Faculty of Computers & Informatics

Benha University

Flutter

Computer Science Departement,

Project Team

1- Yahia Mohammed Mansour Hassan Hamza
2- Mohammed Sabry Mahmoud Shehabeldin
3- Hadi Rabee Kamel Alam Heikal
4- Eslam Hany Elsayed Zoghla
5- Taha Ebrahim Taha Ebrahim
6- Gamal Adel Gamal Khalifa
7- Soliman Mahmoud Soliman Elsayed
8- Fatma Ebrahim Kamel Ebrahim
9- Marwa Sayed Farghaly Sayed Ahmed

Under Supervision of

Dr. Amr Nagy

Eng. Jamal

List of Contents

	Content
1	Acknowldgement
2	Project introduction
3	Project description
4	Project Goals & Objectives
5	MAPPING
6	SDLC [SWE]
7	Technology Stack
8	App Roles
9	App Screens

1.Acknowldgement

We extend our heartfelt gratitude to **Professor Amr Nagy** and **Engineers Gamal, Mohamed Ibrahim and Hossam Fares** for their exceptional support and encouragement throughout this endeavor. Their unwavering commitment to our success is truly commendable. Their guidance has been instrumental in shaping our work, as they generously shared their wealth of knowledge and provided invaluable advice, pushing us to strive for excellence. We appreciate their continuous support, kind communication, and dedication to fostering an environment that instills genuine enthusiasm for our project. Our sincere thanks to both for their indispensable contributions; we are truly grateful for the impact they have had on our journey.

2. Project introduction

There is no person who does not have the need for grocery shopping to fulfill their daily requirements, including general food items and other products such as snacks and candies.

Nowadays, all grocery store owners aim to expand their operations and enhance accessibility to their services, striving for a competitive edge against each other. This is to ensure customer comfort and, undoubtedly, to increase profits.

So, we have decided to implement this project to serve both grocery owners and customers. Our project takes the form of a mobile application that acts as a bridge between grocery owners and customers. This user-friendly mobile application is designed to streamline and enhance the grocery shopping experience for both parties. By leveraging the power of technology, our application aims to narrow the gap between consumers and local grocery stores, providing a convenient platform for seamless transactions.

Our Flutter Grocery Delivery App, a user-friendly solution to modernize your grocery shopping experience. Built on the Flutter framework, this app tackles common challenges of in-person grocery shopping. With an easy-to-use interface, it caters to users of all tech levels for a smooth shopping experience. Browse through a

wide product catalog from trusted local vendors, including fresh produce. Smart search and filters help you find products quickly. Track orders in real-time, schedule deliveries. Prioritizing both user convenience and data security, our app ensures a secure and elevated grocery shopping experience.

Our project introduces a streamlined and user-centric application featuring fundamental login and register screens, underscoring simplicity and ease of use. Upon creating an account, users gain the capability to personalize their profiles and manage information. The interface is thoughtfully designed to facilitate navigation, allowing users to seamlessly browse through a selection of categories, ensuring a tailored experience. The core functionality enables users to peruse products within these categories, selecting items that align with their preferences. Once the shopping process is complete, users can effortlessly place orders, emphasizing efficiency in every step of the transaction. Our project's emphasis on user account management and a straightforward ordering process collectively contribute to a user-friendly and functional application, making the entire shopping experience both personalized and uncomplicated, Welcome to the future of grocery shopping with the Flutter Grocery Delivery App.

3. Project Description

Our Grocery Application is a comprehensive mobile application designed to streamline the grocery shopping experience for users. Developed using the Flutter framework, the app offers a seamless and user-friendly interface, catering to both Android and iOS platforms, an efficient state management, and a set of features that facilitate seamless navigation, product selection, and checkout. The primary goal of the project is to offer users a convenient and efficient way to purchase groceries through their mobile devices.

Briefly, Our Grocery Application is a fully functional, cross-platform mobile application available on iOS and Android devices. Users can download the app, create accounts, browse a wide range of grocery products, add items to their cart, and securely complete transactions. The application's user-friendly design and efficient state management contribute to a smooth and satisfying grocery shopping experience, meeting the project's goal of simplifying, and enhancing the way users purchase groceries through their mobile devices.

4.Project Goals & Objectives

1. **Ease of accessibility.**

To accomplish this task the application must be cross platform because businesses owners will not risk missing their presence and losing a competitive advantage.

2. **Usability.**

The application must provide an assistant, an easy user interface and high-quality experience to attract customers.

3. **Customer Registration and Profiles.**

Customers can create personalized profiles, enabling them to save preferences, track order history, and receive personalized recommendations.

4. **Grocery administration.**

The application must provide an easy way for managing all grocery services and products and managing users' orders.

5. **Real-time Inventory Updates.**

Grocery store owners can update inventory in real-time, reducing the chances of customers ordering out-of-stock items.

6. **Product Catalog.**
   - A comprehensive catalog featuring a wide range of grocery items categorized for easy navigation.
   - Detailed product descriptions, images, and prices aid customers in making informed decisions.

7. **Smart Search and Filters.**

Robust search functionality and filters help customers quickly find specific products or browse through categories.

8. **Shopping Cart and Order Management.**

Customers can easily add items to their virtual shopping carts, review their selections, and manage orders before finalizing the purchase.

9. **Promotions and Discounts.**

Grocery store owners can promote special offers and discounts, attracting customers and fostering customer loyalty.

10. **Delivery Options.**

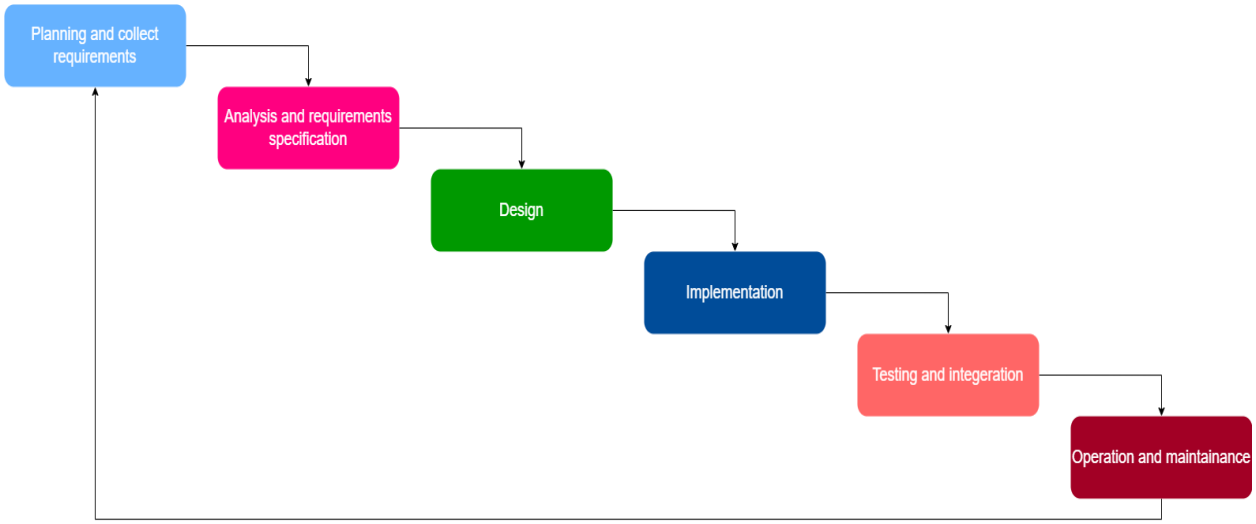
Flexible delivery options, including scheduled deliveries and express delivery for urgent needs.

5. Mapping

Admins
adm_username
adm_fullName
adm_password
adm_phoneNum
adm_img
Categories
cat_id
category
Users
user_username
user_fullName
user_password
user_phoneNum
user_img
Products
prod_id
prod_name
prod_amount
prod_brand
prod_old_price
prod_new_price
cat_id
Users_address
user_username
user_address
address_title
Products_images
prod_id
prod_img
Orders
ord_id
ord_date
ord_status
ord_location
user_username
Orders_elements
ord_id
prod_id
ord_quantity

6. SDLC

This project is deemed as a simple and small-scale endeavor, necessitating a model with a straightforward architecture capable of addressing its requirements, encompassing meticulous planning and clear specifications for a well-defined project release. Consequently, we have opted to employ the **Waterfall** Model.



1. **Planning and collect requirements:** Planning sets project goals and timelines, while requirements gathering systematically collects user needs and system functionalities. These crucial initial phases establish a roadmap for development, ensuring a clear understanding of project expectations and laying the foundation for successful execution.

2. **Analysis and requirements specification:** Analysis breaks down collected requirements for a detailed understanding, while Requirements Specification produces a comprehensive document defining project functionalities. These phases provide clarity and guidance for the development team, serving as a crucial foundation for subsequent implementation stages.

3. **Design:** The Design phase follows Analysis and Requirements Specification. It focuses on creating a detailed blueprint for the system, encompassing both high-level architecture and specific component designs. This phase translates requirements into a structured plan, ensuring scalability and reliability. The resulting design serves as a roadmap for developers, guiding the efficient implementation of the software during the coding phase. In our project we made database design and user interfaces design in this phase with the help of "Figma" website.

4. **Implementation:** The Implementation phase involves writing the actual code based on detailed design specifications. Developers translate planned system architecture into executable code, ensuring adherence to coding standards and conducting testing during the process. This hands-on stage transforms theoretical design into functioning software, setting the stage for testing and deployment.

5. **Testing and integration:** Testing and Integration follow the Implementation phase. Testing involves systematically evaluating the software through unit, integration, and system testing to identify and rectify defects. Integration focuses on combining individual components into a cohesive whole. Both phases are crucial for ensuring the software's reliability, functionality, and overall quality before deployment.

