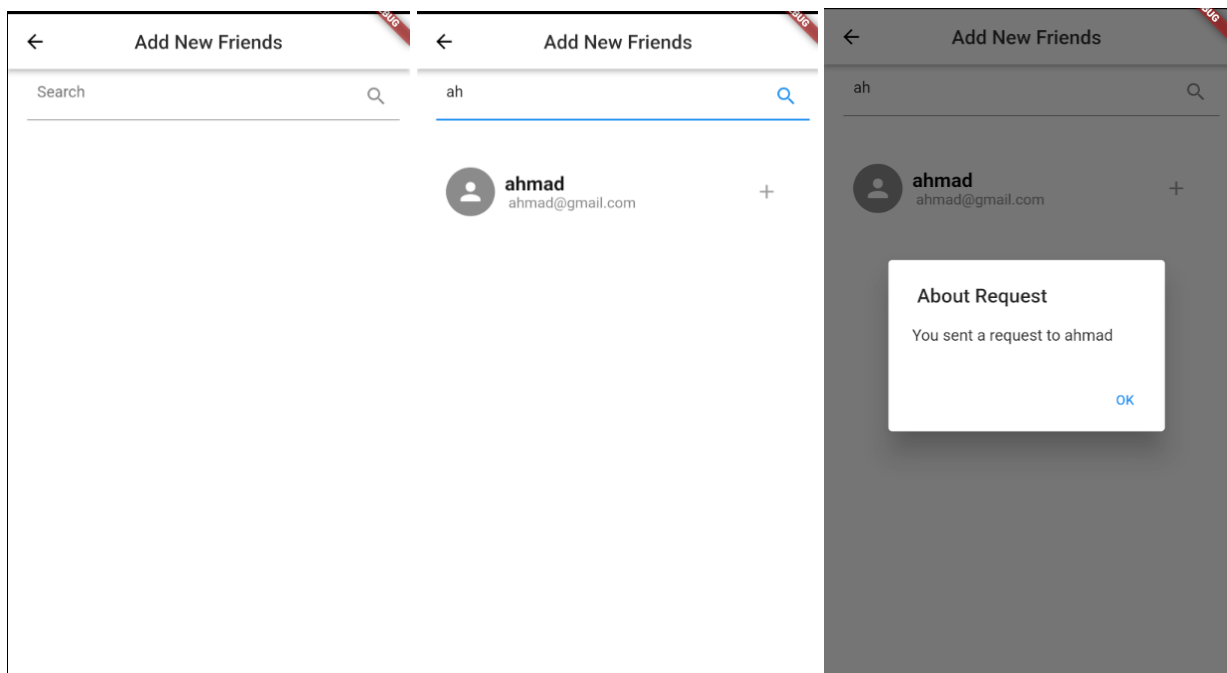
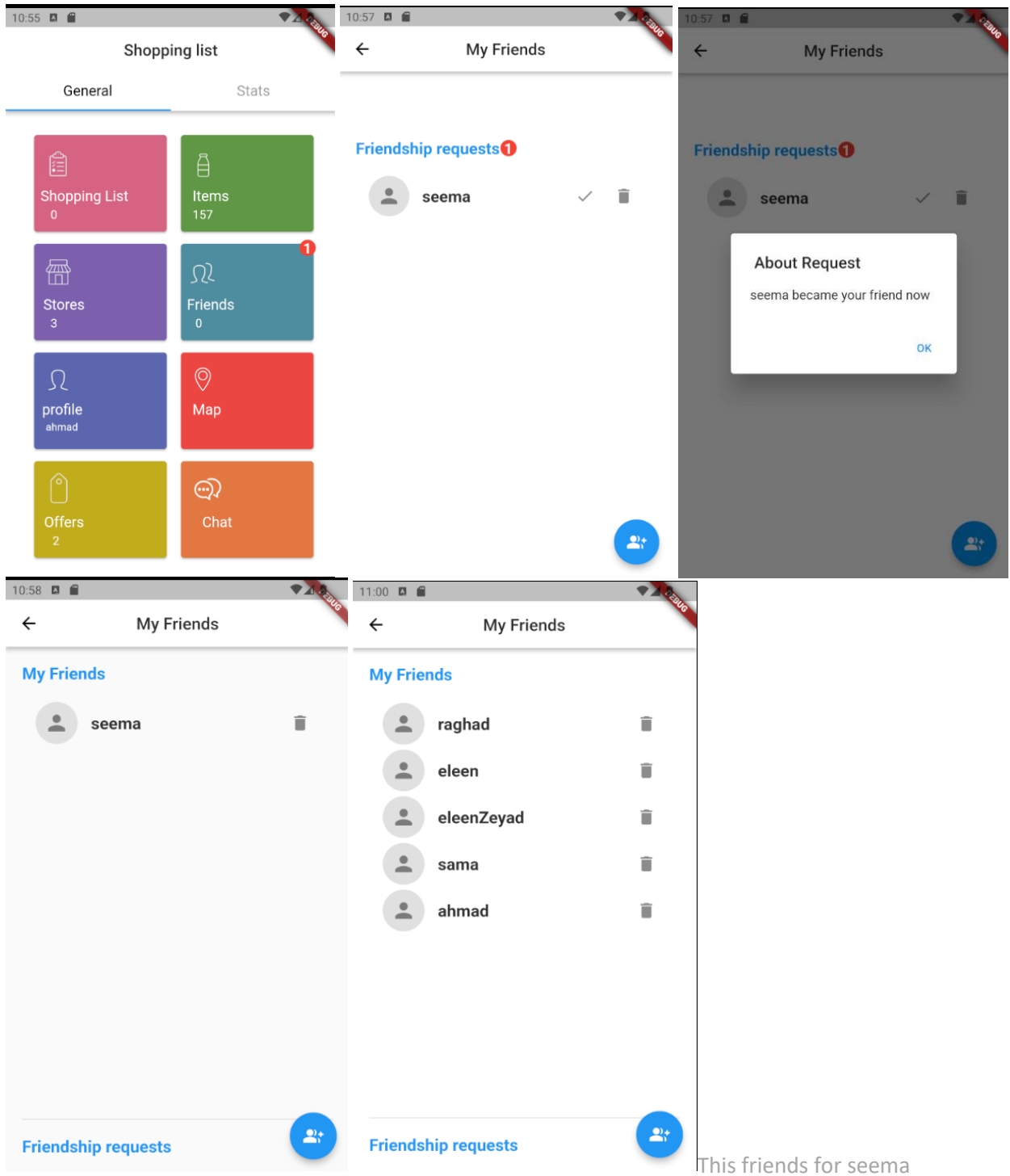


