

A report on

OOPS Project

FoodApp Grocery System

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(Group 39)

Object Oriented Programming

CS F213



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Acknowledgements

We would like to express our gratitude to Dr. Subhrakanta Panda for giving us this opportunity to learn and apply the practical knowledge learned from the course. It was an enjoyable learning experience, and we learnt a lot about app development.

We would like to thank the group who demonstrated their own app and provided assistance. This helped us understand the nuances of Android Development.

We are immensely grateful to the entire CS department who provided support and assisted us with all the evaluation components.

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Introduction

The FoodApp app is a grocery store application which connects consumers, retailers and wholesalers. With a simple and clean user interface, it provides a smooth, hassle free experience for grocery shoppers and shopkeepers alike. The app is a simplistic approach to making grocery shopping intuitive and fun.

This report will outline all the various functionalities that were implemented. Screenshots of all interfaces are attached, with textual descriptions to explain each functionality, and references and resources at the end of the document.

Although we have implemented all modules to a certain extent, we plan to work on our app further to enhance the functionalities, and implement new features / UI fixes.



Development Tools

Platform

JetBrains Android Studio (Java development)

Backend

Java

Database

Google Firebase Realtime Database

Google Firebase Authentication – Phone + Gmail + Facebook

Frontend / UI

Android Studio Layout Manager (XML)

UI Element Design

Adobe Photoshop

Location

Google Maps API

Application Details

Landing Page



The landing page contains four buttons.

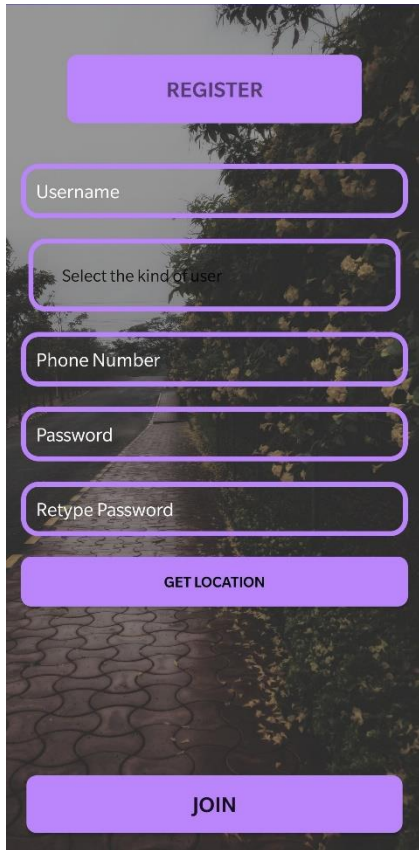
Clicking on the Sign Up button takes the user to the registration page.

Clicking on the *Already have an Account* button takes the user to the login page.

Additionally, if the user wants to sign in using his/her Gmail or Facebook account, they may click on the respective buttons, and they will be redirected to their login pages.

Registration

Customer Registration

A mobile application registration form with a dark background and a stone path image. The form consists of several white rounded rectangular input fields and two white rounded rectangular buttons. The fields are labeled 'REGISTER', 'Username', 'Select the kind of user', 'Phone Number', 'Password', and 'Retype Password'. The buttons are labeled 'GET LOCATION' and 'JOIN'.

REGISTER

Username

Select the kind of user

Phone Number

Password

Retype Password

GET LOCATION

JOIN

The customer registration page contains fields for the user to enter their name, kind of user (Customer, Retailer or Wholesaler), Phone Number, Password and Get Location. On clicking the Join Now button, their account will be created and their data will be stored in the Firebase Realtime Database, and they will be redirected to the login page