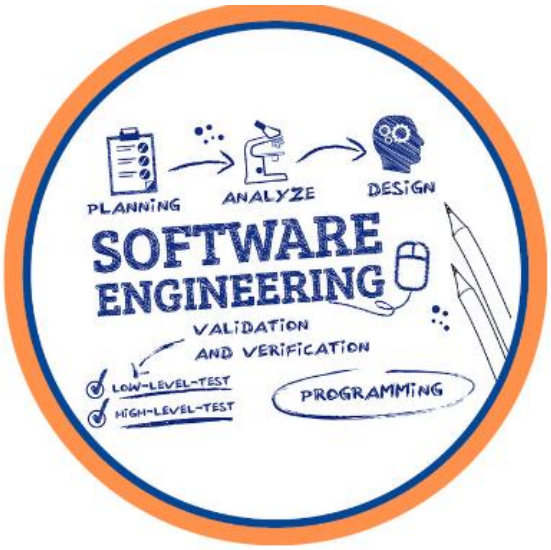
6. **Operation and maintenance:** This phase involves deploying the software for actual use, conducting user training, and establishing support mechanisms. Ongoing maintenance includes updates, enhancements, and troubleshooting to ensure the software's long-term viability, effectiveness, and adaptation to evolving requirements and the operating environment.

7. Technology Stack

All this application was developed using flutter framework and dart programming language.

For the database storage we have chosen “sqflite” because its compatibility and easy connection with flutter in the future the project will enhanced to store its data on a cloud server.

For state management in flutter, we use “Cubit” which is a state management library built on top of Flutter's Bloc library. It provides a lightweight and reactive approach to managing state in Flutter applications. A Cubit is a special kind of Bloc that doesn't require events and is mainly used for simple state management.



8. App Roles

Admins

The administrator within the application holds the responsibility for overseeing both the environment and the products featured in the grocery store integrated into the application. To access the system, the administrator is required to obtain a username ending with “@grocery.admin” and a confidential password. Once authenticated, the administrator gains the flexibility to log in to the system using a mobile device from any location and at any time.

In terms of responsibilities, the administrator's role includes the management of categories within the grocery application, followed by the meticulous oversight of products within each category. Under product management, the administrator can effortlessly add new products, providing comprehensive details such as description, name, price, quantity, discounts, and brand. Moreover, the application is equipped with the capability to accommodate multiple product images, ensuring clarity for users. Also, the system will provide filtering and searching facilities for products to ease its management process.

In cases where issues arise or new requirements with stored data, the administrator possesses the capability to promptly edit or remove data from the application. The system also facilitates profile management, enabling administrators to update their personal information and add a profile photo for a personalized touch.

Users

The system is designed to cater to these users and customers, and to effectively serve them, the initial step involves gaining access to the system and utilizing its services. Users can accomplish this by registering and obtaining a username and password through the dedicated registration page, with usernames in this context required to end with "@grocery.user". Once registered, they can efficiently utilize the system.

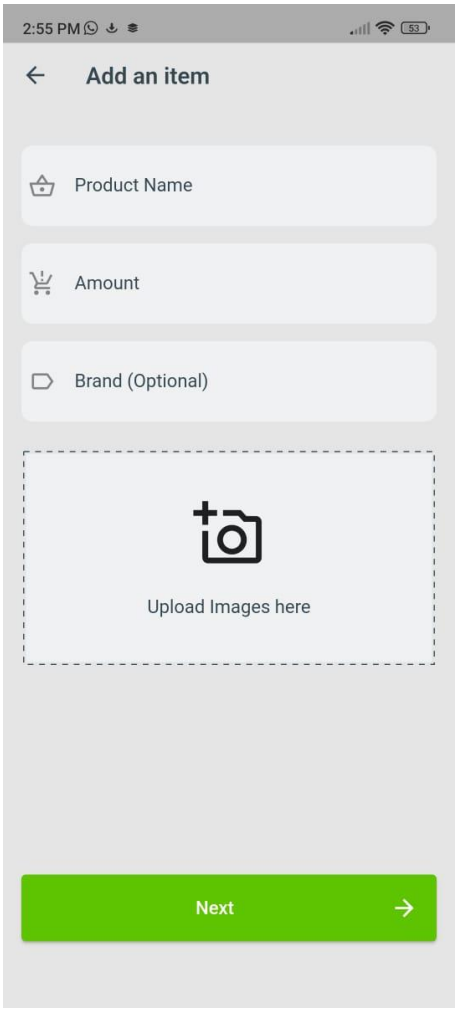
Within the application, users can navigate through products and categories, accessing information on prices and discounts. The system also facilitates the process of placing orders, allowing users to specify quantities for each product and include their delivery address. Additionally, users can track the status of their orders and maintain a detailed history of past transactions. To enhance user experience, the system incorporates filtering and searching techniques, making navigation seamless.

The system further offers an intuitive method for managing user profiles and personal information, allowing users to upload a personal photo for a personalized touch.