Figure 59 : Add new friend page

On the home page of Ahmed appeared a notification that there is a new friend request.



This friends for seema

Figure 60 : New friend page

Profile page : On this page, the user's personal information is shown, and it can be modified.

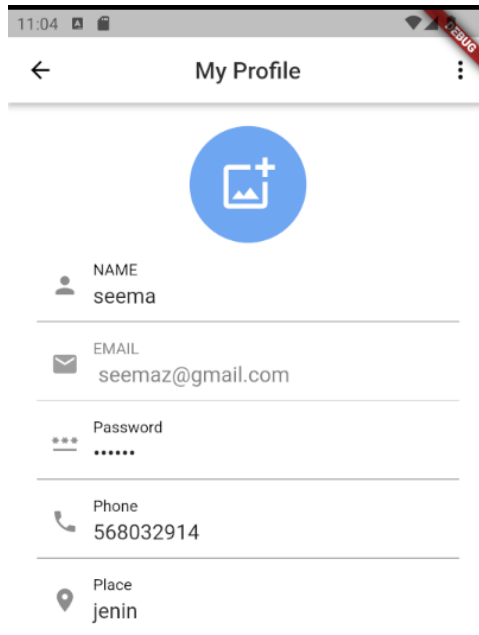


Figure 61 : profile page

Map page : On this page, the user shows his own lists, so that he chooses one of them to track the stores to be purchased from in this list on the map, so that it shows the locations of the stores and the number of products to be purchased from each store, and it calculates the shortest route and the least traffic and tracks its path while driving , During the route, the user's distance is calculated, and a notification is sent to him as he approaches the supermarket.

