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GHAZIABAD-201009

**AN**

**INTERNSHIP PROJECT REPORT**

ON

**A Full Stack Grocery App**



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**Abstract**

Shopping is one of the activities that some people consider part of their life, while others do not even think of it. This comparison makes us discover people's problems with shopping.

People have shopping problems such as limited time, ex-pats in foreign countries without cars, transportation issues, people consider physical shopping as a waste of time, health issues, and long-distance to market. And the difficulty in obtaining some items. As the problems mentioned above, we have explored our idea related to personal shopping.

Therefore, we have built an application that combines different market shops, i.e. (Malls, supermarkets, and pharmacies). This personal grocery shopping is an innovative app that allows customers to get all their needs and suggest items based on the previous history. Then deliver items to their doorstep and can facilitate online shopping procedures where customers can browse unlimited products all at one time. This work supports people in exploiting their time to be safer and more accessible than wasting it physically.

Moreover, people can order the product from home instead of going around for long distances for shopping. In addition, this app could help people who are facing health problems and unable to buy something physically to avoid future problems. Finally, some people do not have transportation methods for shopping, and they should keep pace with the evolution.

**ACKNOWLEDGEMENT**

We wish to express our sincere gratitude to God for his protection, providence, guidance, and above all, for sustaining us.

we would like to express our special thanks of gratitude to our **professor** ‘ MR. **MANISH VERMA**  ’as well as our **H.O.D ‘Dr . Sunita Yadav** gave me the golden opportunity to do this wonderful project on the topic ‘**Grocery APP’** which also helped me in doing a lot of Research and gaining some precious knowledge.

Finally , we wish to express my appreciation to my parents for their love and support.

**INTRODUCTION**

Economic growth helps the global expansion of e-commerce, as increased income and confidence increase the demand for online services, which expands the number of suppliers and the size of their delivery networks (Li, C et al. 2020). However. Global retail e-commerce sales were decelerating to 16.5% in 2020 compared to 2019, with 20.2% last year, as shown in Figure 1. Secure Mobile applications are one of the technologies that are spread rapidly and increasingly worldwide over the past decade. It makes the user trust online shopping, which increases the number of customers and trade.

During the COVID-19 pandemic, people have shifted their perspectives from marketplaces to apps to limit the spread of the virus. Most shops, malls, and markets are using their applications, while delivery applications are, on the other hand, Talabat.com.

Grocery shopping is an experience during the pandemic, which helps us buy products and items online easily and smoothly. The Grocery shopping application simplifies all shopping procedures, facilitates payment methods, and enhances UI interaction so that the user's first-time experience could be the best practice. Users can use this grocery app, it includes smooth use, comfortable interaction, and elastic enhancements better than other grocery applications. The reports recorded that the U.S.

online grocery sales grew 22% in 2019 because of the high demand from general COVID-19. However, it is increased by about 40%i n 2020 (Supermarketnews, 2020), as shown in Figure 2. Several studies explored the implementation of online grocery shopping systems. The past decade has Proposed significant developments in mobile commerce (mobile commerce), which opens up severe prospects in the future to increase the size and transmission of trade (Wong et al., 2012; Yang and Kim, 2012). The new development in the mobile phone leads to almost every home through the services and advantages.

This led companies to create services called m-services that help customers browse or buy products and services from merchants via mobile devices anywhere and anytime (Hung et al., 2012; Yang & Kim, 2012).

Besides, many recent researchers have investigated the factors that impact the customer purchasing behavior in online grocery shopping systems, which include the delivery costs (Goethals et al., 2012; Pozzi, 2012; Schmid & Axhausen, 2019) and delivery times (Agatz et al., 2011; Köhler et al., 2020; Strauss et al., 2020).

The proposed grocery is an intelligent app that provides many features such as offers and the latest products with the highest quality, which people and families can use. It contains different categories targeting all levels of users, including electronics, sports, and households. Those features are all to attract customers with their various preferences.

We aim to be a point of confidence among the Omani community with high products, service quality, and communication with users in general. Furthermore, it is more flexible and elastic in communication queries and security systems to feel more confident to share their information. Applications, in general, can facilitate people's lives faster; we worked with everything we could to simplify our application in the form of grocery so that people in our dear country can keep pace with development.