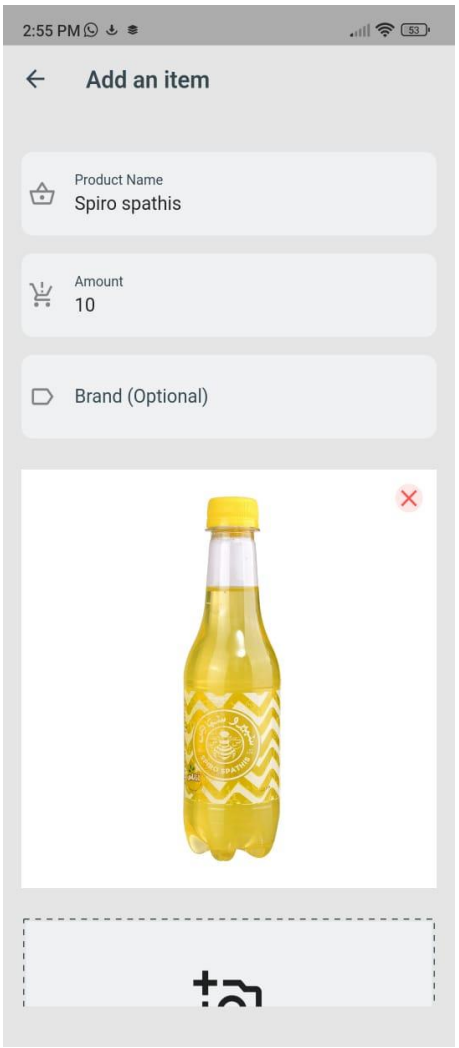
9. App Screens

- Admins

Add an Item

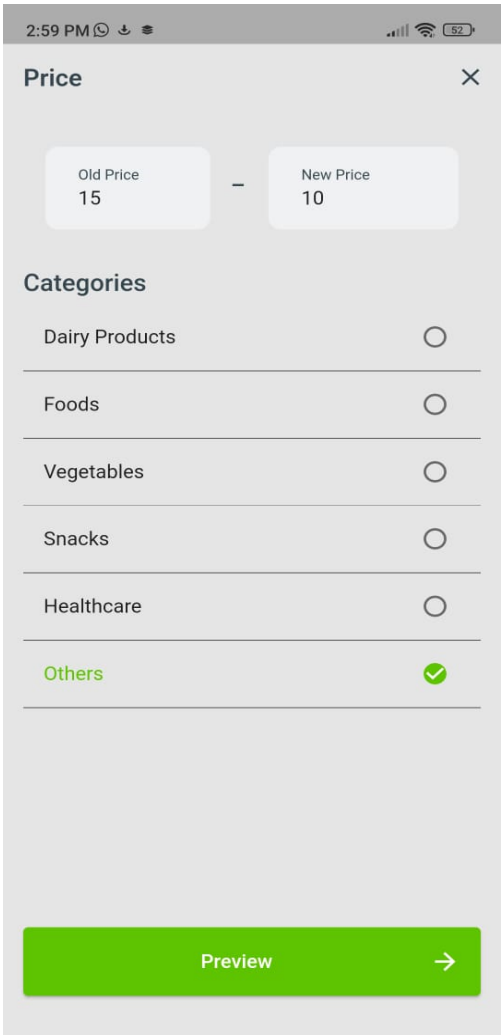


Add an Item

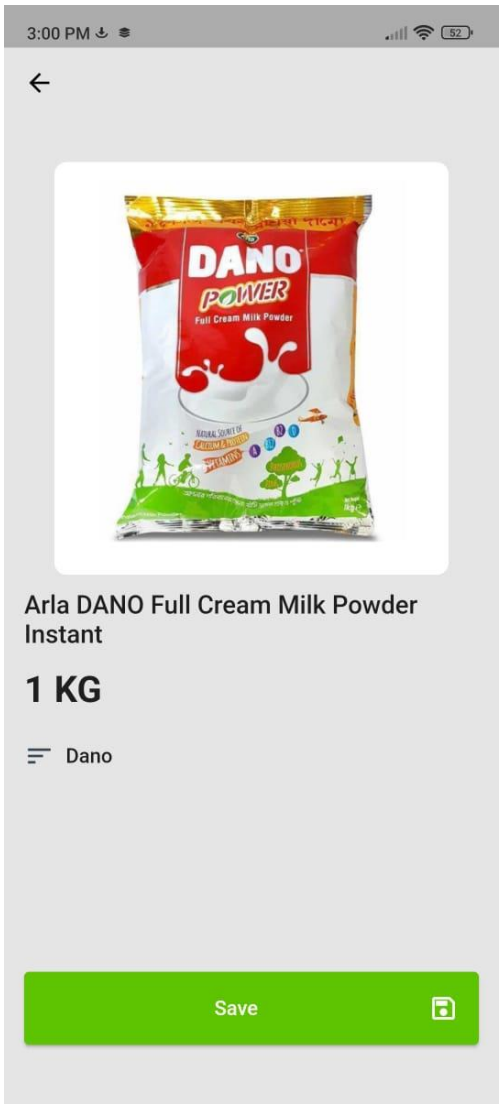


- Admins

Identify Price and categories

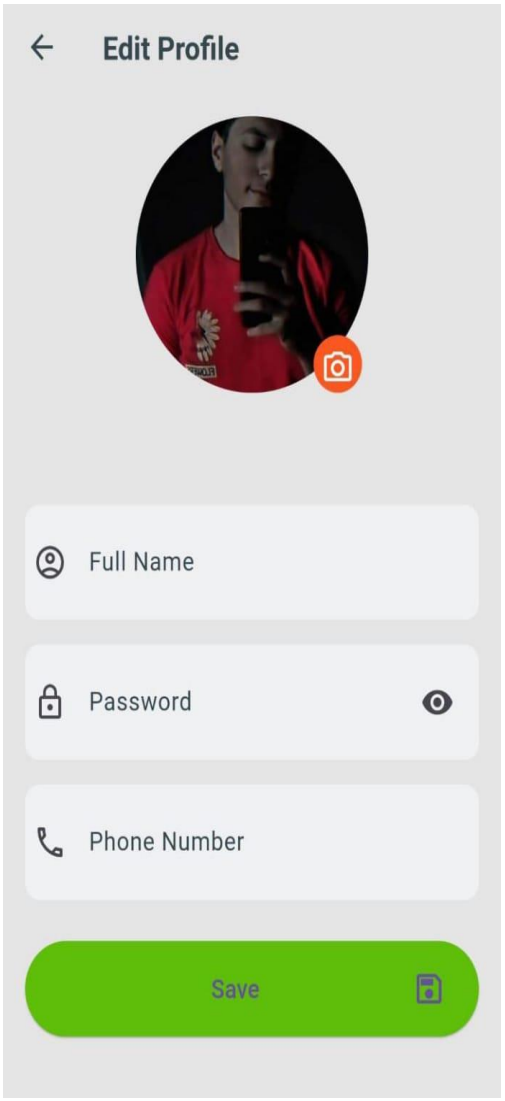


Save Product

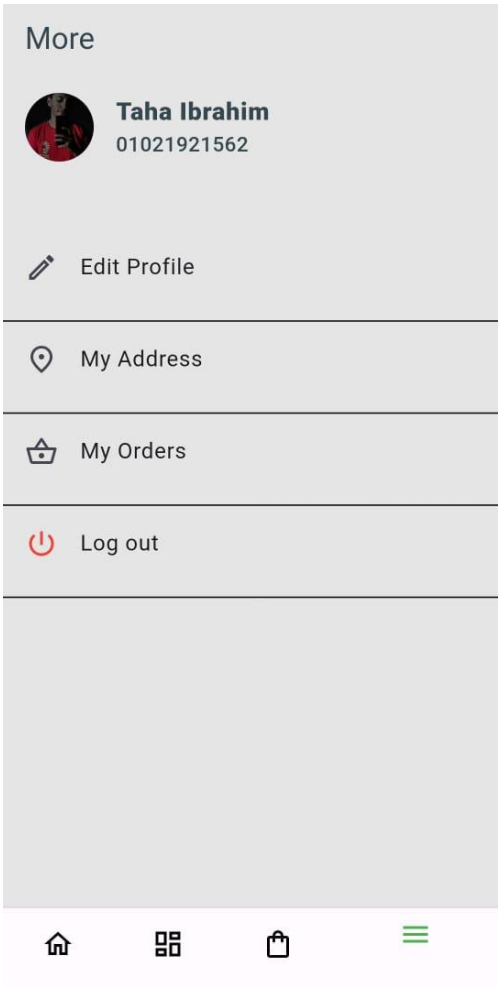


- Admins

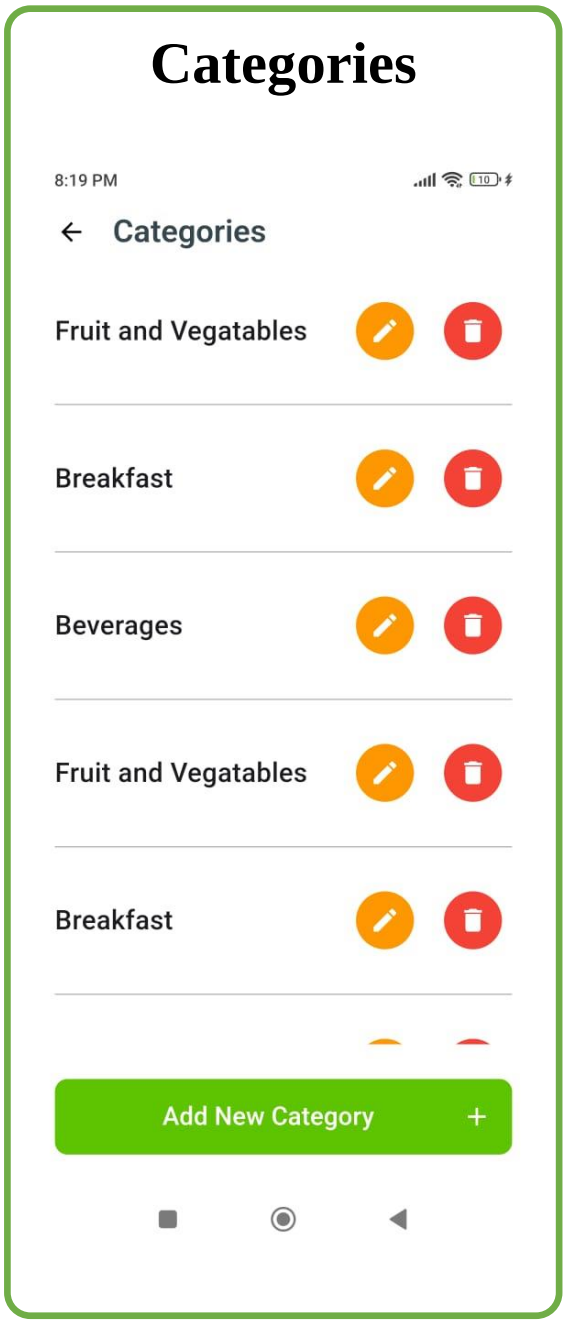
Edit Profile

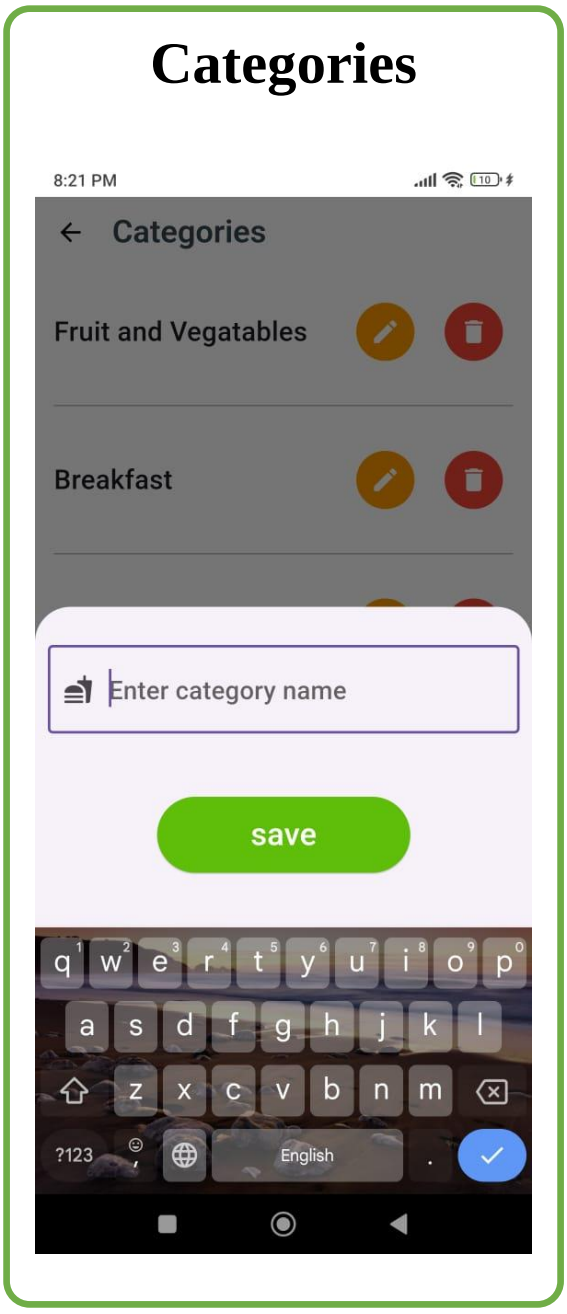


Edit Profile

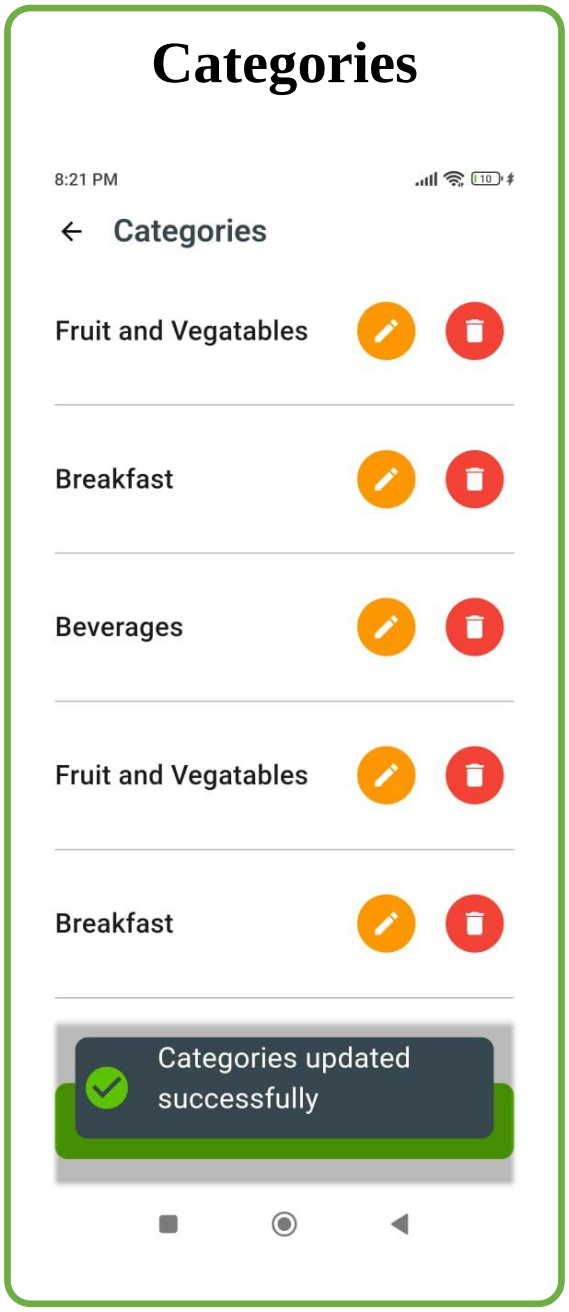


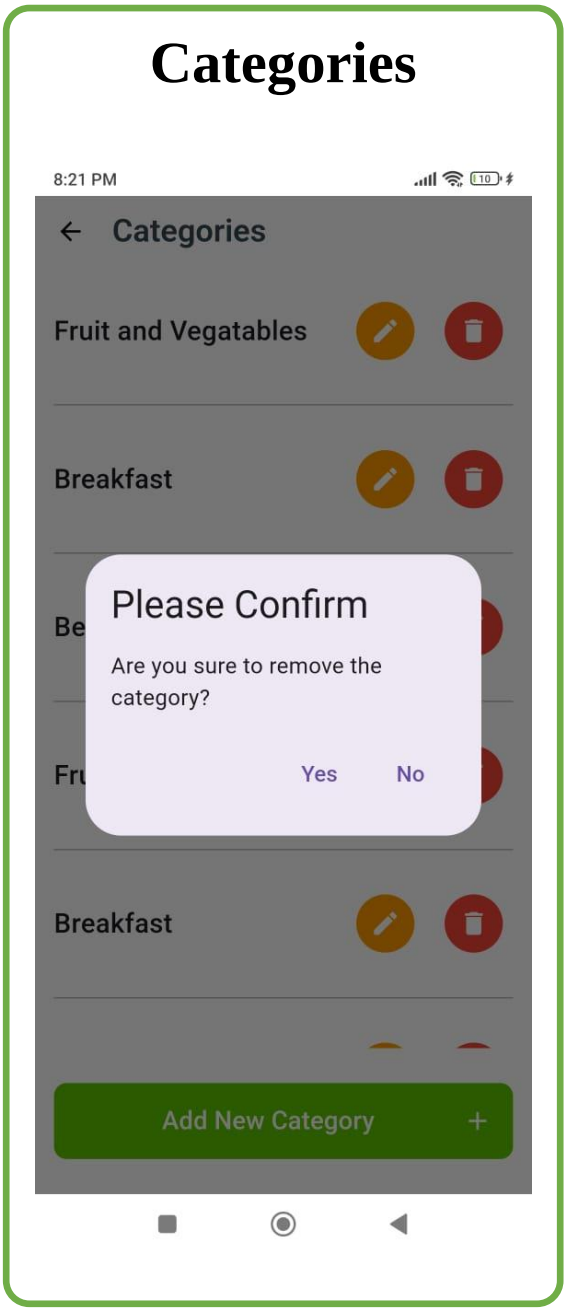
- Admins


Categories
8:19 PM
Categories