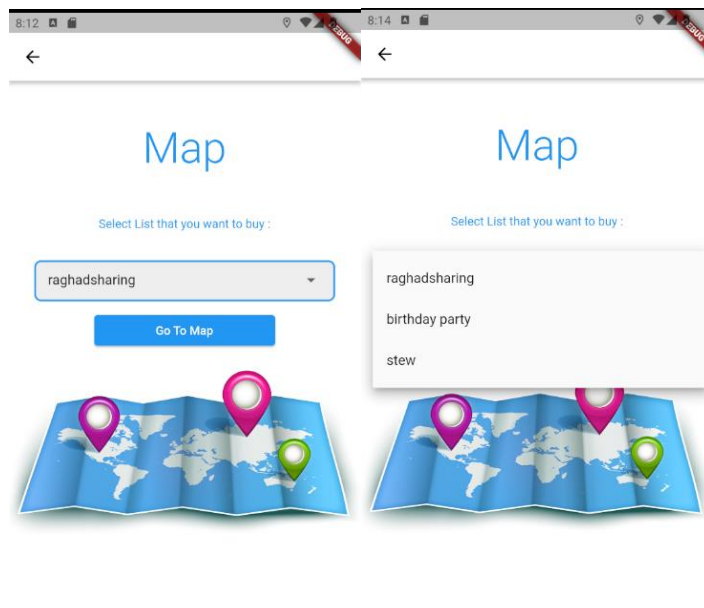


Figure 62 : select list to purchase page

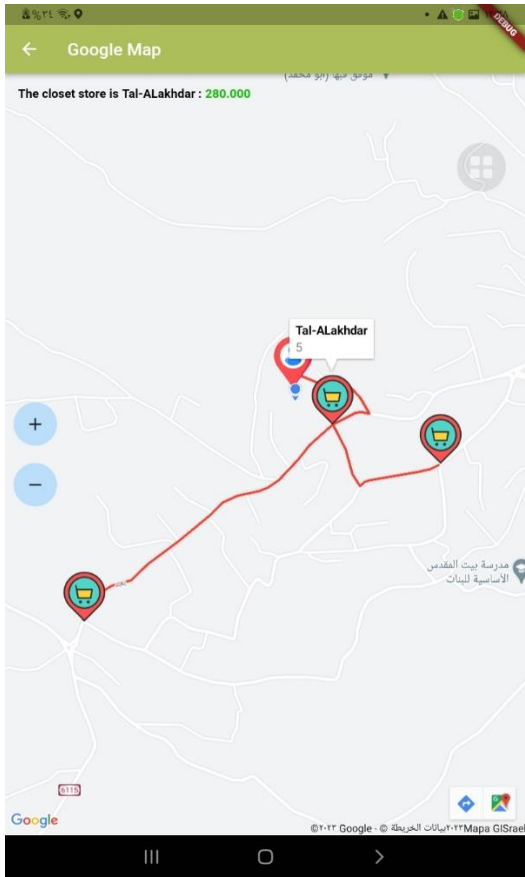


Figure 63 : Map page

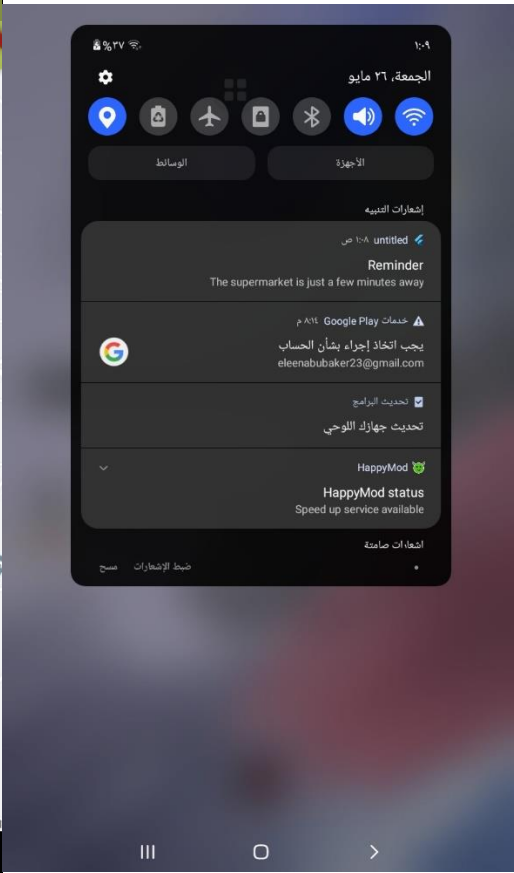


Figure 64 : Notification screen

Offer page : This page displays all items that have been added to offer from all stores.