**OBJECTIVE**

1. Online shopping grocery has exponential growth, and become a fascinating area for research because of the new requirements of new life and the COVID-19 situation. Therefore, it is interesting to study the factors that affect consumers' behaviour toward online shopping for groceries.

2. Limited experimental research has been carried into measuring the attributes of online shopping grocery buying/selling behaviour in a rapidly changing e-commerce market and rapidly increasing smartphone usage.

3. There is no complete examination of the wide range of factors, including (security, trust, service support, flexible transactions, and price promotions) and their impact on buying behaviour towards online shopping groceries.

4. Typical applications for shopping for groceries attract many clients because of the several facilities and the variety of services, which include (delivery services, price comparison, and grocery discounts).

In this work, we will fill the research gaps by developing and examining a conceptual model for online grocery shopping and the factors that impact the customer's attitude.

And then develop intelligent mobile apps that can respond to all customer needs and e-commerce characteristics like an expert system.

**PROPOSED SYSTEM**

The proposed Online Grocery shopping is an intelligent multistage mobile application that helps customers shop and delivers the needed items quickly and safely. It is implemented smart data mining that records the customer history and aggregates the things based on the customer needs. It sends notifications related to new items and offers, as shown in Figure 3. The Flutter programming language and android studio software are used to implement the proposed mobile application for online grocery shopping that works with different operating systems (Android and IOS).

****

This work aims to achieve the following goals:

1. Conduct a critical literature survey of previous studies to identify the critical features affecting consumer behavior.

2. Develop the conceptual model for the online grocery shopping app that offers different facilities such as secure, fast, and low prices.

3. Develop a smart module that aggregates customer needs based on demographic attributes.

4. Develop and implement the online grocery shopping app that works with different operating systems (Android and IOS).

**COMPETITIVE PROFILE MATRIX**

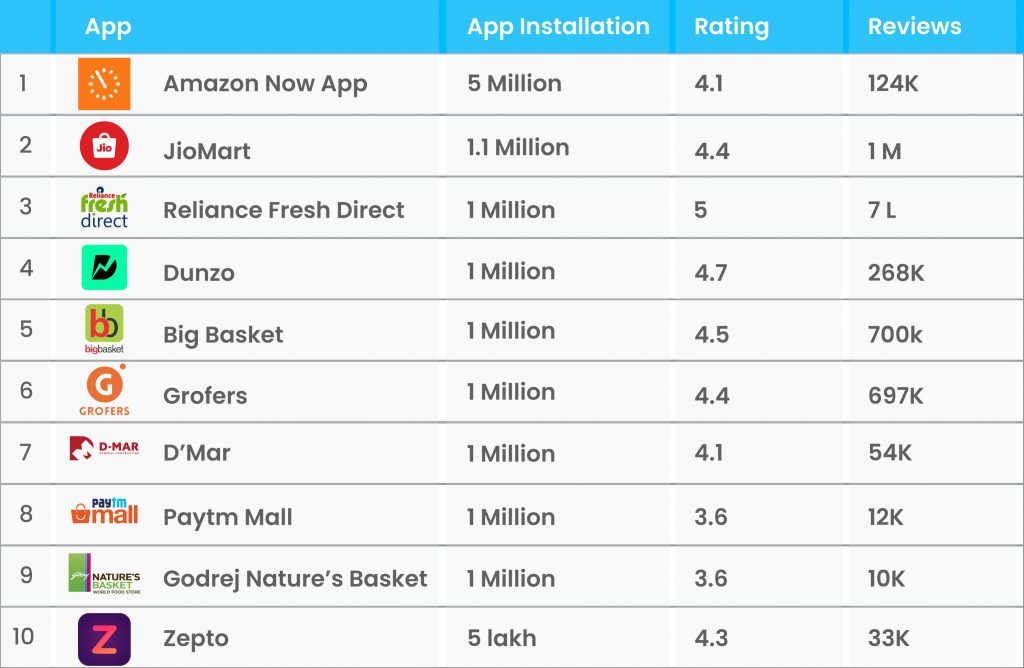
A competitive profile matrix is a method that measures and compares

companies or an application, through the points of weaknesses and strengths.

CPM matrix helps us to compare those related works we have discussed that

are like Grocery Personal Shopping such as Amazon, and JioMart, and Big

Basket in order to understand our external environment.



Where it shows that amazon and JioMart got the Highest installation as the

The strongest competitor to our Grocery Personal Shopping is the above .