Fruit and Vegatables
Breakfast
Beverages
Fruit and Vegatables
Breakfast
Add New Category +


Categories
8:21 PM
Categories
Fruit and Vegatables
Breakfast
Enter category name
save
English

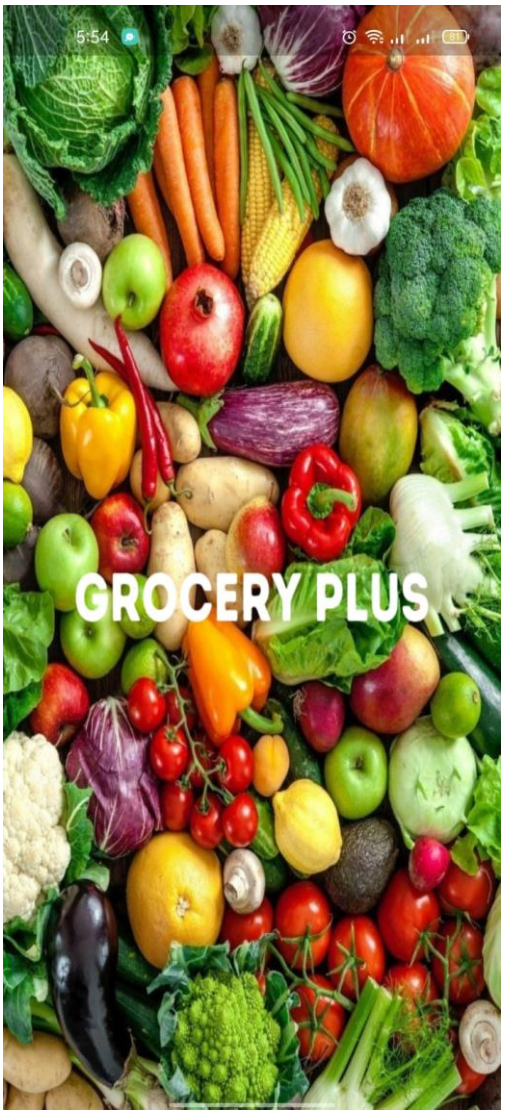
- Admins


Categories
8:21 PM
Categories
Fruit and Vegatables
Breakfast
Beverages
Fruit and Vegatables
Breakfast
Categories updated successfully

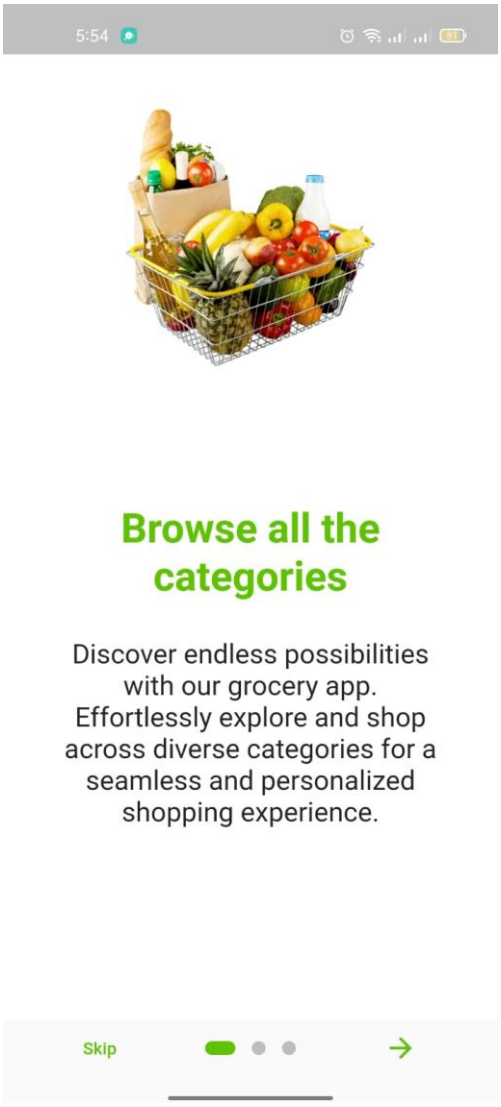

Categories
8:21 PM
Categories
Fruit and Vegatables
Breakfast
Please Confirm
Are you sure to remove the category?
Yes
No
Breakfast
Add New Category

