



# Food Trading App

SENG 41293

MOBILE WEB APPLICATION DEVELOPMENT

BACHELOR OF SCIENCE HONOURS IN SOFTWARE ENGINEERING

FACULTY OF SCIENCE

UNIVERSITY OF KELANIYA

BY

M.S.Prasad

SE/2015/025

2020

# Food Trading App

Version 1.0



Food Trading Mobile Application is a flutter application (android and iOS) developed for Farmers, Representator, Transporter, Seller and Buyer. This application gives support to connect Farmers, Representator, Transporter, Seller and Buyer on one unit in internet in order to solving their community, management and transportation problems. Farmer or Representator can add their products with price, quantity, quality and place. Seller can get products in one place and purchase products their choices. Buyer can buy products online card payment and easy to find sellers. Seller can deliver their product to buyers' home with the help of transporter. As well as for that, Buyers can any online payment methods using that payment easily.

End-user want to have internet connection, smart phone (Android or iOS), and End-users must include correct product, if End-users have more complains from buyers, that End-users will be removed our system. I use Flutter as front-end framework, Spring boot as back-end framework, and MySQL as the Database.

# **Acknowledgement of Project Report**

I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to (University of Kelaniya) for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project.

I would like to express my gratitude towards my parents & my friends for their kind co-operation and encouragement which help me in completion of this project.

I would like to express my special gratitude and thanks to industry persons for giving me such attention and time.

My thanks and appreciations also go to my colleague in developing the project and people who have willingly helped me out with their abilities.

# **Declaration**

I hereby declare that the Project report entitled "Trading Food" submitted for partial fulfilment of the requirements for the award of the degree of Bachelor of Hons in Software Engineering is a record of original dissertation work done by me, under the guidance and supervision of and Research Supervisor.

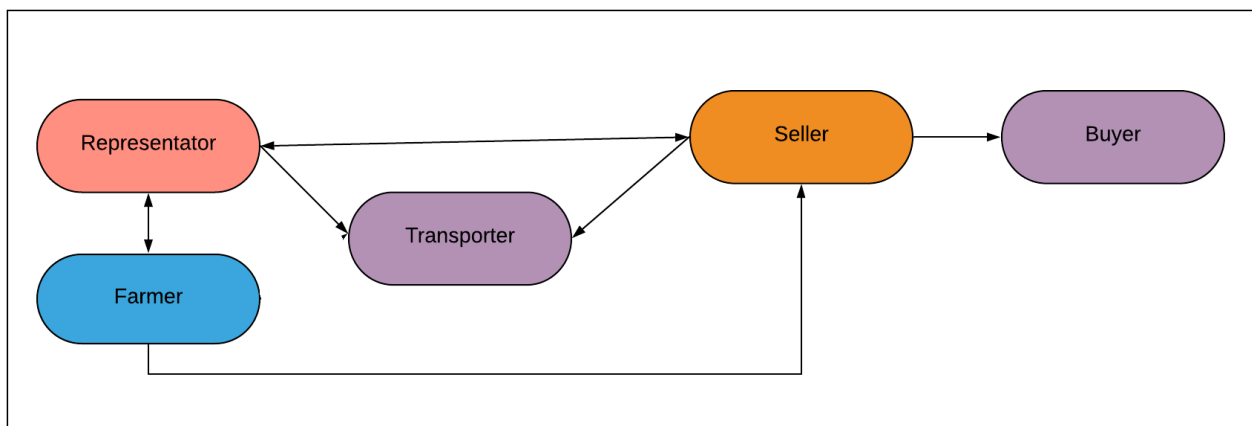
# Abstract

The most important economic sector of Sri Lanka is Agriculture. We can tell comprise it mostly of vegetables, paddy, and fruits. As well as Tea, rubber, and coconut are also included in the broader category. Sri Lanka still bears the triple burden of health conditions relating to overweight and underweight. In truth, according to the population of Sri Lanka set to rise exponentially by the year 2030. For context, Sri Lanka experiences moderate hunger in relation to global hunger levels, ranking 66th of 117 qualifying countries (2019 Global Hunger Index (GHI)). We want to consider food security and ensure equal access to proper nutrition among all Sri Lankans.

So, we have to deliver food from food production areas to other areas. we have the transportation problems that food transport from the seller to the buyer, farmer to the seller like that. The buyer cannot find quality food at a low price. As well as Buyer cannot find the nearest sellers to deliver their food. Sometimes, farmers cannot find sellers to sell their crops with the best price. Some mobile apps help to decrease some of the issues, but farmers don't have enough knowledge and smartphone, they cannot use these mobile applications.