Get Location

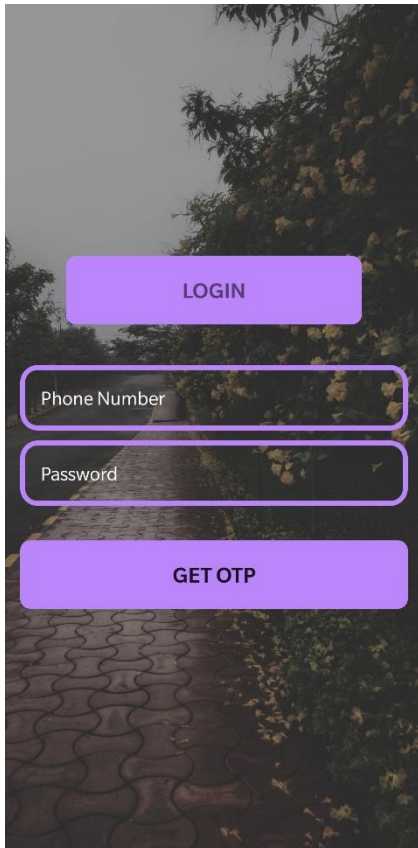
Customer Registration



On clicking 'Get Location' on the register page, the user will be redirected to Google Maps, where they can access their live location.

Login

User Login

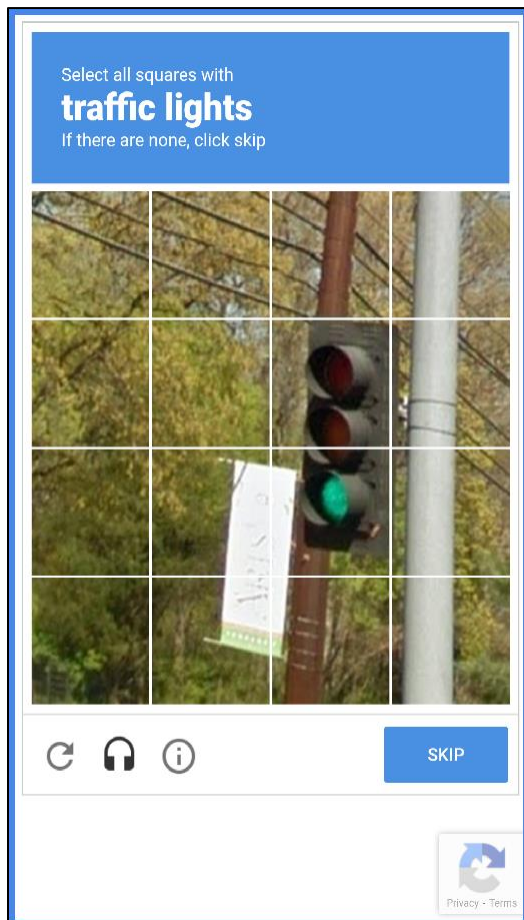


The user login page allows the user to enter their phone number and their password. If the details do not match, a prompt will be provided to enter the right details.

If the details are correct, clicking the Get OTP Button will send an OTP to the user's mobile number.

Once the user clicks on Get OTP button, the user details will be saved and the app will remember the user the next time they open the app, and they will not have to login again.

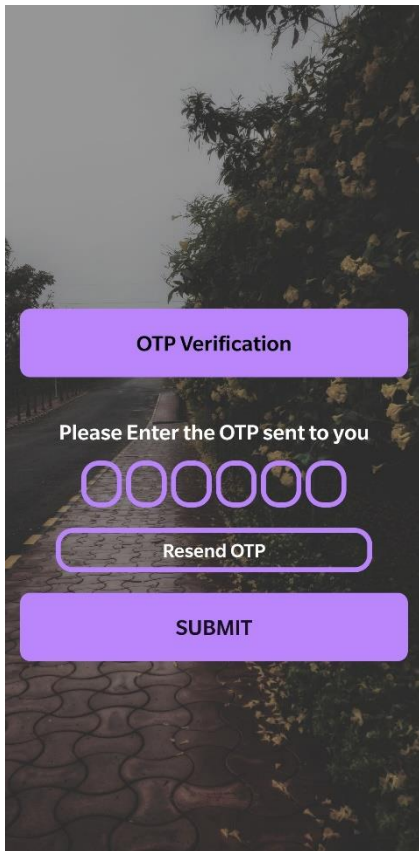
Captcha Authentication



On clicking the 'Generate OTP' button, the app redirects to a Captcha authentication page. When it is ascertained that the user is not a robot, it will take the user to the next page and enter their OTP.

OTP Verification

Verification Screen



The user can enter their OTP in the field. If it is correct, they will enter the app on clicking the 'Submit' Button. There is also a feature to send another OTP by clicking the corresponding 'Resend OTP' button.