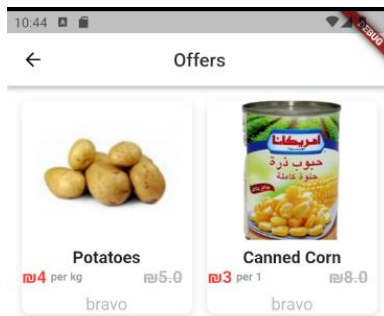


Figure 65 : Offers page

Chat page : This page displays conversations between friends, as well as creating a group between several friends and chatting with them.

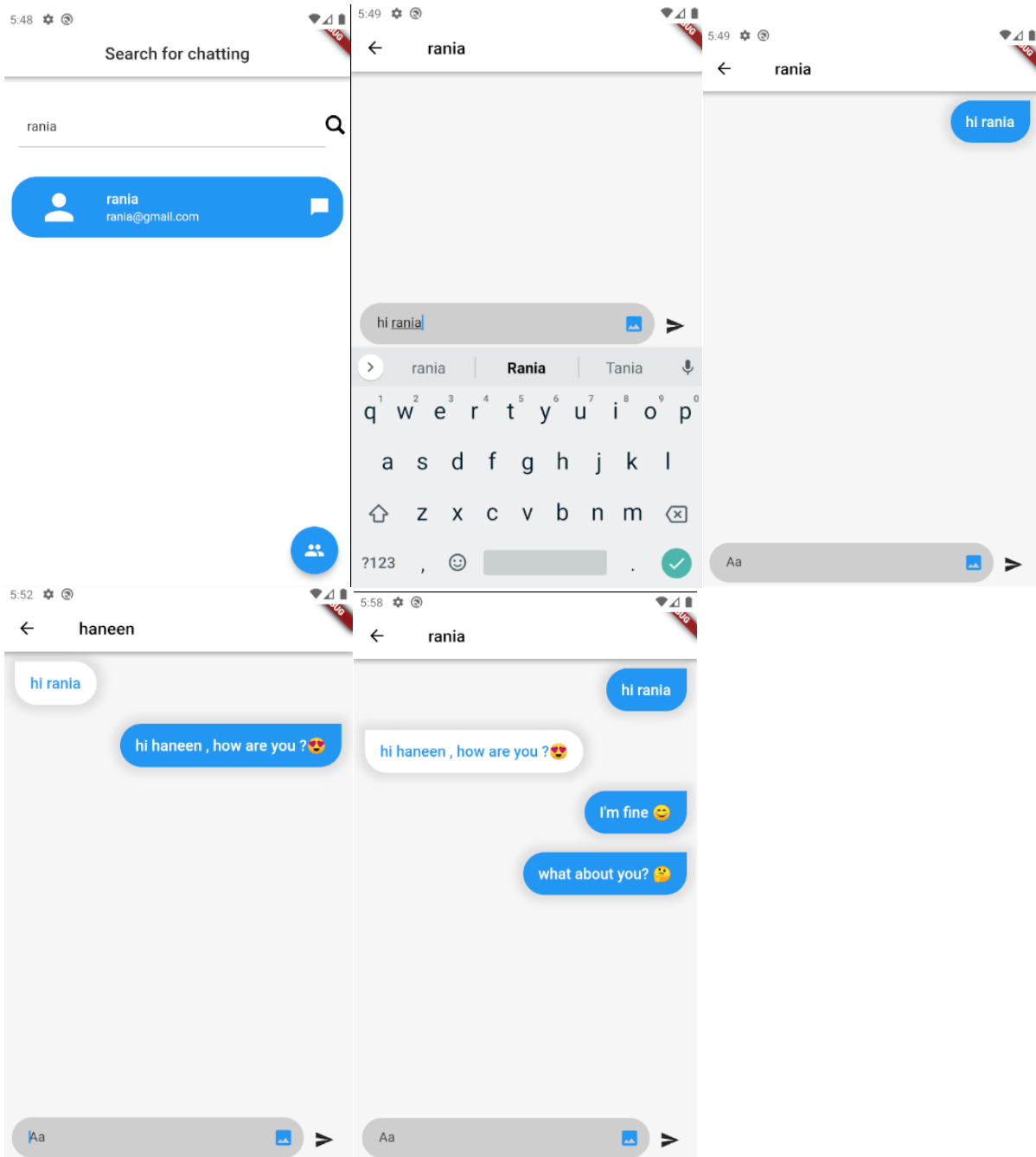


Figure 66 : Chat page

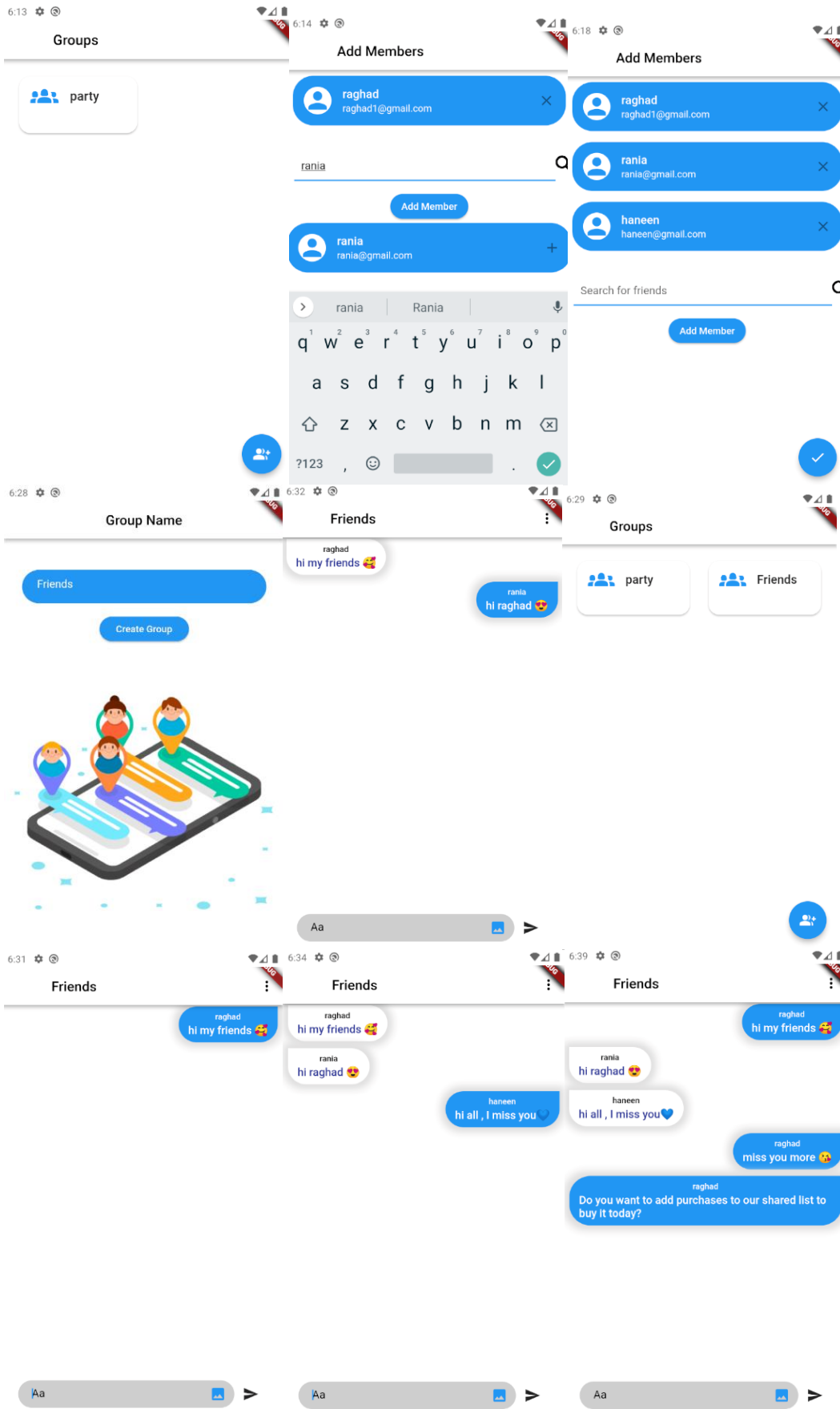


Figure 67: group page

The previous pictures show Raghad creating a group with her friends, Rania and Haneen, and sending messages to them.