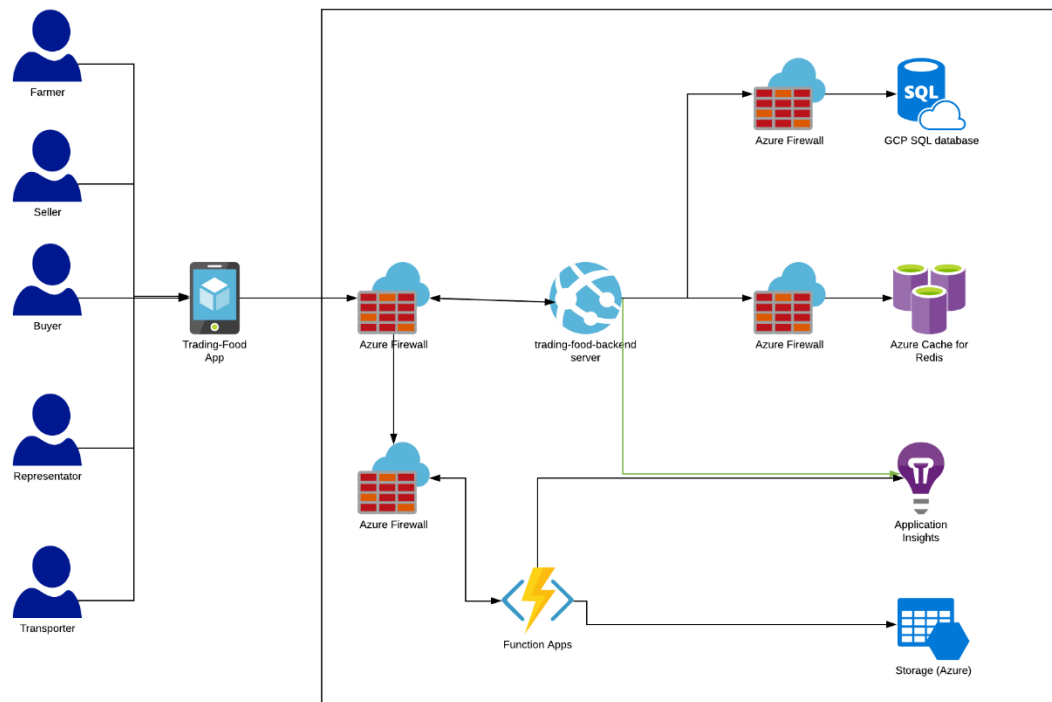
So, for resolving these issues, I created a mobile app to reduce these issues than other solutions. Then, I can connect Farmers, Representation, Transporter, Seller, and Buyer on one unit on the internet in order to solve their community, management, and transportation problems. We introduce representator that wants to find farmers and get their crops and sell to sellers. Thus, farmers don't want to find, deliver their crops to sellers. Buyers can find food according to their location and deliver foods to the home. You can use for payment with online payment easily. Also, you can create post and send to others to see what product you have. I create this app to get more profit from all end-users as they expected. Then, anyone doesn't want cheating, given low-quality foods, and other bad things for others. If anyone do an bad things, the admin can reject that end-user from the app without permission.

**Structure of End-User Communication**



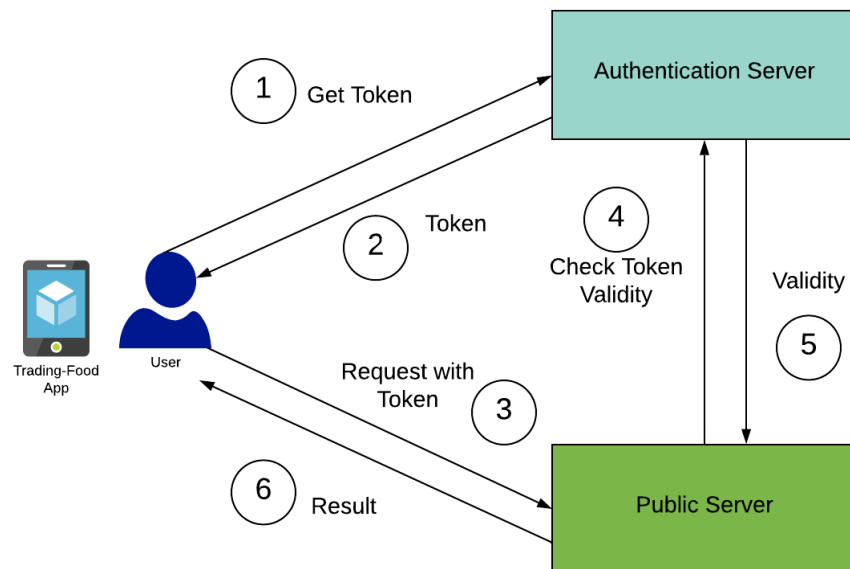
# 1. Project Description

## 2.1 Backend-Architecture



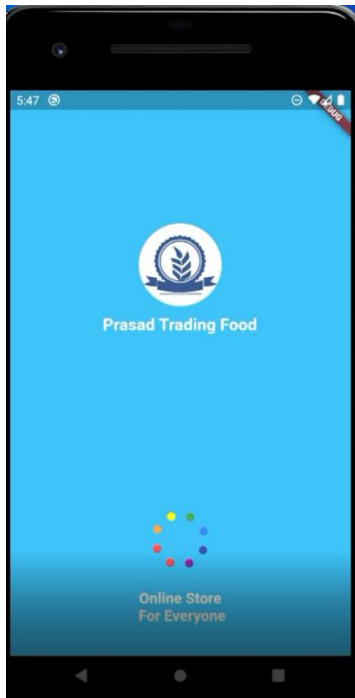
According to user requirements, user want to internet connection, as well as, user must include correct product, if End-users have more complains from buyers, that End-users will be removed our system. We use flutter, because it a free and open-source mobile UI framework, as well as it can build iOS and Android from a single codebase with hot reload features. Also, End-users can simply download from Google Play store or Apple Appl store. For deploy backend, I used more resources (Web App, Function App, Azure Firewall, SQL Database, Azure Storage, Azure Cash and Application Insight) from Azure cloud provider. I use spring-boot for backend server that is also an open-source Java-based framework used to create backend services. Thus, I can simply connect and manage all services with the help of spring framework. MySQL use as database server that store data in tables, So I can store and retrieve data simply. I use cloud storage for storing images that save by users. User send image as base64 to Azure function app, after it generate id for image and store image use this ID in Azure storage. Finally send image ID to backend server and that ID store in Database with other details. Thus, we can simply call image with the help of ID and Storage public URL. The Azure Cash helps to store temporary data for using multiple times. As well as Function App is more helpful store images in Azure Storage easily. Azure Firewall is more helpful to secure our backend servers from attacks. With increase users, I hope to replicate web app according to traffic with the help of Application Insight that monitor app performance.