- User

Splash Screen

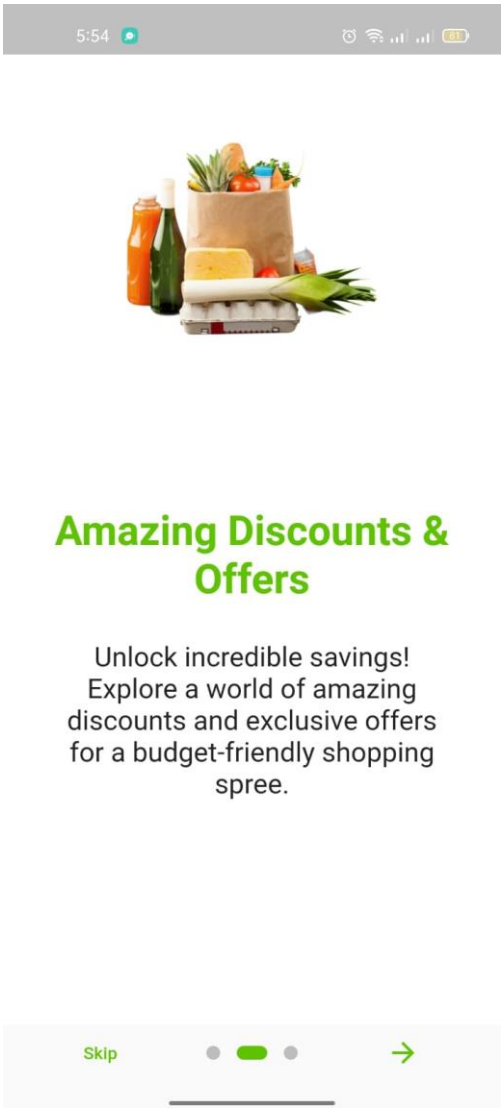


Onboarding Screen 1

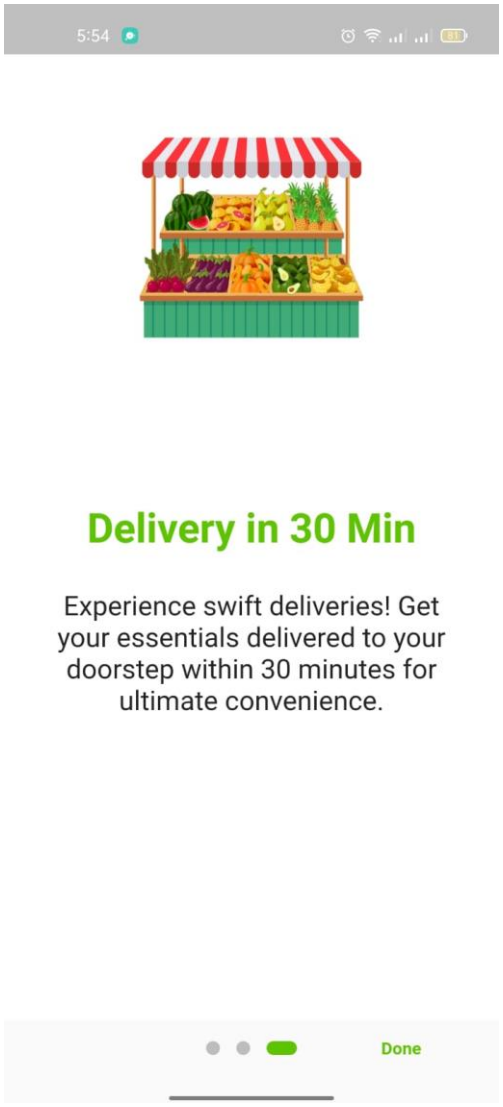


- User

Onboarding Screen 2

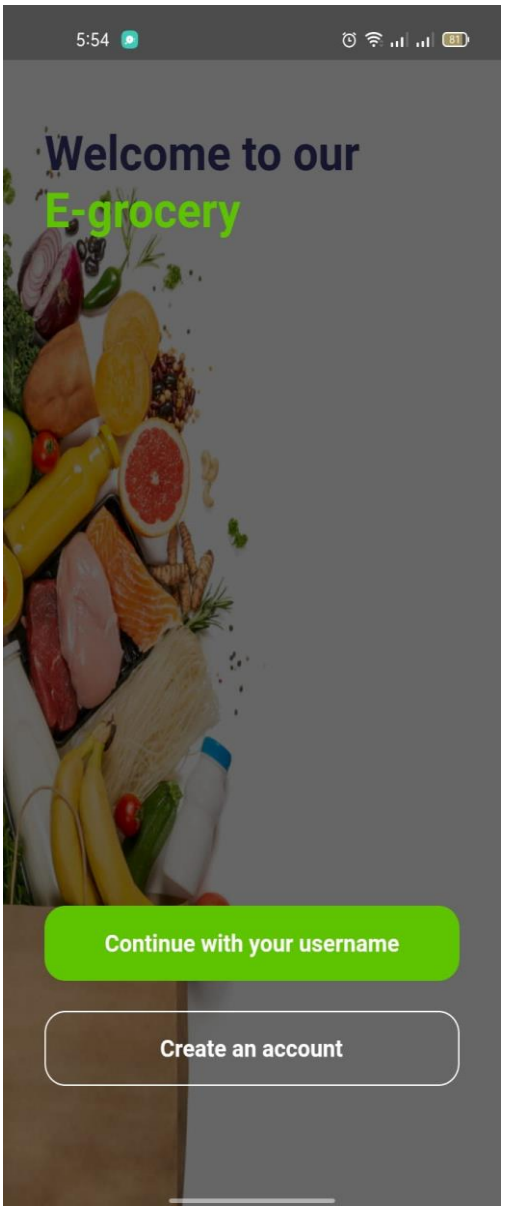


Onboarding Screen 3

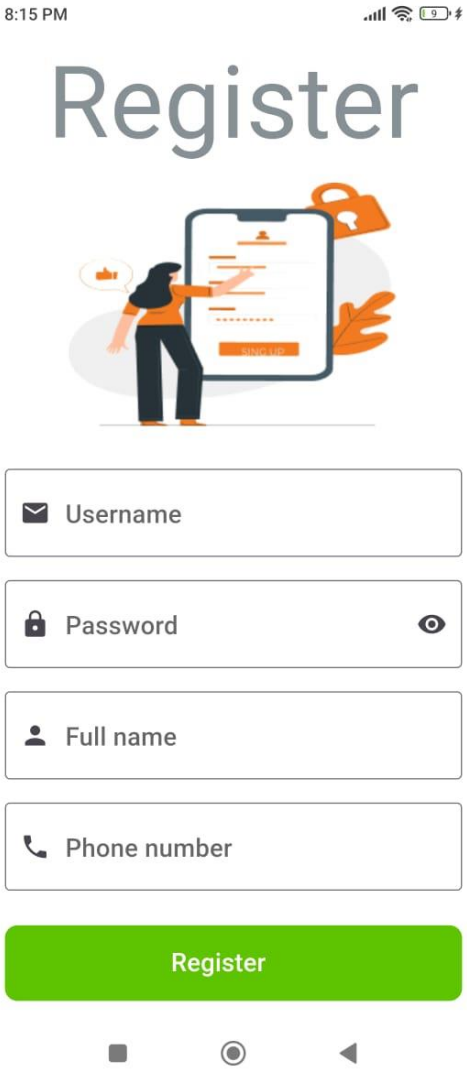


- User

Authentication Screen

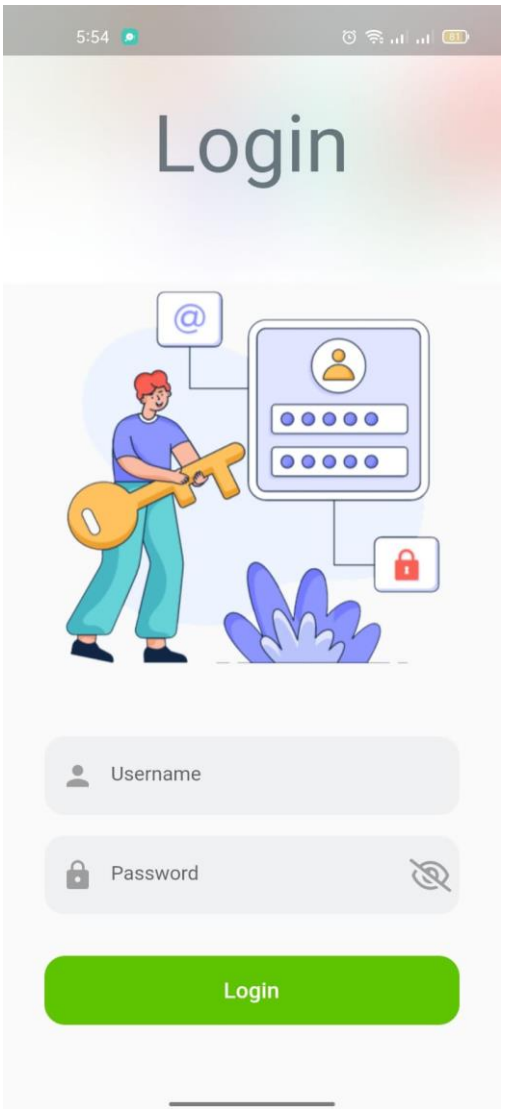


Register Screen

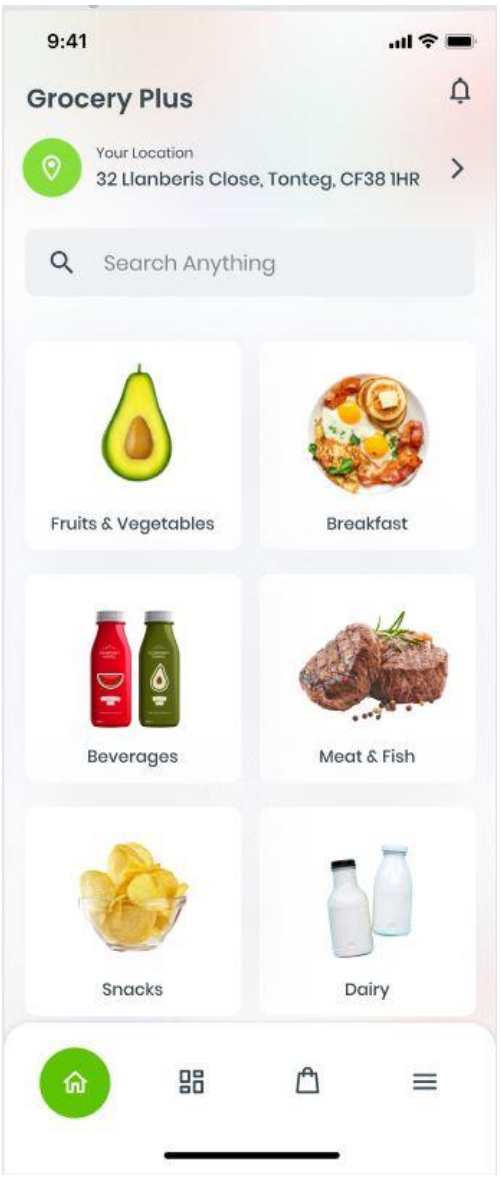