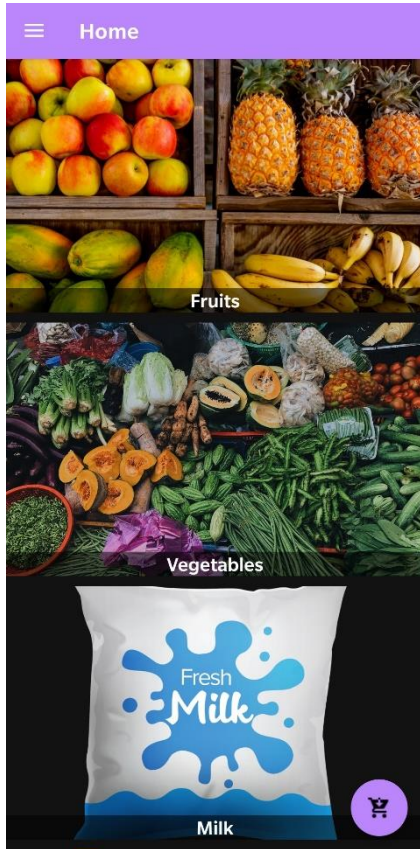
OTP Verification



The OTP is sent to the registered mobile number.

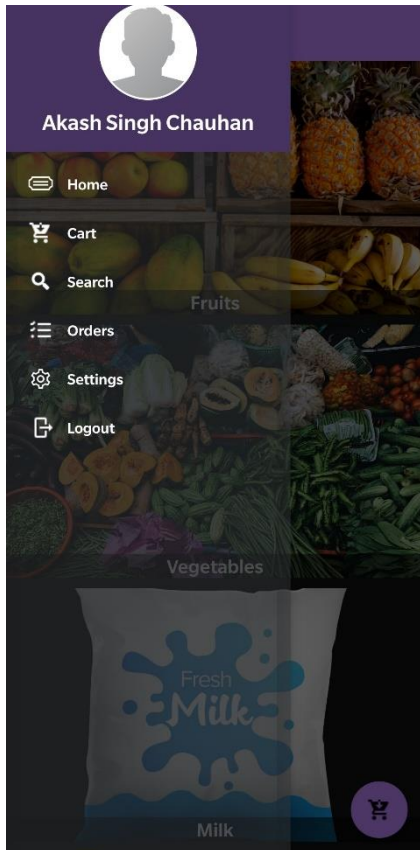
Customer Dashboard

Main Screen



This is the customer dashboard, where they can see different product categories that are available. When clicked on a particular category, user can see all the products of that particular category.

Sidebar



This is the customer sidebar. The user can use the sidebar to assess -

- Cart - Items added in the cart
- Search - Search for a particular product
- Orders - All Orders confirmed by Retailer
- Settings - Edit their personal details, add a profile pic.
- Logout

Products

Mountain Dew - Soft Drink



6
PACKS

Buy 5 Get 1 Free

6x200ml - Multipack
Price = ₹ 75

Pepsi - Soft Drink



2
PACKS

Multi Pack

2x500ml - Multipack
Price = ₹ 65

Natural Mineral Water



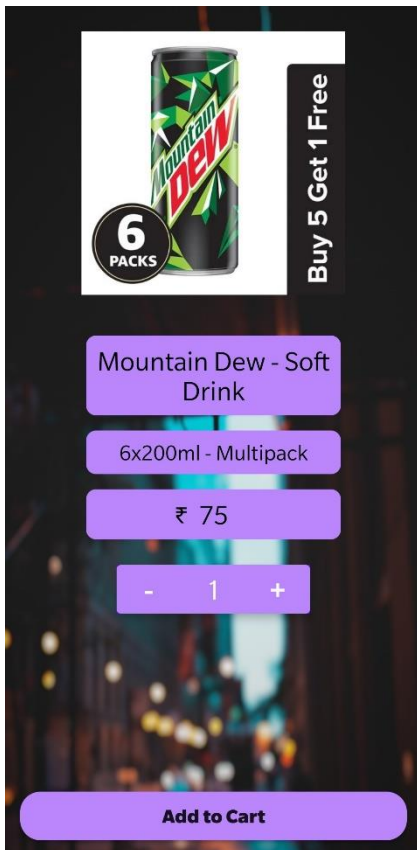
Himalayan water

1L

1 L - Bottle

When clicked on a particular category, user can see all the products that are available of that category. The details for each product are mentioned, with price, and description.