## 2.2 Authentication

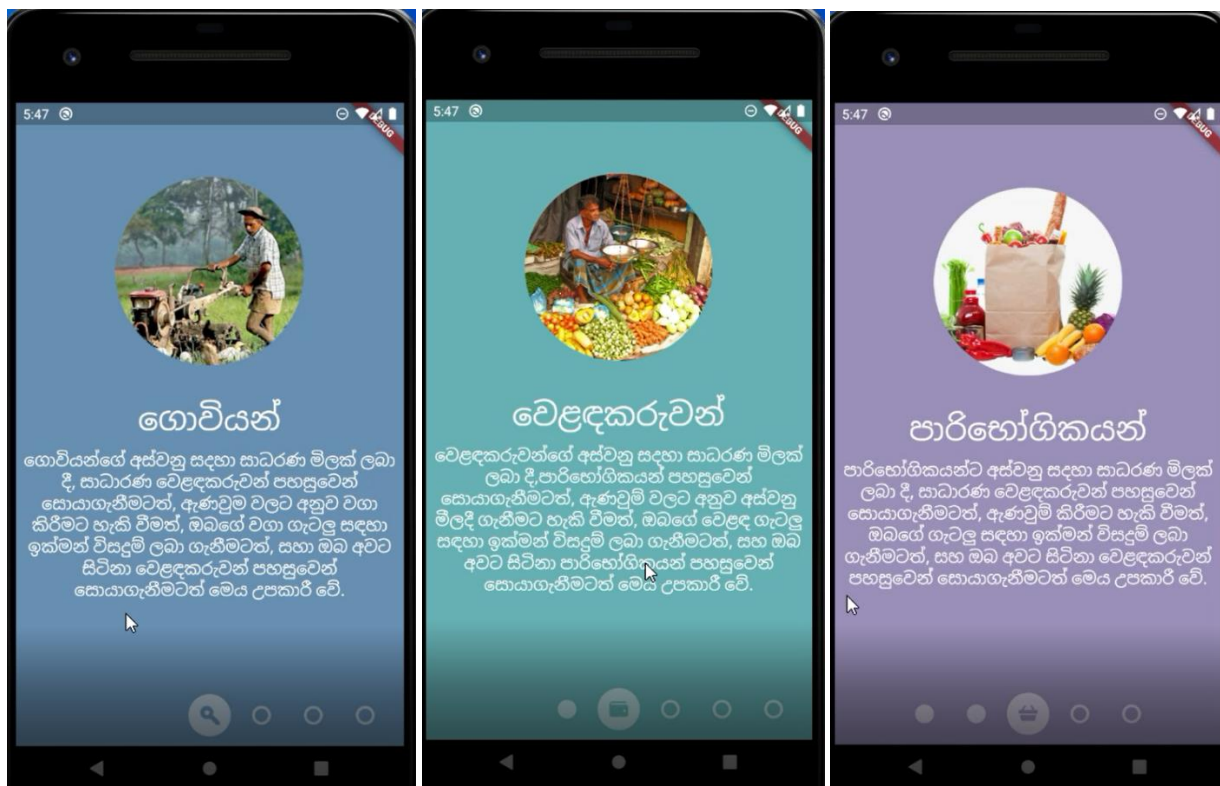


Now, we see how to do authentication for protect data. Firstly, user want to send username and password to authentication server, then after check validity, send token for client app. So, then, client app can send request for public server to get data. I use Spring OAuth2 that offered the possibility of setting up an Authorization Server as a Spring Application. OAuth2 is an authorization framework that enables the application Web Security to access the resources from the client. To build an OAuth2 application, we need to focus on the Grant Type (Authorization code), Client ID and Client secret. an OAuth2 enables the use of Authorization Server, Resource Server with the help of a JWT Token. So, all request must be authentic with token coming to public server. As well as, token expire withing little time duration, then client app wants again re-authentic with authentication server using refresh token. Thus, client user doesn't want enter user credentials (username and password) after expire token. But, if user logout, then token delete from local storage, then user must send credential again to login.