Chapter 5 Results and Analysis

Our 'To Buy List' app involved several key aspects of data collection and integration. Firstly, we collected data from various supermarkets to ensure the accuracy and availability of product information. A sample of goods was selected, and these items were manually added to the application's extensive database. This process required considerable time and effort to ensure that the app offers a comprehensive and up-to-date product catalog.

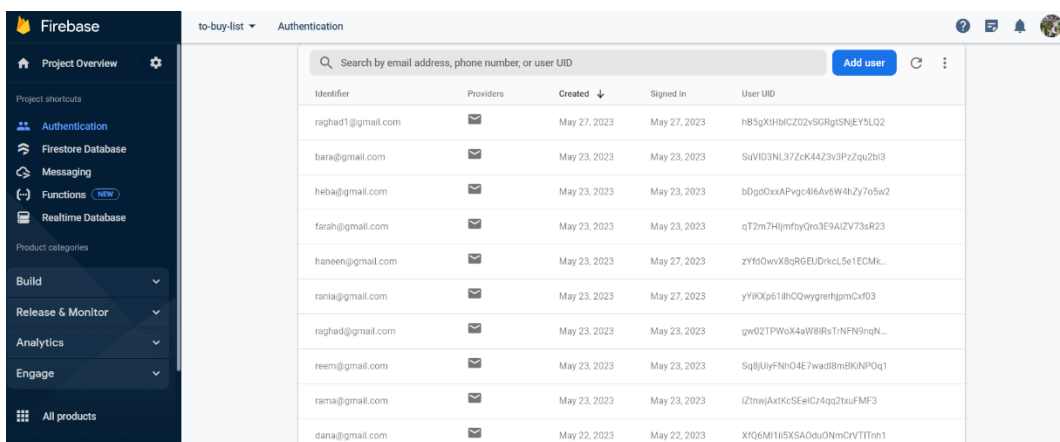
Moreover, we incorporated Google Maps features into our application to provide users with efficient navigation and optimal route planning. The integration of these features posed certain challenges, requiring us to overcome technical hurdles and ensure a seamless user experience. By leveraging the power of Google Maps, users can easily visualize store locations and plan their shopping trips accordingly.

To enhance user engagement and communication, our app is linked to Firebase, a powerful backend platform. Firebase enables us to implement a notification systems, ensuring that users receive timely alerts and reminders about their shopping lists, and store proximity. Additionally, Firebase facilitates seamless communication between application users, allowing them to collaborate, share feedback, and exchange recommendations.

Overall, the inclusion of supermarket data, integration with Google Maps, and linkage to Firebase significantly enhance the functionality and usability of our 'To Buy List' app. These integrations, although challenging at times, contribute to the overall effectiveness and efficiency of the application, ensuring a seamless shopping experience for our users.

Firebase

Authentication page : where all the users of the application are appear .



The screenshot shows the Firebase Authentication page for the 'to-buy-list' project. The page displays a table of users with the following columns: Identifier, Providers, Created, Signed in, and User UID. The table lists several users, including raghad1@gmail.com, bera@gmail.com, heba@gmail.com, farah@gmail.com, haneen@gmail.com, rania@gmail.com, raghad@gmail.com, reem@gmail.com, rama@gmail.com, and dana@gmail.com.

Identifier	Providers	Created	Signed in	User UID
raghad1@gmail.com	📧	May 27, 2023	May 27, 2023	nB5pXtHhWZ02vSGRgTSNIEY5L02
bera@gmail.com	📧	May 23, 2023	May 23, 2023	SuVlD3Nl.37Zck44Z3v3PzZou2b3
heba@gmail.com	📧	May 23, 2023	May 23, 2023	bDgdOxtAPvg4l6Av6W4hZy7o5w2
farah@gmail.com	📧	May 23, 2023	May 23, 2023	qT2m7HjImfzyQro3E9AIzV73sR23
haneen@gmail.com	📧	May 23, 2023	May 27, 2023	zYf9OwvX8qR6EUdKcL5e1ECMk...
rania@gmail.com	📧	May 23, 2023	May 27, 2023	yY9CXp61IhOQwgrhjpMx03
raghad@gmail.com	📧	May 23, 2023	May 23, 2023	gw02TPW0x4w8lRst1NFN9nqN...
reem@gmail.com	📧	May 23, 2023	May 23, 2023	Sq8UiyFNh04E7wadl8mBKINPDq1
rama@gmail.com	📧	May 23, 2023	May 23, 2023	iZTmjAxtKcSEalC24qz2t1xUFMF3
dana@gmail.com	📧	May 22, 2023	May 22, 2023	XfQ6M1h1SKSA0duDNmCrVTITh1

Figure 68: Authentication page

firebase database: where all the conversations between users are stored, as well as all groups they have created .