Add to Cart



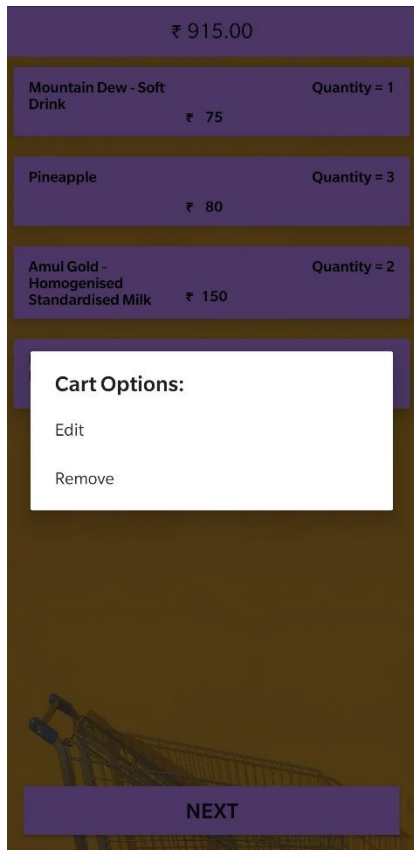
On clicking a particular product, the user can view the price, description and other details of the product, and add it to the cart.

Cart View



The user can check the cart by clicking on cart button at bottom right or by selecting 'Cart' in the sidebar. The cart view shows details of all the products that are currently in the cart, and the total price.

Edit Cart



The user can also edit or remove any product in the cart by just clicking on that particular item.

Shipping Details

Enter your Shipment Details

Name

Email

Phone Number

Home Address

City

Pincode

Live Location

Payment Method

☒ Cash On Delivery

☐ Pay Now

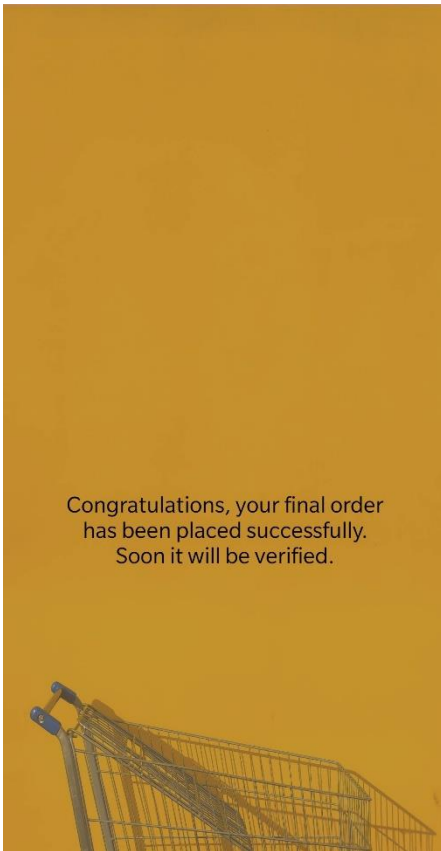
CONFIRM

On confirming the order, the customer will be asked to enter the shipping details, which includes their name, email, phone number, home address, city and pin code.

When clicked on 'Confirm', the user will receive an order confirmation mail when the order is confirmed by the Retailer.

The mode of payment by default is kept as COD.

Confirm Placement of User Order




When an order is confirmed, the cart displays the status of the current order. This will change again when the Retailer sends the product for shipping and updates it on the app.

Settings: Set Details

Close

Update



Change Profile

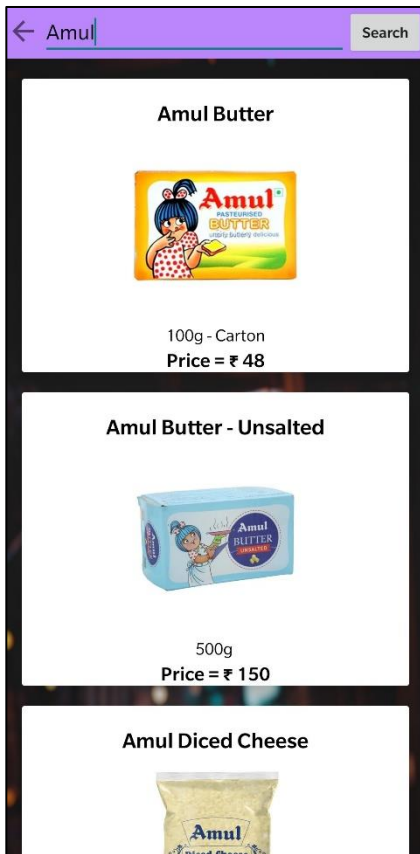
Phone Number...