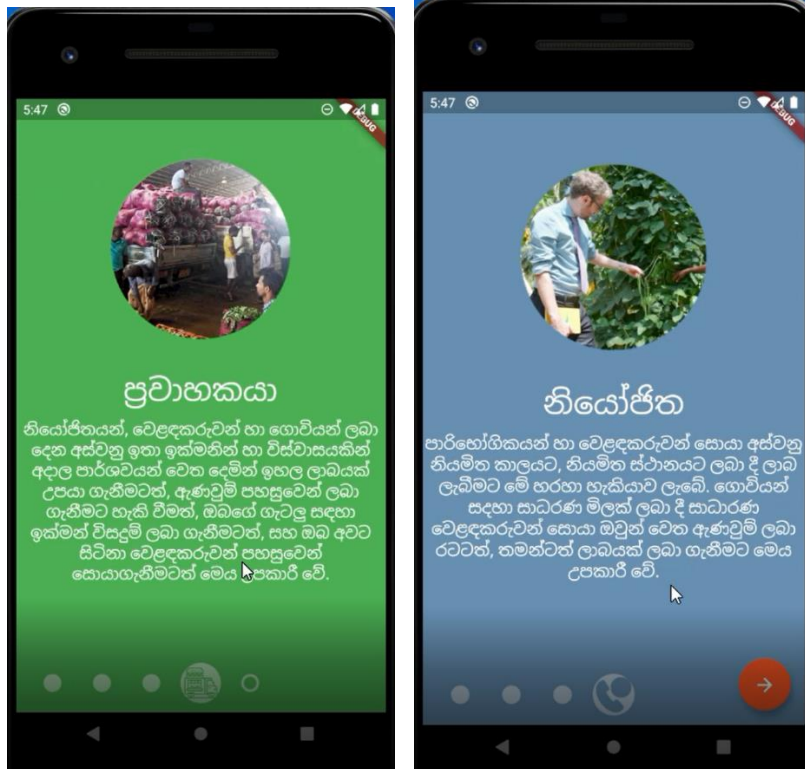
### 1.3 Splash screen to Login screen



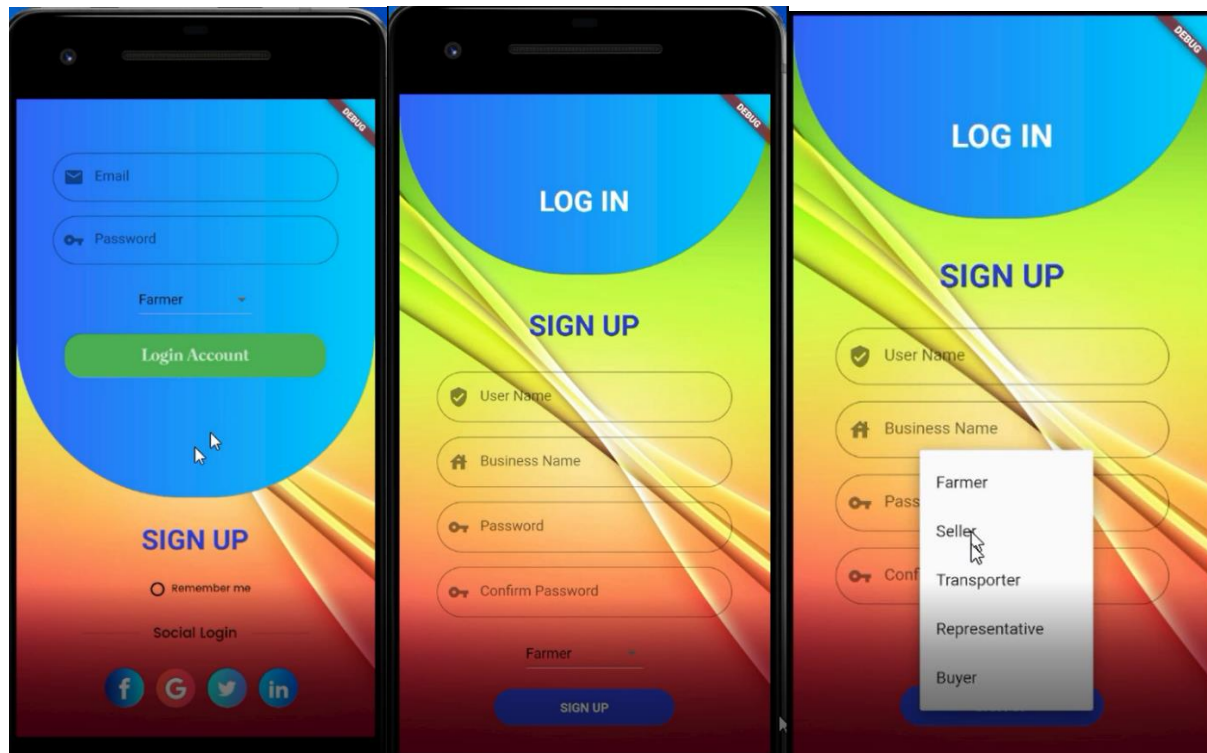
This is splash screen, it will display 3 seconds. Flutter gives a lot of flexibility to the developers to build anything which gives native feel and performance. This screen will get user attraction when entering app. So, basically it focuses on the branding of this app.







If user login firstly, user can get small idea about end-user capability and benefit that can get after loading splash screen. It will display only first run on that app in mobile.



After entering login page, firstly user want to create account for access to app. So, firstly signup with including your role. Simply enter details abouts who are you, then you can create account.

If you are select farmer, you can see Seller posts, farmer can request their posts for seller, if seller accept these requests, seller contact transporter and delivery that crop to own their shops.

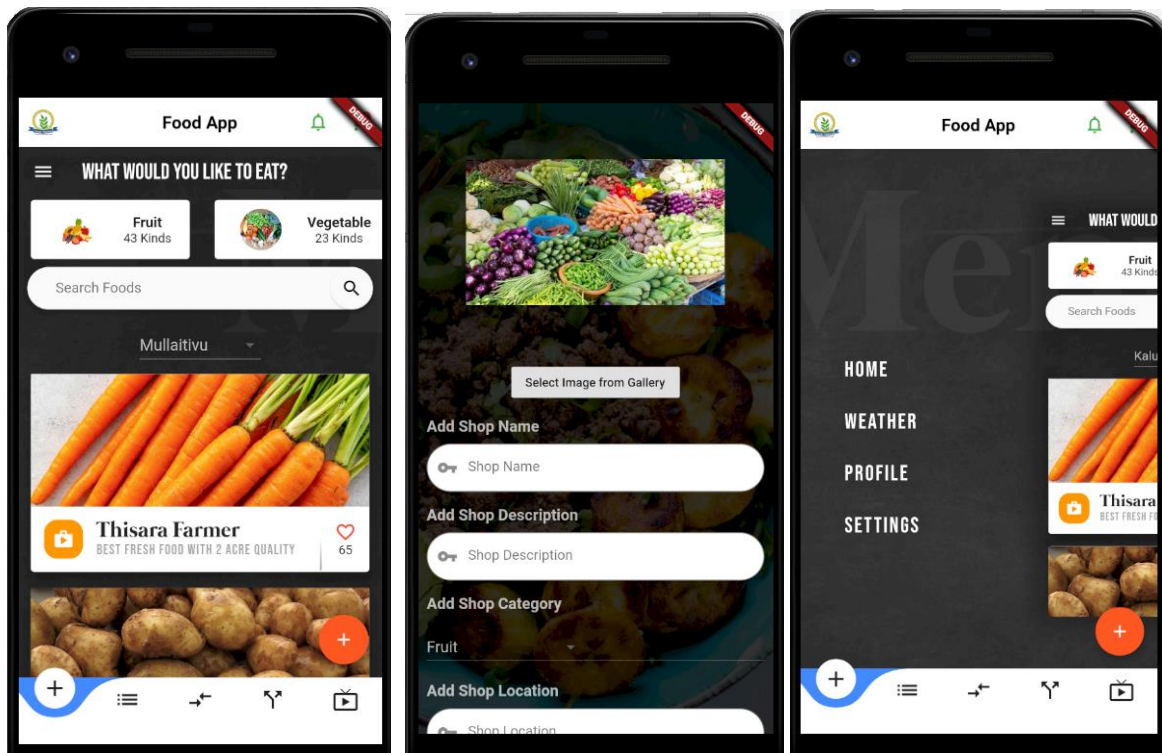
If you are select representator, you can see Seller posts, you want to find farmer in your area and contact that farmers, after you can add posts with their crops. So, seller can see that post and buy those crops easily. As well as representator can request to seller, if seller accept these requests, seller contact transporter and delivery that crop to own their shops.

If you are select transporter, you can see Seller posts and representator posts, you can request their posts to join me for your business, if they accept these requests, you will add their friend list. Then, they will contact you as they need. As well as, after you create your post, they can see your post and book you to transport their crops.