**PROPOSED APP IMPLEMENTATION AND SETUP**

This section will present the implementation of the mobile shopping grocery and new development

in information technology and image processing.

This application is an online mobile app that works with different platforms, such as android and IOS.

Also, it offers various functions that facilitate customer needs and introduce multi-functions, such as

push notifications and intelligent data aggregation.

A secure database that saves user information privately and does not share this information with

anyone other. In addition, a secure payment method using PayPal and another trust methods.

The USE-Case diagram that shows the actors and the main function in the proposed system, which

has two main actors (admin and user).

The guest can see only the first screen of the application. A pop-up message will appear after a

certain period and asks the quest to complete the registration process.

The user with an account can use logins to the system, orders the product, and pay its price in the

system (app).

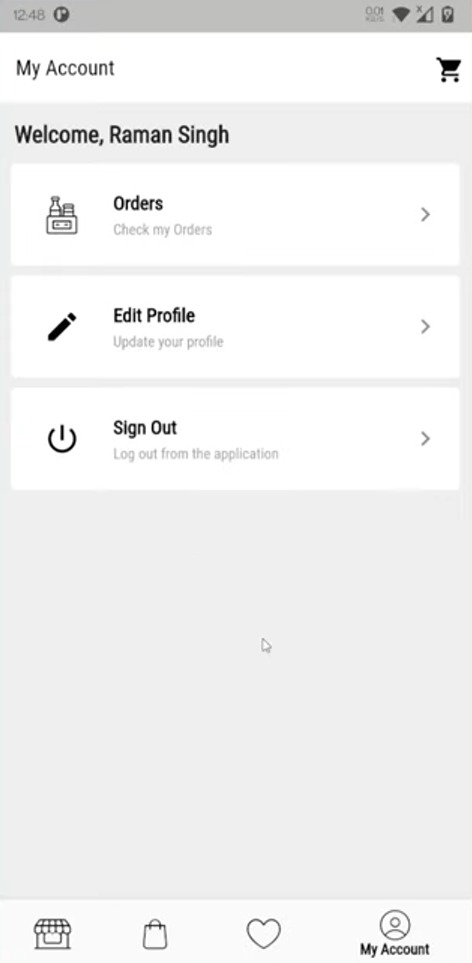
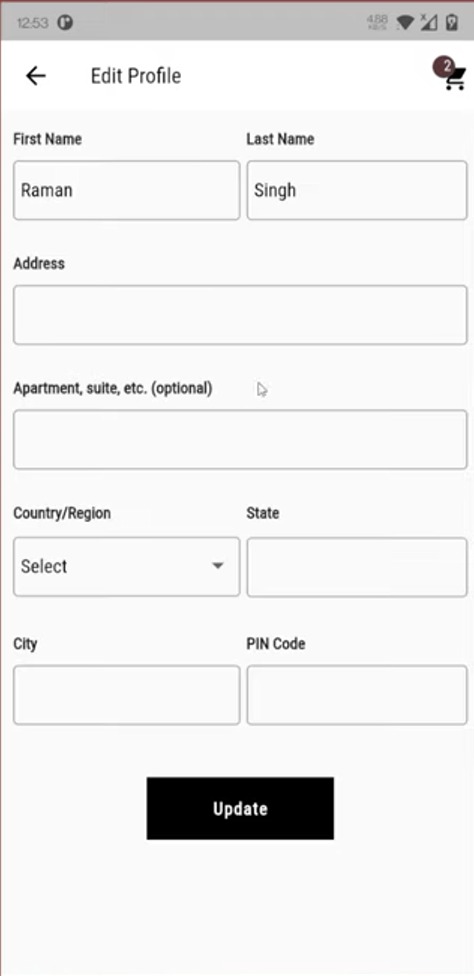
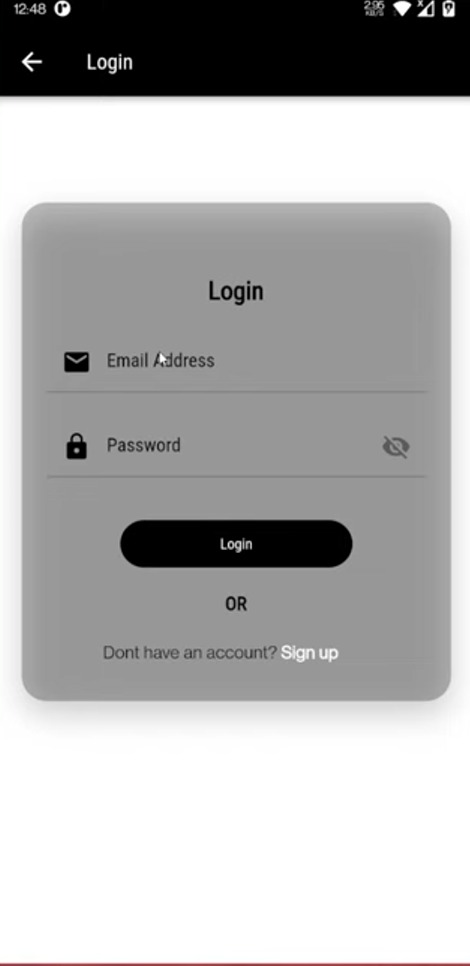
The administrator (admin actor) has the authorization and permission to manage the system