Full Name...

Address...

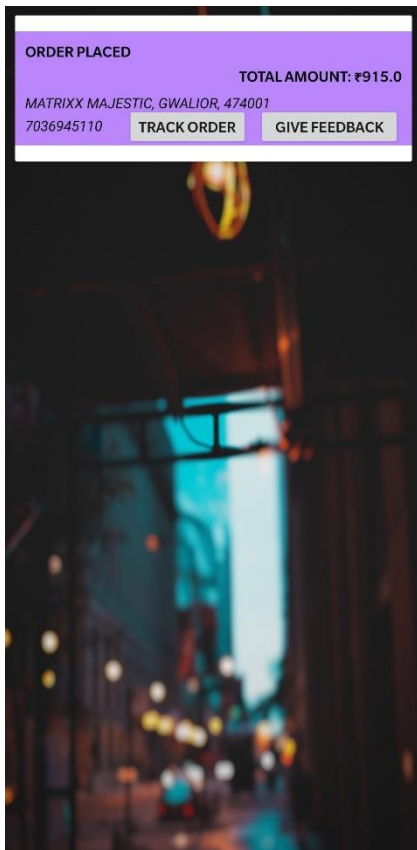
On clicking 'Settings' in the sidebar, the user can update their details on this page. The user can add a profile picture also.

Search



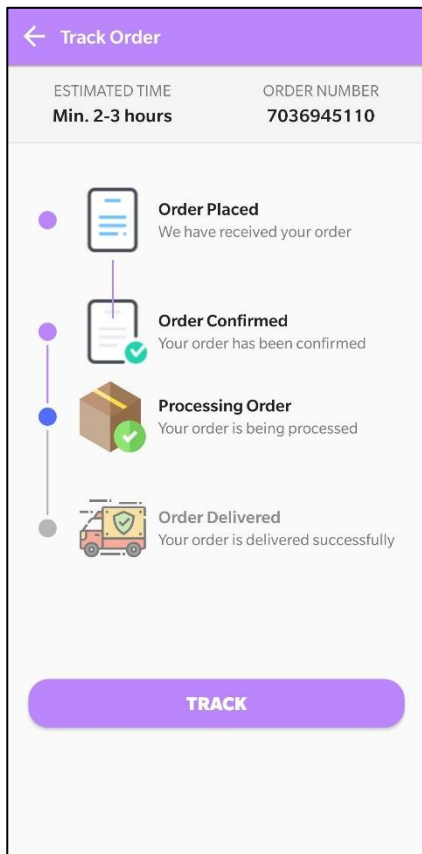
The search functionality allows customers to search for a specific product, and the searched product appears at the beginning of the product list.

Order Status



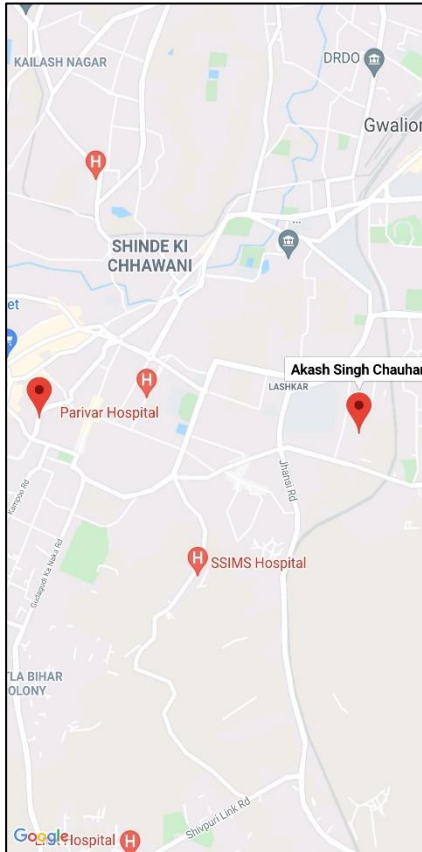
Once the order is confirmed by the retailer, the customer can go to the Orders section in the sidebar and can track their order and give feedback.