If you are select seller, you can see Farmer, Representator and Transporter posts, you can buy their crops and add your crop list that posts. You can contact transporter and delivery your crops to own their shops and buyer homes. Then, buyer can see your post to buyer your crops simply. If you came order, you want to deliver with the help of transporter.

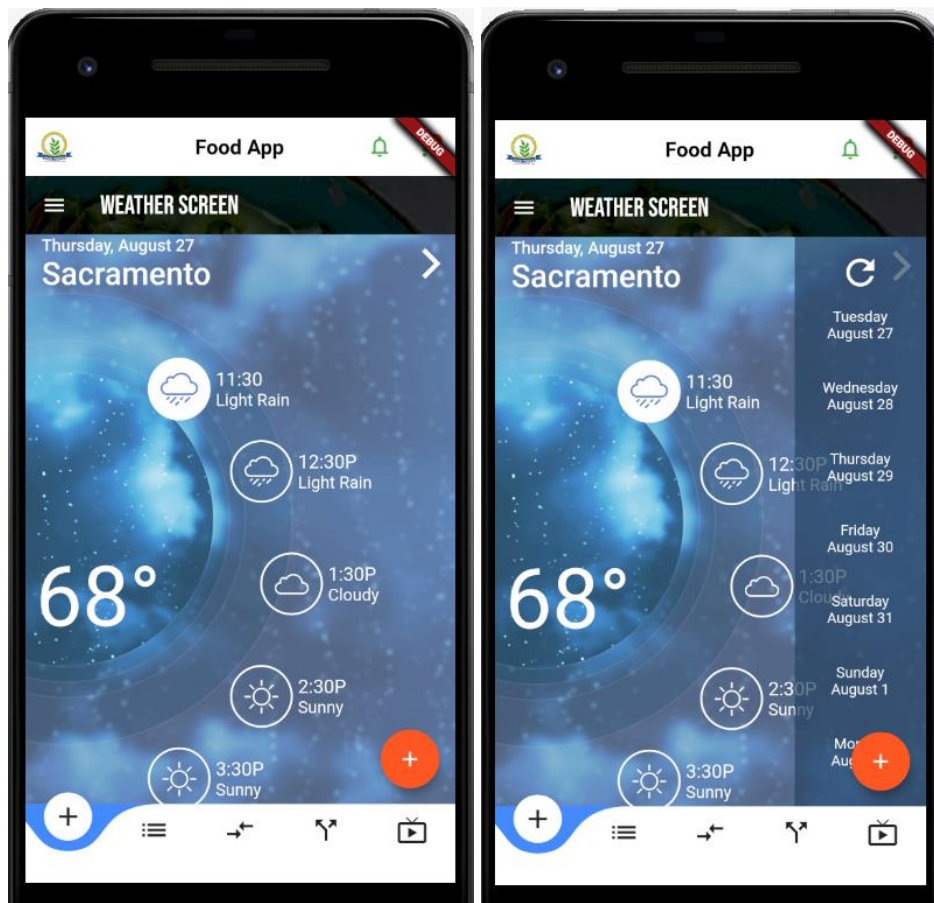
If you are select buyer, you can see Seller posts, you can buy food by selecting seller crops and after paying. Seller will delivery that foods to your home by transporter.

## 1.4 Home screen



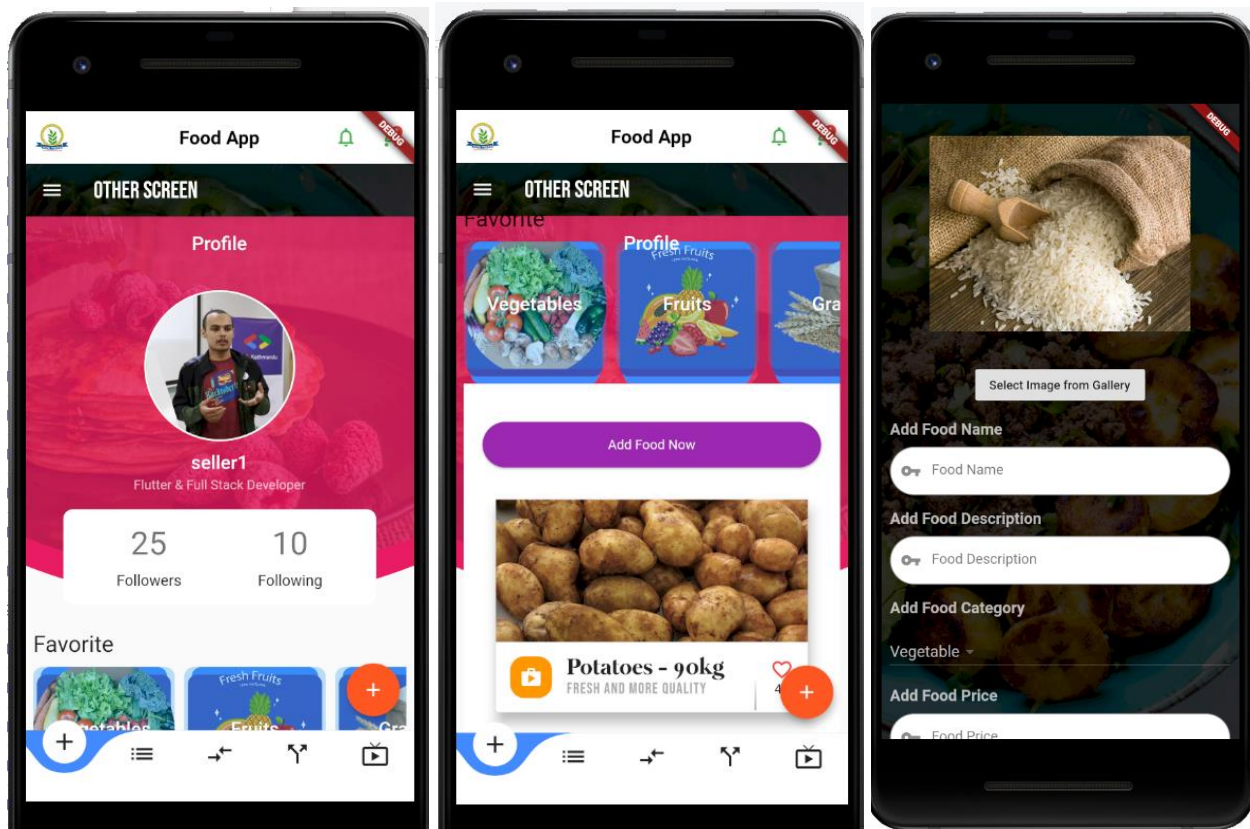
Whatever, firstly you have to create a business account to represent who are you to others. For that, you can see add button right bottom side in home screen with orange color. One user can create multiple business account as they need. You can see other posts in home screen with customer satisfaction. You can get feedback that whether user is good or bad according to like of their posts. As well as, you can find end-users with your location, just select where you live using drop down list. You can see a top section, using this section you can get knowledge about how many categories of fruits, vegetables, grains include this app. As well as you can search shops with name, then you can simply find. You can navigate other pages simply and as more attractively with animations.