activities.

The app home screen shows the new offers and the user functions, such as add to cart, view items, payment for the cart, rest password, edit user information, etc.

The home screen includes the navigation bar, carousel, and side menu bar.

The navigation bar consists of functions, such as Home, Category, Cart, and profile.



Each of those categories has its own screen in android studio for better use,

and for continuous updating of data. Because it is a dynamic application that

has fast-changing data and changing prices; therefore, several screens are

distributed to enable the admin to update the list of items,

prices and sale offer quickly and accurately.

This App presents the sign-up and login screen, which enables the user to login

into the system or the guest to register an account.

If the user forgets the password, then the user can press forget the password

and enter the registered email, so the recovery process is running.

The app shows the side menu screen that includes about us, settings, privacy

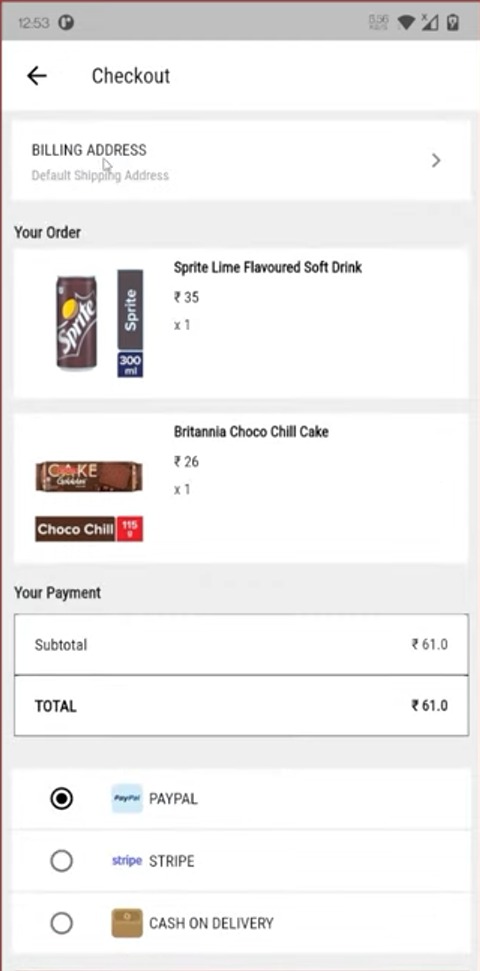
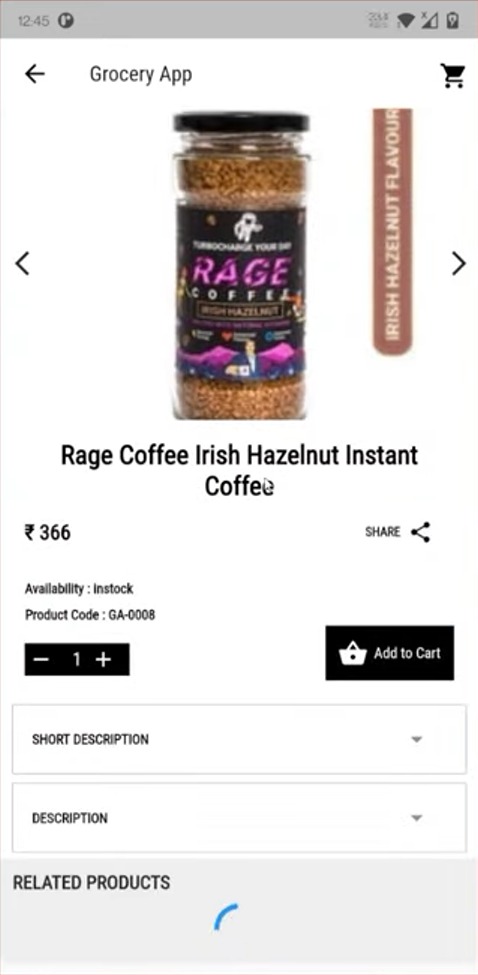
policy, terms and conditions, and logout.