- User

Login Screen

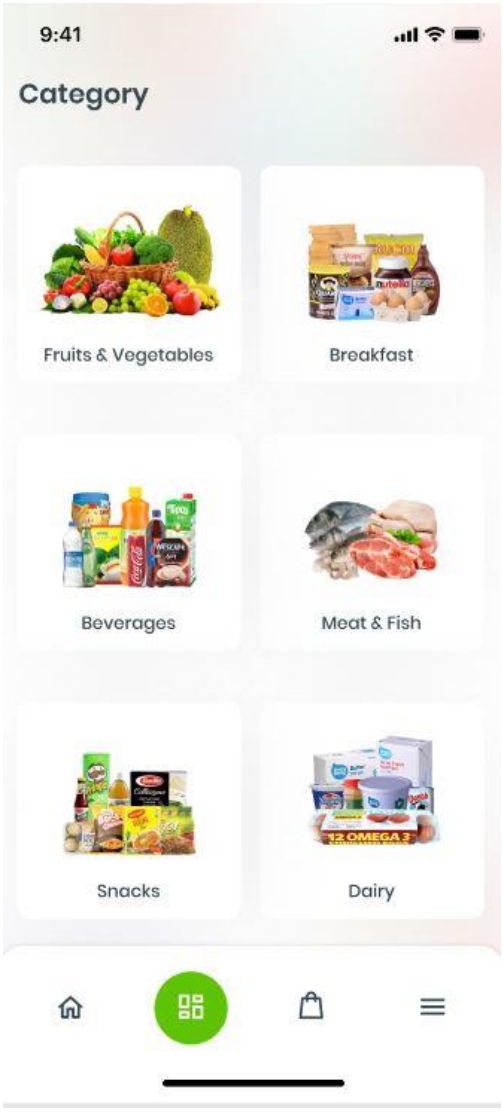


Home Screen

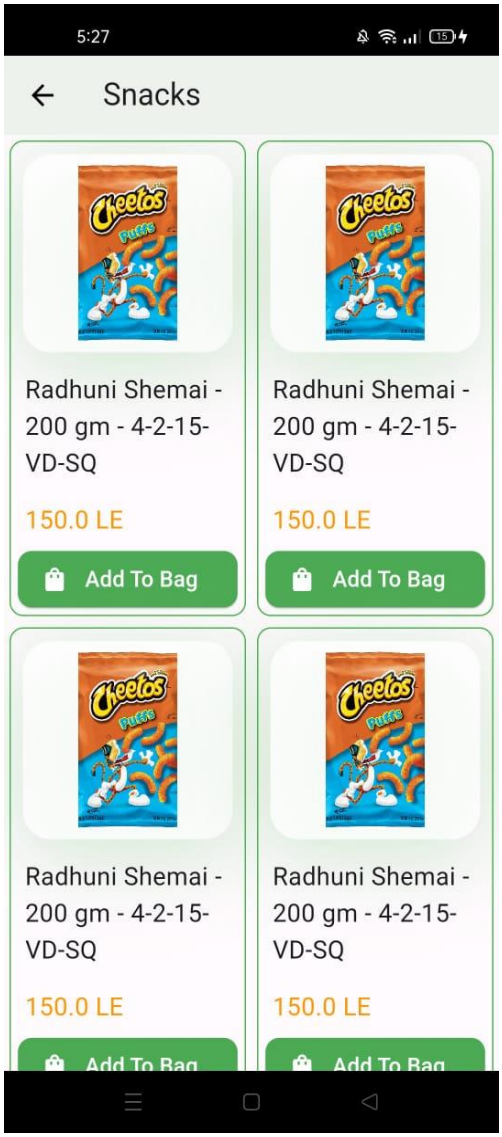


- User

Category Screen

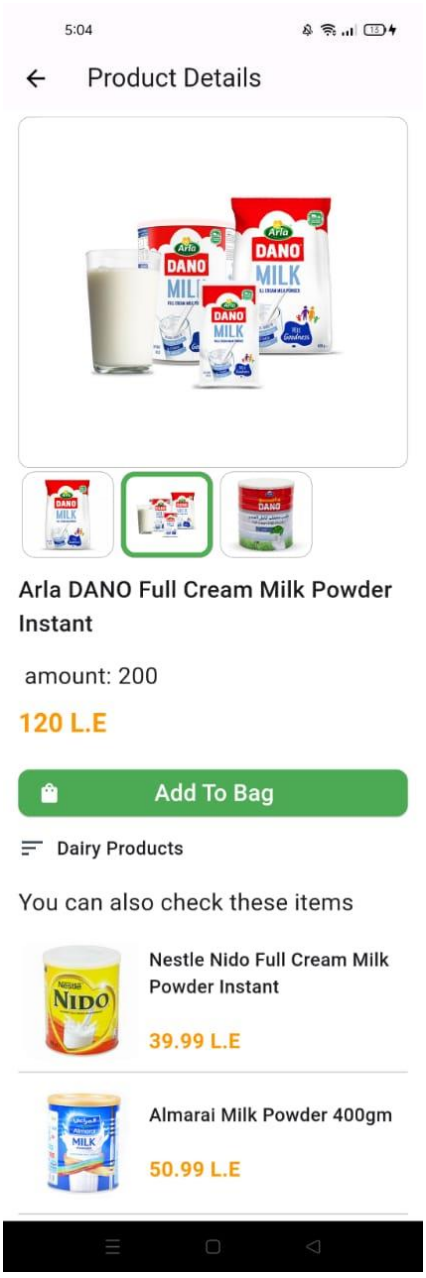


Snacks Category Screen

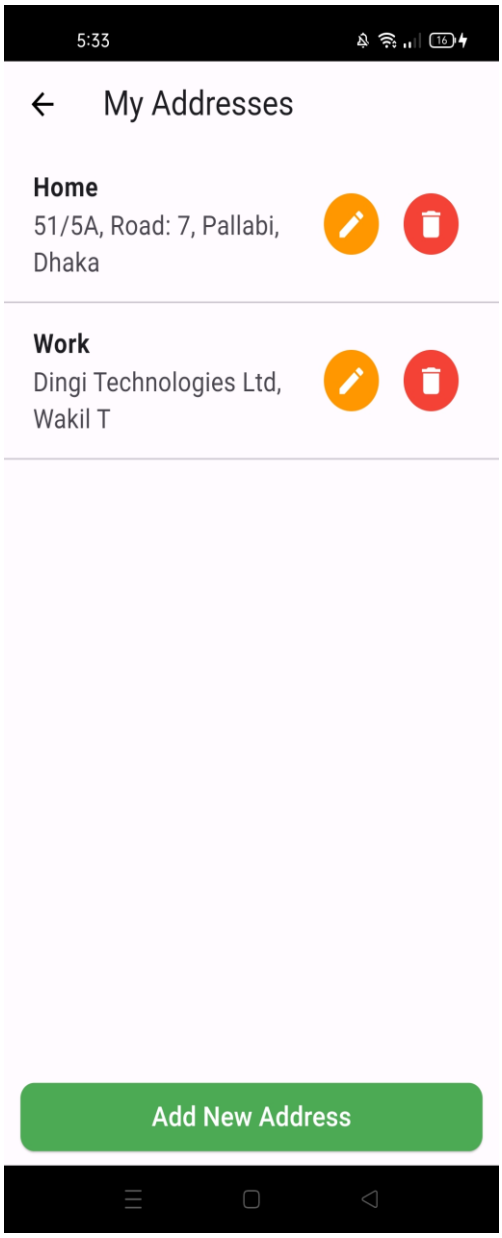


- User

Product Details Screen

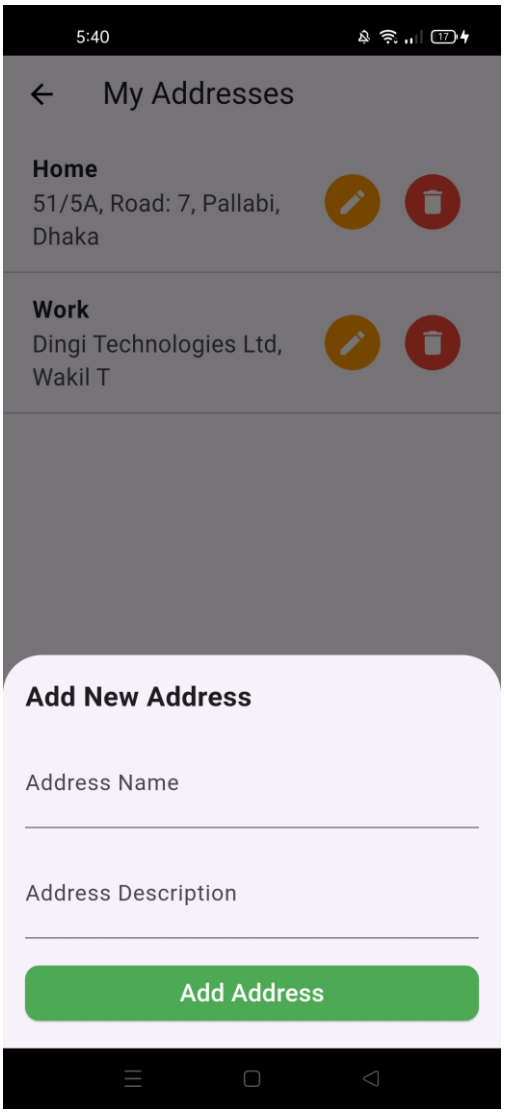


My Addresses Screen

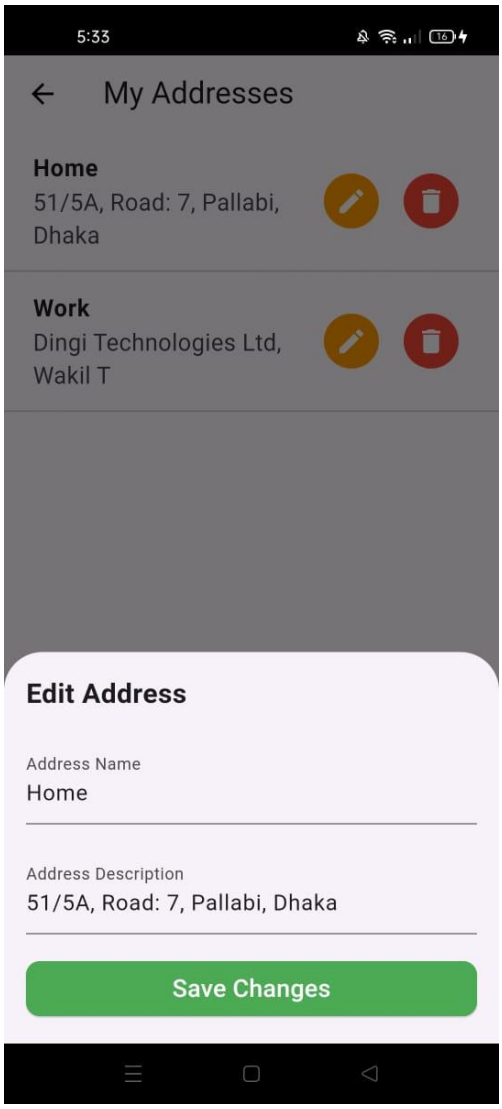