## 1.5 Weather screen



This is more useful for farmer as well as another user. Because you can get forecast about weather situation (temperature, climate) according today and also next days. Then, farmer, seller can decide whether sell today or not, cultivate or not like that. Thus, they always try to use this app for their works, then, I can find more money via displaying advertisement for end-users.

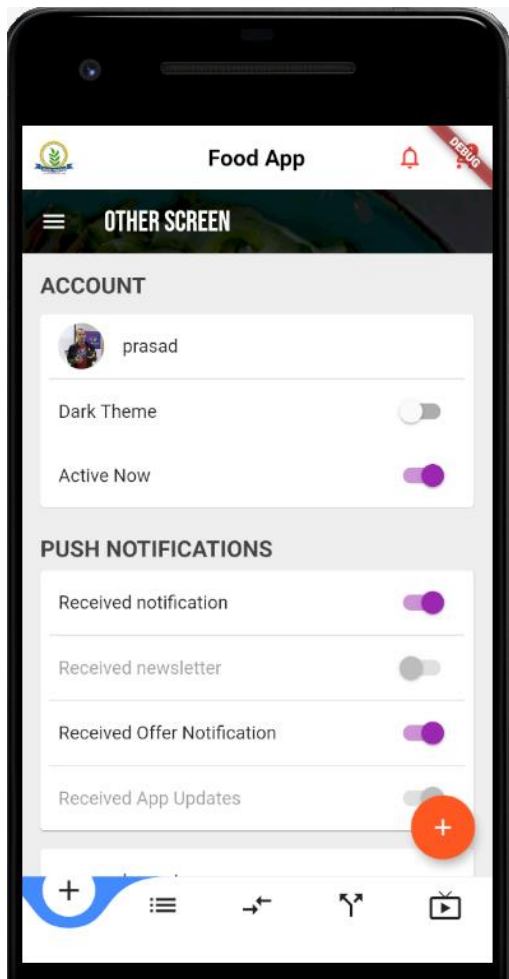
## 1.6 Profile screen



This is the profile page. You can see number of followers, number of following users like that. It displays which categories you favorite to sell, buy like that. As well as you can see your food posts list in here. You can add crop using "Add Food Now" button. Very easy to add food to your shop, and after if you want, you can edit food what you add (change prices, photos, discounts like that).