Track Order



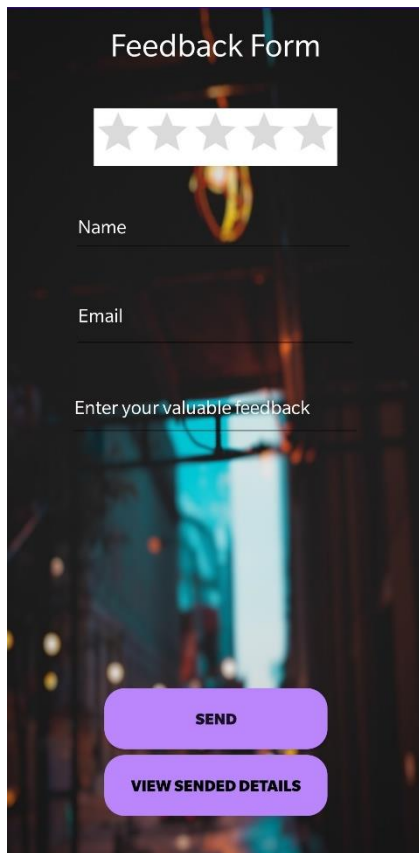
On clicking 'Track Order', the user will be redirected to the track order page, where the current status of the customer's order will be visible.

Live Order Tracking



On clicking 'Track Order' button, user will be able to track their order live using google maps.

Feedback

A mobile app feedback form with a dark background and a blurred image of a city street at night. The form includes a title, a star rating, and input fields for name, email, and feedback text, followed by two action buttons.

Feedback Form

★ ★ ★ ★ ★

Name

Email

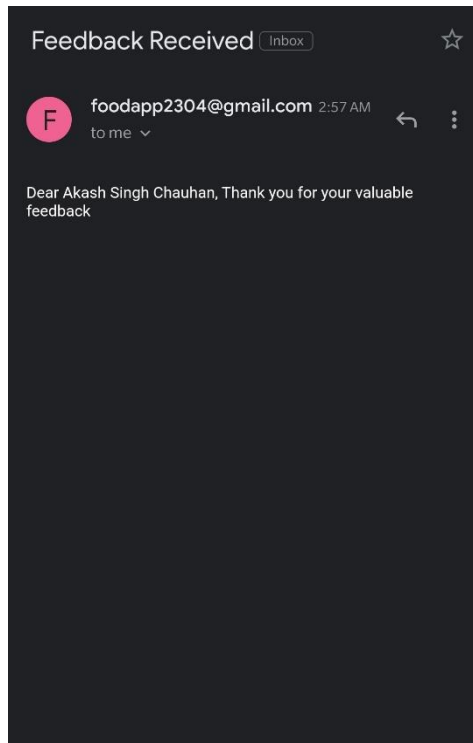
Enter your valuable feedback

SEND

VIEW SENDED DETAILS

On clicking 'Give Feedback' in the orders section, the customer will be redirected to the feedback page, where they can provide their valuable feedback.

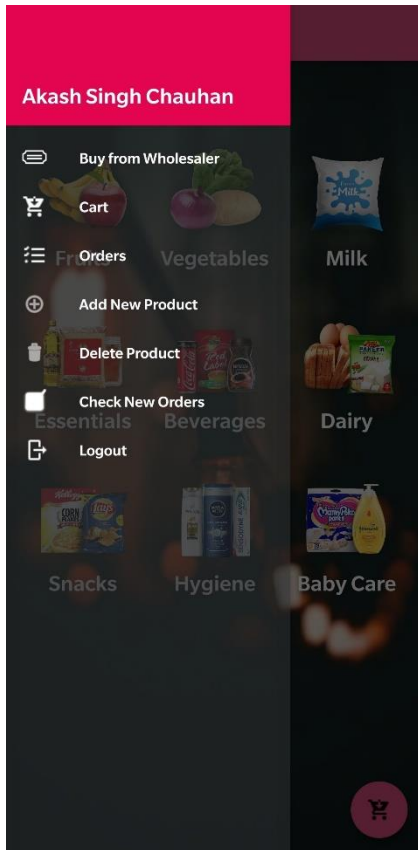
Feedback Confirmation



On submitting the feedback, the user will get an email confirmation.