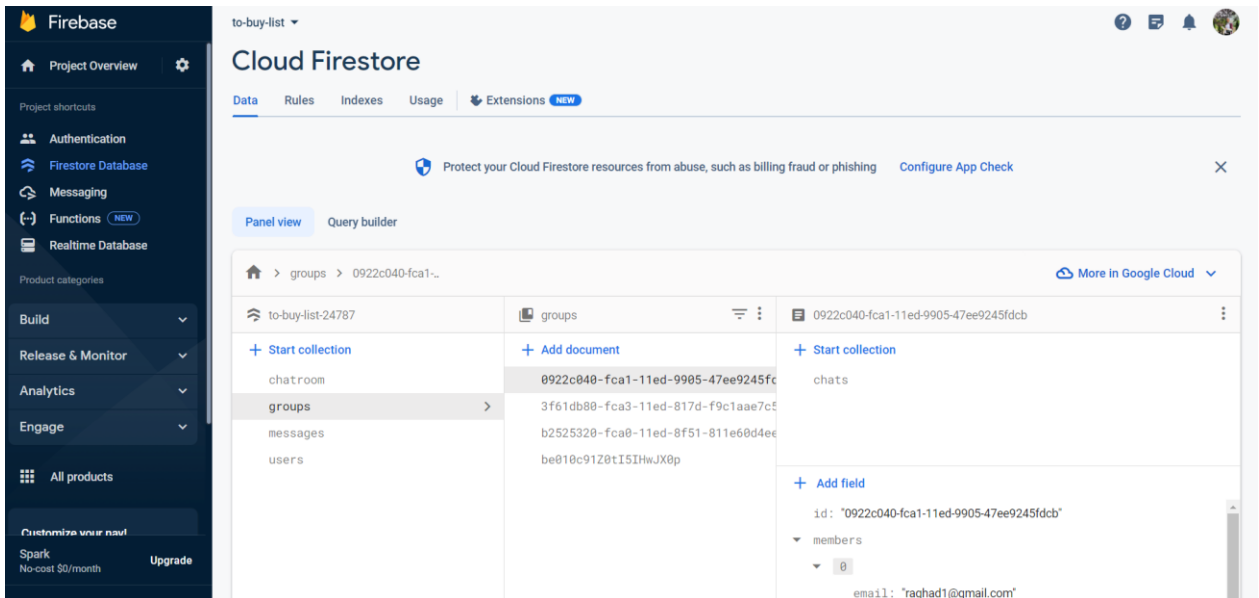


Figure 69: firebase database page

Notifications page : where all the notification stored.

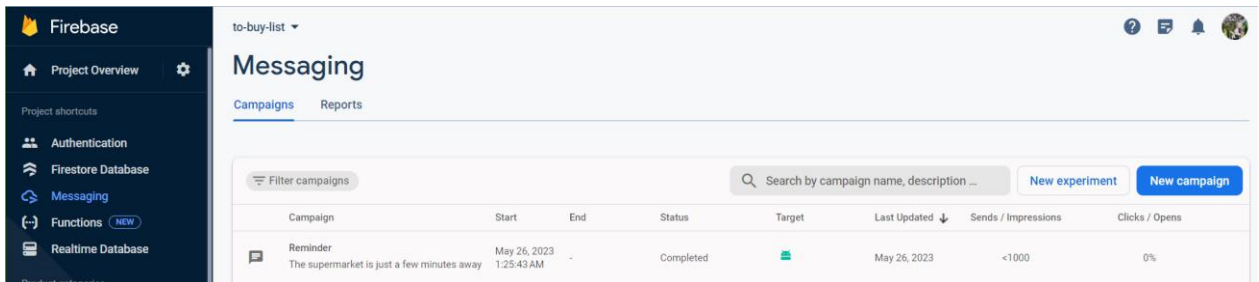


Figure 70: Notifications page

Chapter 6

Discussion

We have successfully implemented a smart system that calculates the shortest path to stores for an optimized shopping experience. This feature ensures that users can efficiently complete their purchases with minimal travel distance, as indicated by the calculated routes displayed on an integrated map.