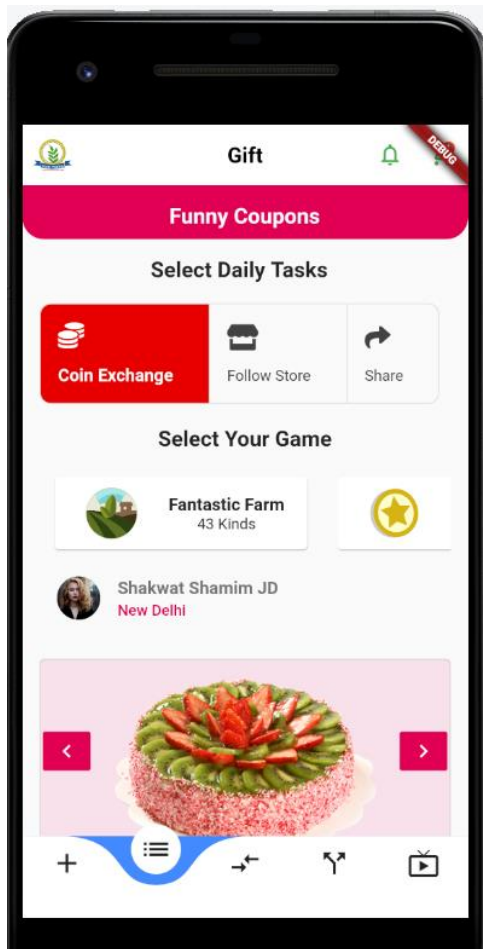


### 1.7 Setting screen



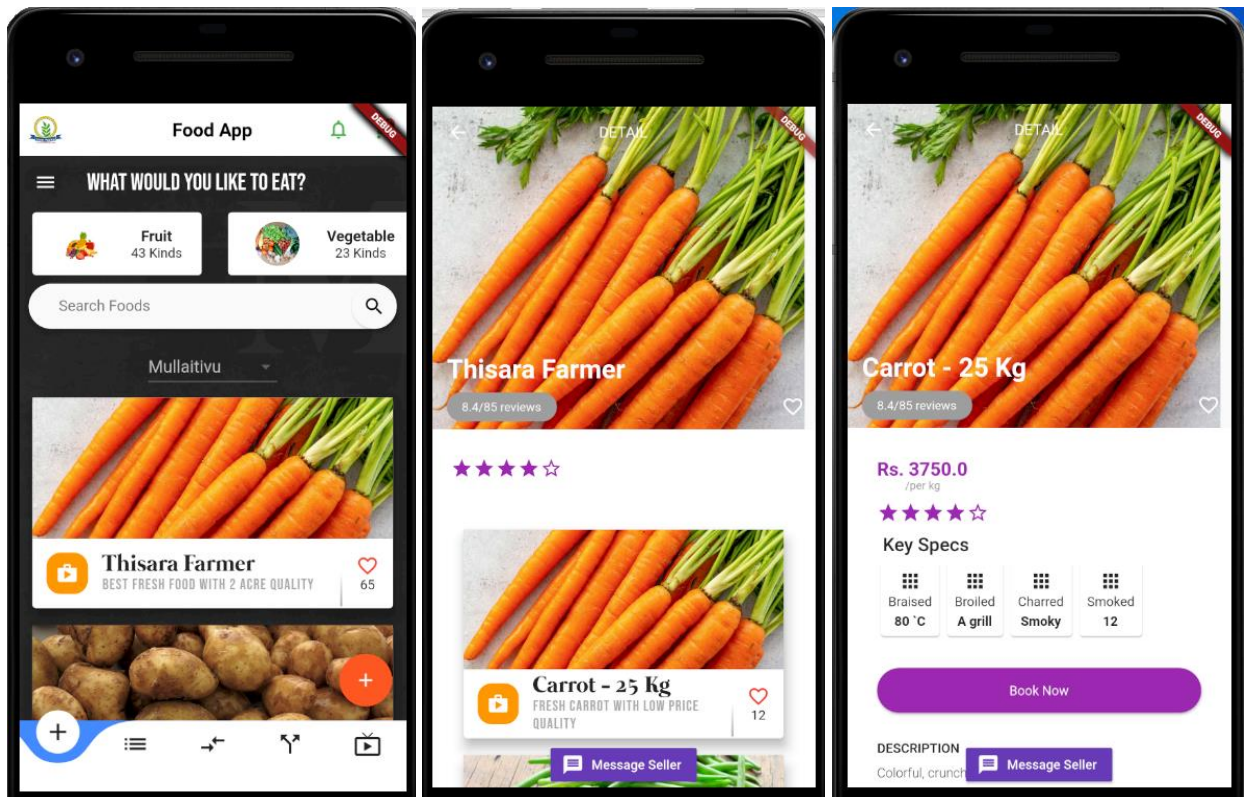
This is simply setting page. You can change theme color to dark. Active now switch is important, because if you are not active in this period, you can inactive your shop that time period. Then, it is very helpful others and other end-user don't want fear that order coming or not. Because you tell if you can or not to end-user via this. You can set displaying notification according to your choice, then, this app doesn't trouble to user.

### 1.8 Gift screen



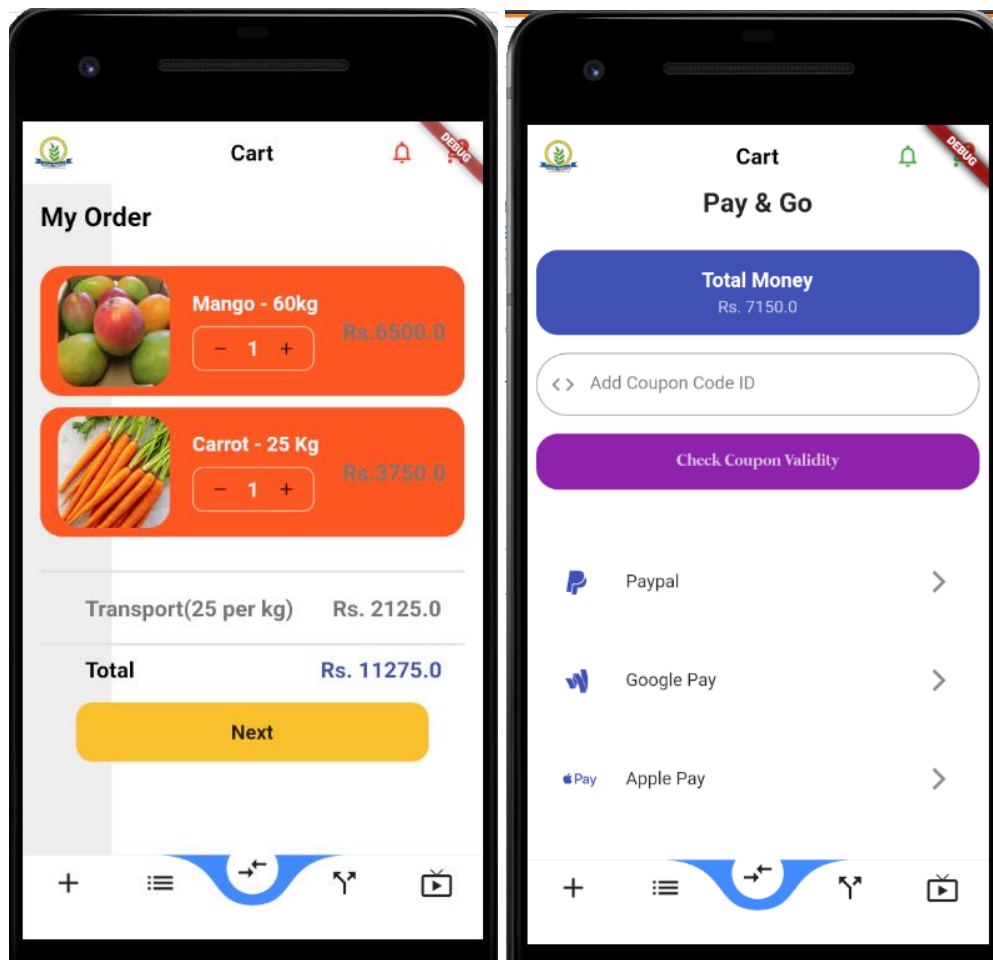
This is funny screen, user can get more coins and discount coupons via playing games, doing daily task like that. If you hope to sell your food with more discounts(sales), then you can add these foods this page. As well as, if you these games (Fantastic Farm, Bubble Challenge like games), you can get coins, that coins can convert to coupons, and that coupon will give discount when order foods. As well as, when user play games, when do daily tasks, they use this app frequently. So, I can earn more money via displaying advertisement. I can give end-user part of that profit via coins and coupons that they earned.