- User

My Addresses Screen

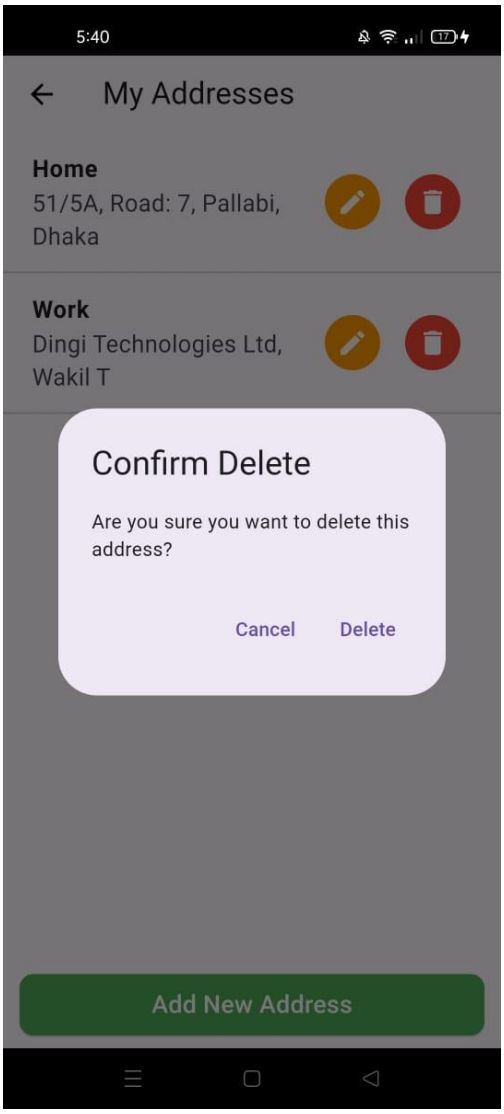


My Addresses Screen

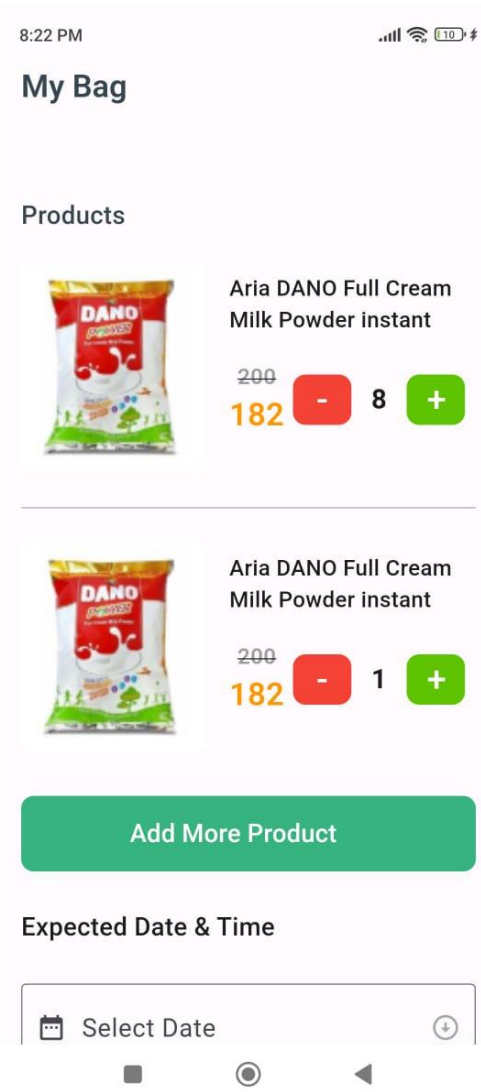


- User

My Addresses Screen

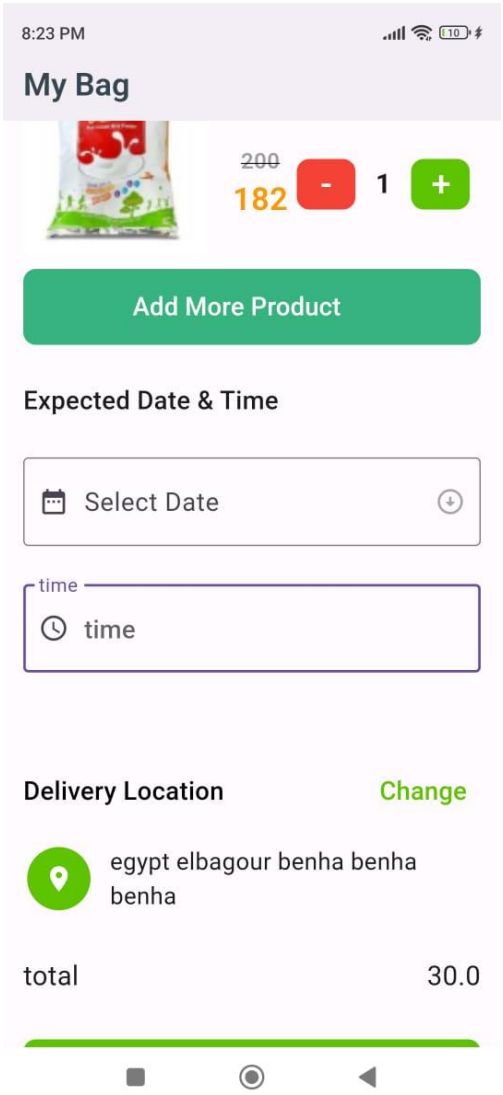


My Bag Screen



- User

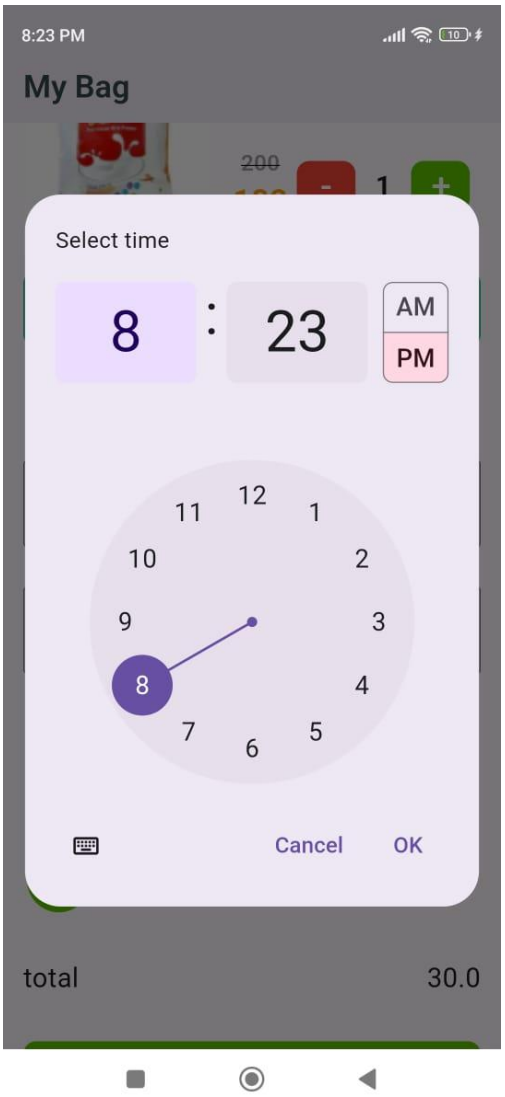
My Bag Screen



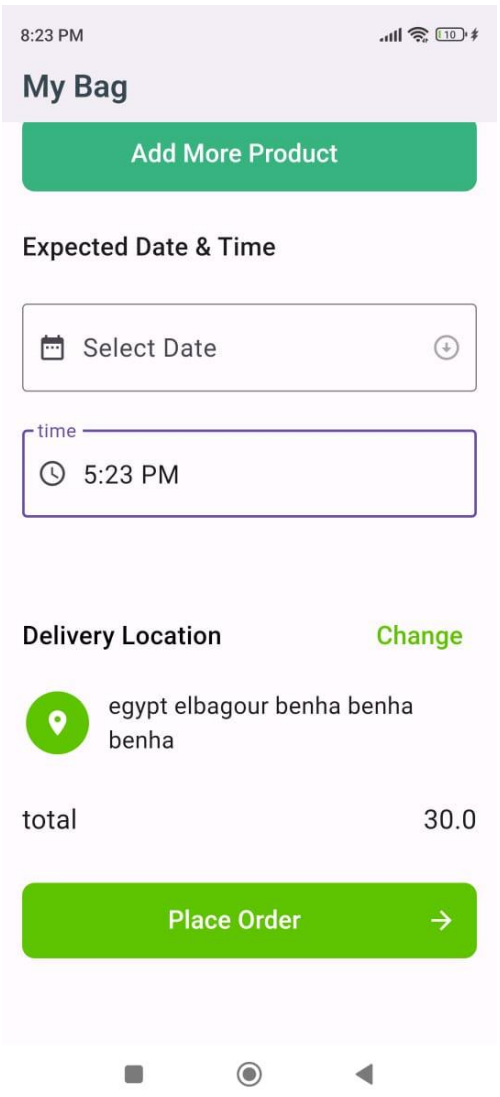
My Bag Screen

- User

My Bag Screen

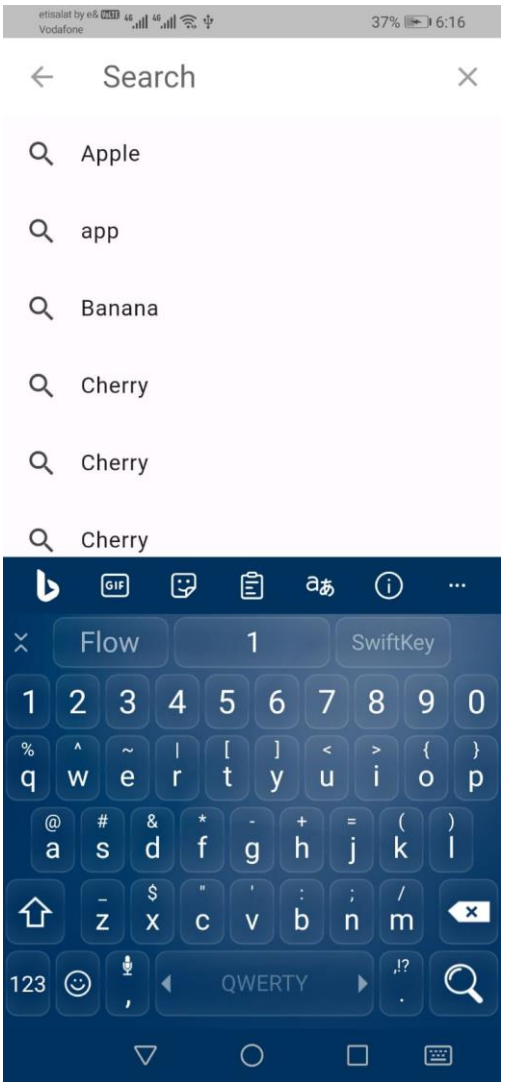