Furthermore, our app incorporates a notification system that alerts users when they are approaching a store from their shopping list. This real-time reminder not only saves users time but also keeps them informed about their pending purchases. Additionally, our app tracks users' monthly expenses, allowing them to monitor their spending habits and make informed financial decisions.

The website component of our project serves as a comprehensive platform for supermarkets within a specific area. Users can suggest stores, which are then verified and added by the admin. Supermarkets can also request to display their goods, prices, and offers on the site, providing users with up-to-date information to aid their purchasing decisions.

One of the unique features of our app is the ability to share the shopping list among family members. Married couples and parents with children can collaboratively manage the list, mark items as purchased, and even receive requests from children to add specific items. This promotes seamless coordination and ensures that everyone's needs are accounted for.

Our app goes beyond the basic functionality of reminding users to purchase items. It offers monthly reports on purchases and expenses, empowering users with valuable insights into their buying patterns. Furthermore, our system utilizes advanced algorithms to notify users of potential discounts and deals, enabling them to take advantage of cost-saving opportunities.

Through our research, we have discovered a significant gap in the market for an application that combines manual list creation, store mapping, and real-time reminders. Our app fills this void, providing a much-needed solution for users in our country who seek a comprehensive and user-friendly tool to enhance their shopping experience.

Chapter 7

Conclusions and recommendations

7.1 Conclusion

The 'To Buy List' app has successfully met the need for an efficient and streamlined shopping experience through its development and implementation. Through the integration of smart algorithms, Google Maps, and Firebase, we have created a comprehensive solution that simplifies the process of creating, managing, and fulfilling shopping lists.

The analysis of data collected from supermarkets and the implementation of route optimization algorithms have demonstrated the effectiveness of our app in minimizing travel distances and optimizing the shopping process. By providing users with the shortest path to stores, we have successfully saved time and effort, ensuring a more efficient shopping experience.

The integration of Google Maps has been useful providing accurate navigation and displaying store locations on a map. This feature allows users to easily visualize store proximity and plan their shopping trips accordingly, enhancing convenience and reducing the chances of missing out on essential items.

The incorporation of Firebase has enabled us to implement notification systems and facilitate communication within the app. Notifications serve as timely reminders for users when approaching stores or when certain goods on their list are on sale. Additionally, Firebase provides a platform for seamless communication between users, allowing for collaboration and sharing of lists among family members.

7.2 Recommendations

Based on the successful implementation of our 'To Buy List' app, we recommend the following for further improvement and expansion:

Continuous Database Updates: Regularly updating the supermarket database with accurate and up-to-date information ensures that users have access to the latest product listings and prices. Collaborating with supermarkets to maintain an ongoing partnership for data synchronization is recommended.

Integration with Additional Mapping Services: While Google Maps provides effective navigation, considering the integration of other mapping services can offer users more options and flexibility, catering to their individual preferences.

Enhanced Personalization: Implementing personalized features such as product recommendations based on user preferences and past purchases can further improve the app's ability to meet individual shopping needs.

Seamless Integration with Online Platforms: Exploring partnerships with popular online shopping platforms to seamlessly integrate online ordering and delivery services within the app can provide users with a comprehensive shopping experience.

Regular Maintenance and Performance Optimization: Continuous updates and performance enhancements should be prioritized to ensure the app remains efficient, reliable, and compatible with

the latest operating systems and devices.

By implementing these recommendations, we can further enhance the functionality and performance of our 'To Buy List' app, offering users an optimized and convenient shopping solution.

References

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[2] FIROZ, Abdulqader; RATNAYAKA, Gayashini. Shoplister—a grocery list management application. In: 2020 International Conference on Image Processing and Robotics (ICIP). IEEE, 2020. p. 1-6.

[3] CHATTERJEE, Nilanjan, et al. Real-time communication application based on android using Google firebase. Int. J. Adv. Res. Comput. Sci. Manag. Stud, 2018, 6.4.

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