### 1.9 Buy Crops and go to Cart screen



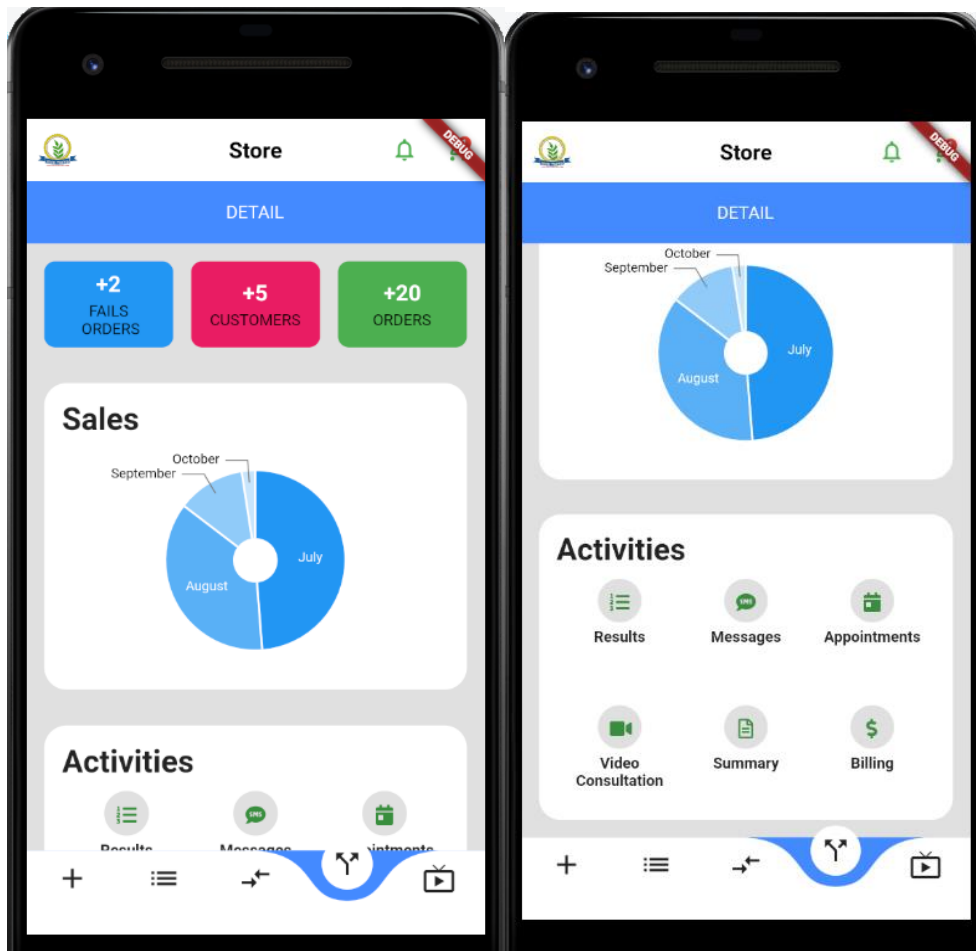
You can see different posts at the home screen, So, Firstly, you want to go in shop after clicking a post, then you can find different crops under different categories. You can see ratings for this shop, they you can get feedback about this shop. After select food under the list, you can go details page. In here, you can get idea about this food. There are what are ratings, prices, size as well as how to cook like that. If you satisfy this food, then you can press “Book Now” button to buy that food. Now you are redirected to cart screen. If you the Transporter, you cannot buy using this account, you want to create another account as buyer. Because Transporter can only Request food to seller, not buy. Then, Seller can accept that request if seller want, after accepted, Transporter can delivery that crops seller to buyer. Otherwise, Seller can select who is transporter that I give my transport service. If seller get transport service from same transporter, then seller can more coupons via our gist screen. As well as, all users are valid this opportunity.





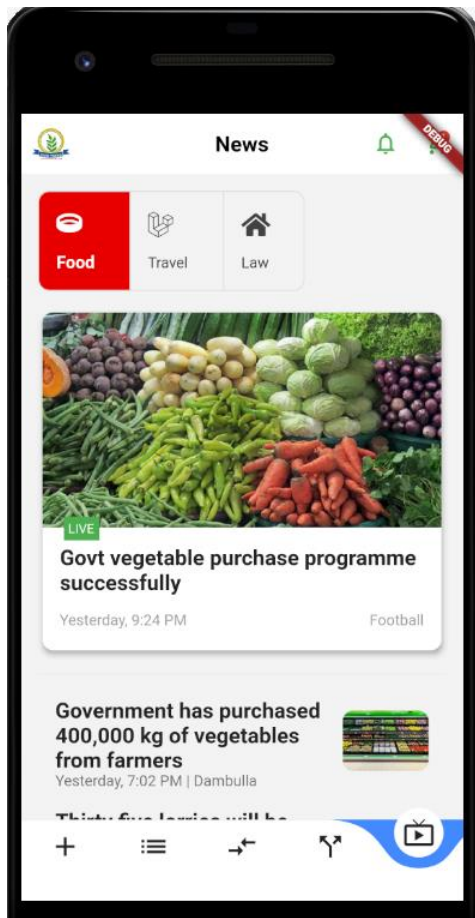
You can see food list in cart page, total of price and transport cost. Transport cost can change with low price. Because seller don't want to get more profits via transport, they can get profits via coupons, transporter vice versa. As well as App manage these costs according to current lows and situations. After, you can buy these foods via any payment methods (PayPal, Google Play, and Apple Play). As well as, you can add coupon Id, then you can reduce your cost smartly. If you want to earn coupons, you want to go gist screen and play game, do daily tasks, share post like that.

## 2. Sales and Activities



This is user's summary page, user can see how many orders fails, how many customers, how many orders that you complete. As well as you can see sales marketing percentage with previous months.

### 3.1 News screen



This is news page, user can see what are marketing situation currently, price details of food, If any changes happen in law sides related food marketing.

## **7. References**

- [1] Stefan Bojnec, Imre Fertő (2010), "Internet and international food industry trade", Industrial Management & Data Systems.
- [2] Freund, C.L. and Weinhold, D. (2002), "The internet and international trade in services", American Economic Review, Vol. 92 No. 2, pp. 236-40.