Retailer Dashboard

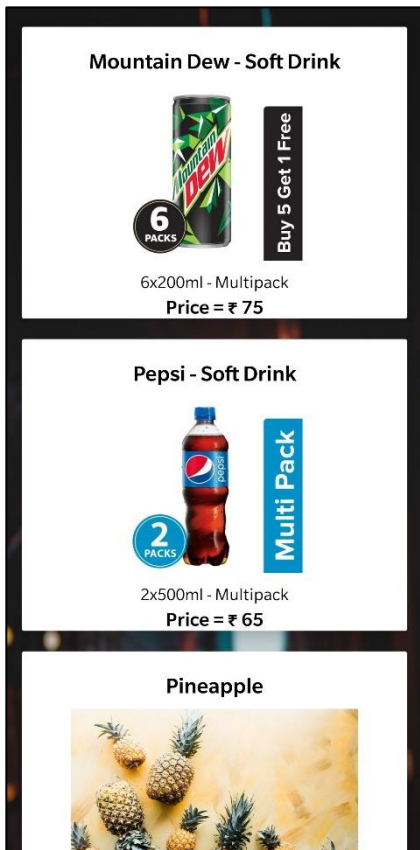
Main Screen



This is the Retailer inventory menu. On clicking the sidebar, a Retailer can assess the following -


- Buy from Wholesaler – Retailer can buy products in bulk from wholesaler
- Cart – Items added in the cart
- Orders – All Orders done by Retailer
- Add New Product – Add new products to the inventory.
- Delete Product – Delete product from the inventory.
- Check New Orders – Confirm orders made by the customer.
- Logout

Buy from Wholesaler



On clicking 'Buy from Wholesaler', retailer will be redirected to the categories page, from where they can follow the similar process as the customer, by clicking on a particular category and selecting a product and adding it to cart and confirming the order. Here, the retailer's orders will be confirmed by the wholesaler.

Add new Products



Product Name...

Product Description...

Product Price...

Add Product

This is where the retailer adds new products to the inventory. The retailer sets the product name, description and price, and adds it by clicking the 'Add Product' button. They can set the product image by clicking on the image.

Check new Orders

New Orders

Name: Akash Singh
Chauhan

Phone Number:
7036945110

Total Amount: ₹915.0

Matrixx Majestic, Gwalior, 474001

Confirm Order



The Retailer can see all the current orders that have been placed by the customer.

Order Confirmation

New Orders

Name: Akash Singh Chauhan Phone Number: 7036945110
Total Amount: ₹915.0
Matrixx Majestic, Gwalior, 474001

Confirm Order

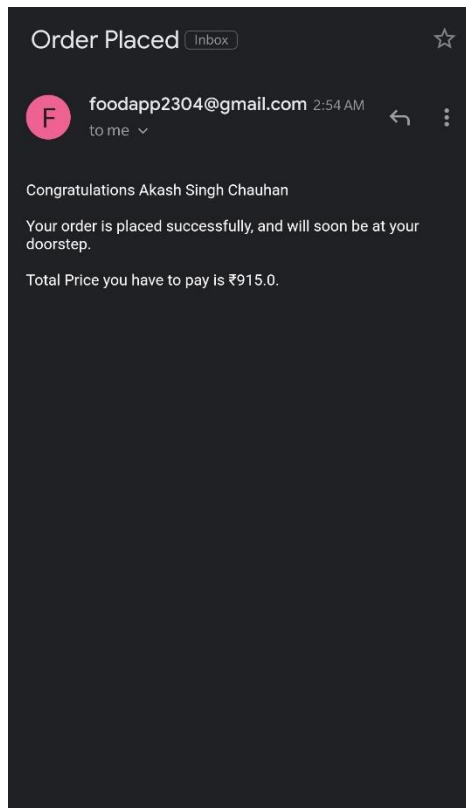
Confirm Order ?