My Bag Screen

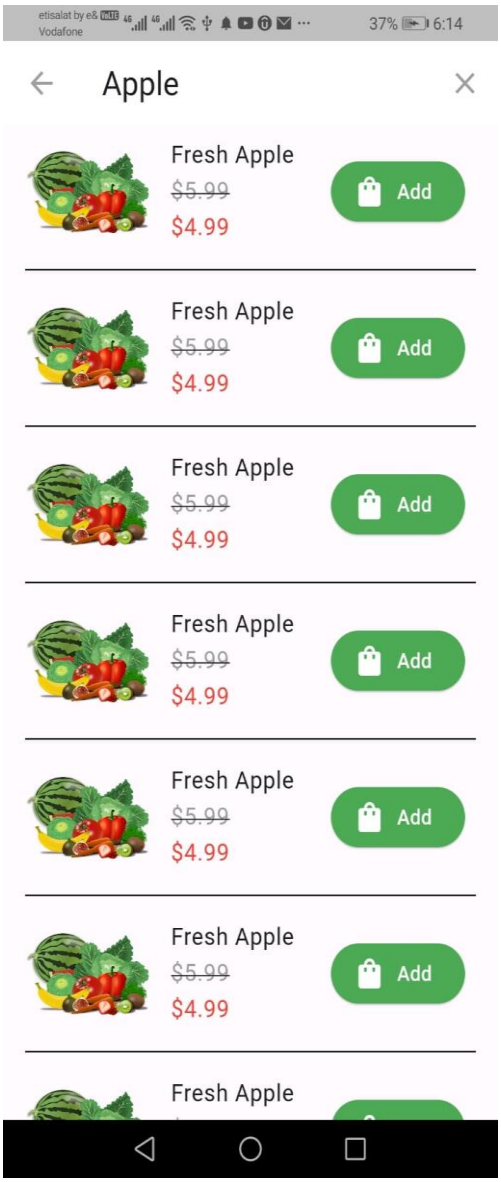


- User

Search Screen



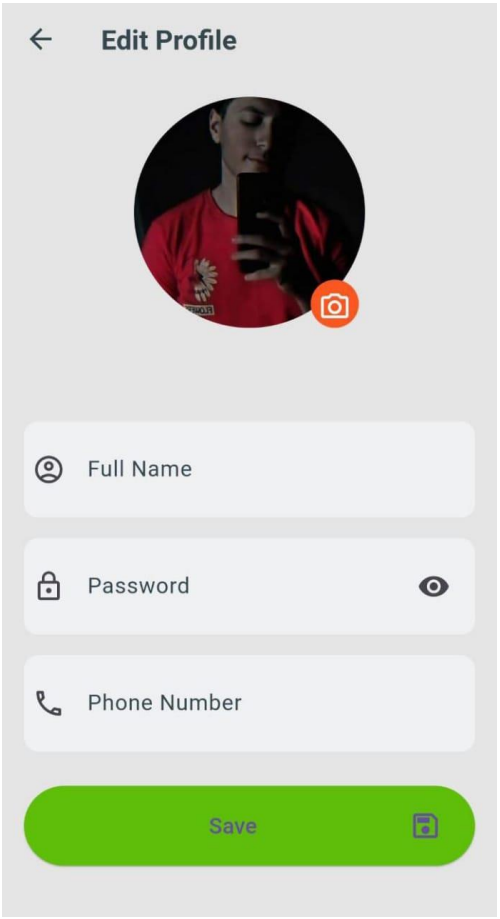
Search Screen



- User

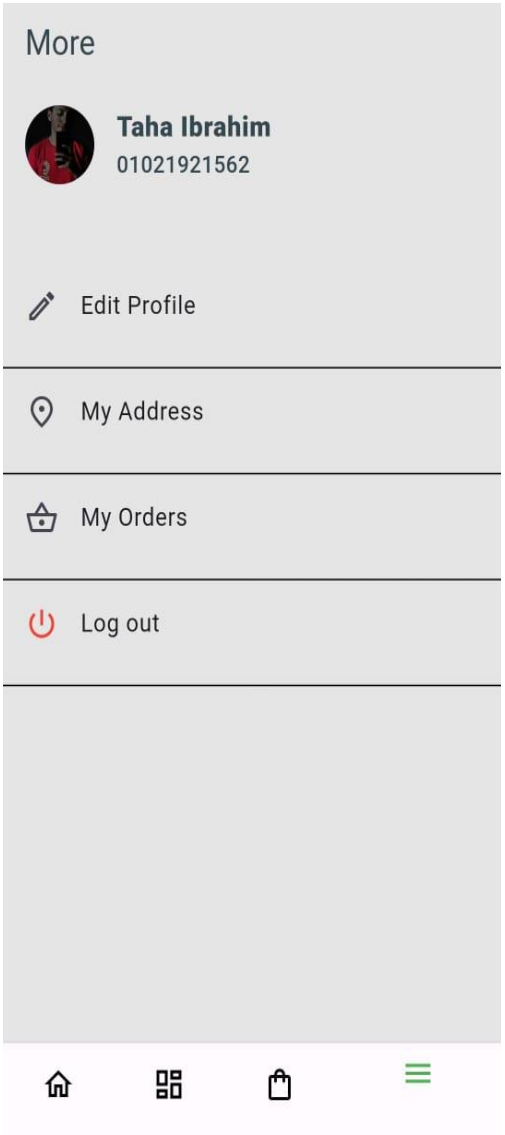
Search Screen

Edit Profile Screen

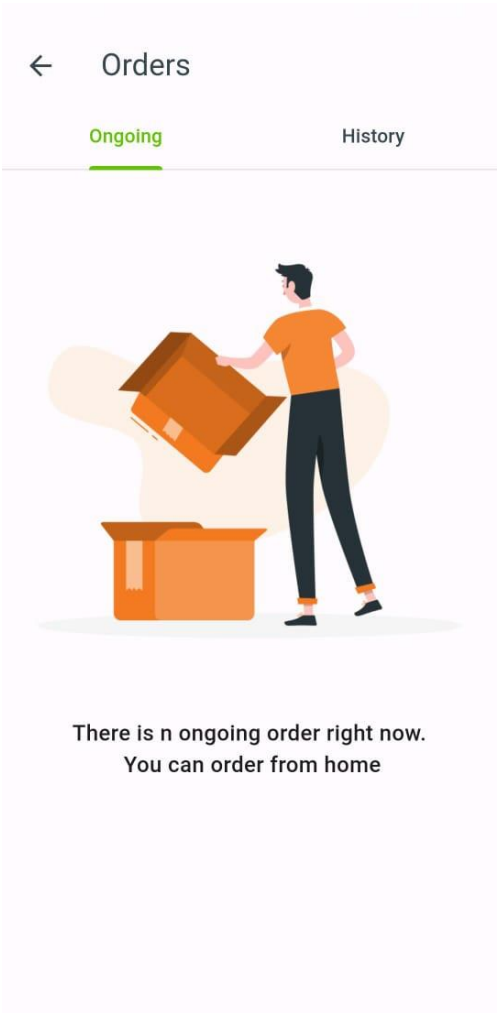


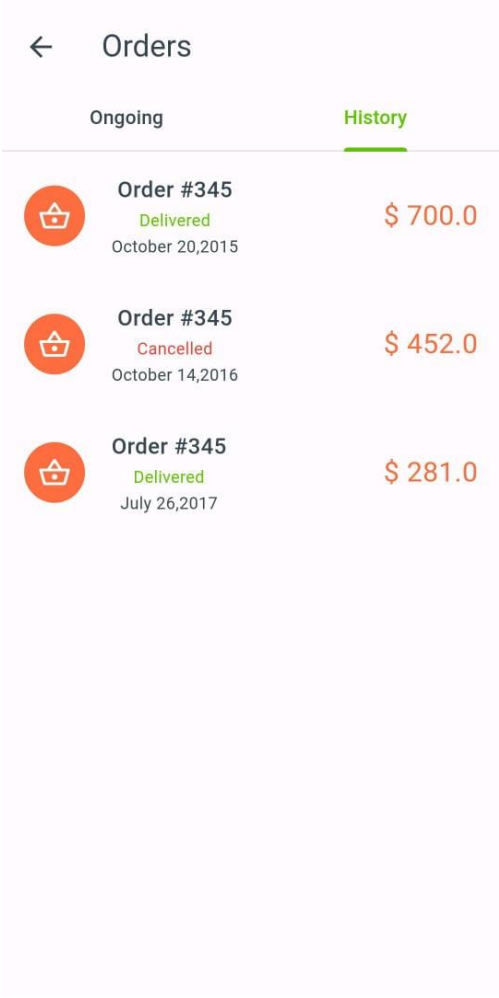
- User

Edit Profile Screen



Orders Screen



- User

Orders Screen