Yes

No

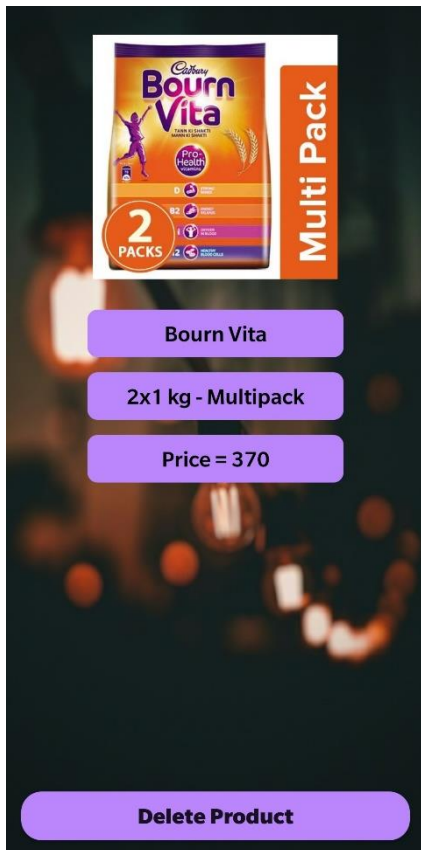
On clicking 'Confirm Order', the retailer will be asked to confirm the order. If clicked 'Yes', an email confirmation will be sent to the customer confirming their order.

Order Confirmation via Email



When the retailer confirms the order, the customer will receive a confirmation email on the email id provided by the user.

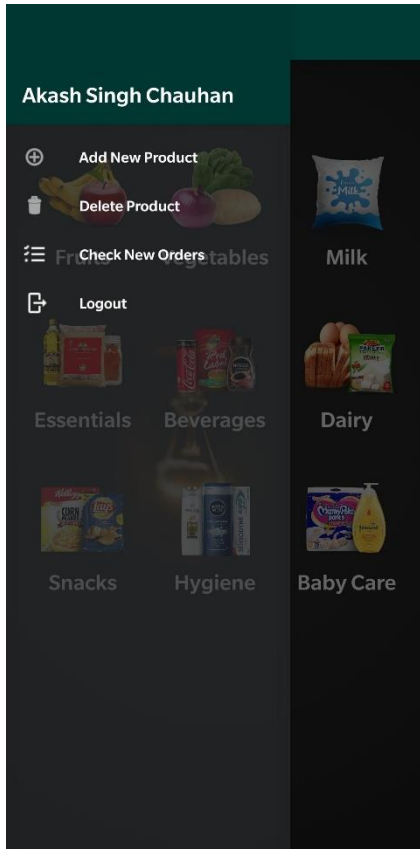
Delete Product



On clicking 'Delete Product', the retailer will be redirected to the product inventory, which contains all the products, retailer can delete any product by simply selecting them and clicking 'Delete Product'.

Wholesaler Dashboard

Main Screen



This is the Wholesaler inventory menu. On clicking the sidebar, a Wholesaler can assess the following -

- Add New Product – Add new products to the inventory.
- Delete Product – Delete product from the inventory.
- Check New Orders – Confirm orders made by the retailer.
- Logout

Member Roles and responsibilities

Everyone was involved in most aspects of the project and were not restricted to only the distribution of work. The work was divided and the team members worked in shifts, which led to the successful completion of the project in the stipulated time.

Challenges

- Since all of us were just introduced to android development, our learning curve was steep and we faced numerous challenges.
- Version control was a major challenge, which made collaborating an issue. The difference in local system environments led to many issues, which stalled the project.
- Due to the limited number of requests that we could send to firebase, we were limited to fixing few authentication errors at a time which caused some delay in the progress of the project.
- Outdated documentation and learning material was also a major issue.
- Although one of our members was afflicted by Covid, this did not hinder the progress of our project.
- Though these challenges stalled the progress of the project, each step was a valuable learning experience that contributed to the successful completion of the application.

References

- <https://firebase.google.com/docs>
- <https://developer.android.com/docs>
- <https://stackoverflow.com/>
- <https://flaticon.net/>
- <https://studio.tailorbrands.com/brands/free>
- https://www.youtube.com/playlist?list=PLxefhmF0pcPlqmH_VfWneUjfuqhreUz-O
- <https://github.com/ArthurHub/Android-Image-Cropper>
- <https://github.com/hdodenhof/CircleImageView>
- <https://github.com/pilgr/Paper>
- <https://github.com/rev5137/material.git>