The app shows the items categories and subcategories that include an item

specifications, such as name, description, rate (#Stars & #like), price, and add to cart.

Once the user adds the items to the cart, as shown above, there will be two functions for completing the shopping process.

Total functions: collects the total value of the products and purifies the result for the user. Pay function: once the total price of the products appears, then the user can pay the amount to complete purchasing process the following shows an example of an item description and add-to-cart function. After the user adds the item to the cart, a message shows as "your item add to the cart" as shown as following Then, the user will receive a confirmation email to pay by either PayPal or cash.



The scope of this work serves principles of E-commerce, which includes user

Friendliness, ease of navigating, unique Design, emphasis on Security, target

customers, quick Search menu, informative product descriptions, and truest

app. Besides, serving the ethical codes in keeping users' information away from

any alteration or sharing in the public domain.

**CODE FOR DIFFERENT PAGES AND SNAPSHOTS**

**Login Screen:**

**import 'dart:convert';**

**import 'package:flutter/material.dart';**

**import 'package:grocery\_app/screens/home\_dashboad\_screen.dart';**

**import 'package:grocery\_app/util/responsive.dart';**

**import 'package:grocery\_app/util/shopping\_colors.dart';**

**import 'package:grocery\_app/widgets/login/button\_login\_animation.dart';**

**import 'package:grocery\_app/widgets/login/wave\_clipper.dart';**

**class LoginUI extends StatefulWidget {**

**@override**

**\_LoginUIState createState() => \_LoginUIState();**

**}**

**class \_LoginUIState extends State<LoginUI> {**

**TextEditingController email = TextEditingController();**

**TextEditingController password = TextEditingController();**

**Widget \_loginPanel(double w, double h) {**

**return ListView(**

**// crossAxisAlignment: CrossAxisAlignment.start,**

**// mainAxisAlignment: MainAxisAlignment.center,**

**children: <Widget>[**

**\_box(email, "Email", TextInputType.text),**

**\_box(password, "Password", TextInputType.text),**

**Container(**

**margin: EdgeInsets.only(**

**top: h / 20, left: 25, right: 25, bottom: 25),**

**child: ButtonLoginAnimation(**

**label: "Login",**

**fontColor: Colors.white,**

**background: shrineGreen400,**

**borderColor: shrineGreen400,**

**child: HomeDashBoardScreen(),**

**)),**

**\_facebookButton('f', shrineGreen400, 'Log in with Facebook',**

**shrineGreen300),**

**],**

**);**

**}**

**@override**

**Widget build(BuildContext context) {**

**double h = MediaQuery.of(context).size.height;**

**double w = MediaQuery.of(context).size.width;**

**return Scaffold(**

**resizeToAvoidBottomInset: true,**

**body: Stack(**

**children: <Widget>[**

**Container(**

**padding: EdgeInsets.only(bottom: 40),**

**}**

**width: w,**

**child: ClipPath(**

**clipper: WaveClipper(),**

**child: ColoredBox(**

**color: shrineGreen400,**

**),**

**),**

**),**

**Home Screen:**

**import 'package:flutter/material.dart';**

**import 'package:grocery\_app/model/categories.dart';**

**import 'package:grocery\_app/model/product.dart';**

**import 'package:grocery\_app/screens/cart\_screen.dart';**

**import 'package:grocery\_app/screens/explore\_screen.dart';**

**import 'package:grocery\_app/screens/fav\_screen.dart';**

**import 'package:grocery\_app/screens/login\_screen.dart';**

**import 'package:grocery\_app/screens/shop\_screen.dart';**

**import 'package:grocery\_app/util/responsive.dart';**

**import 'package:grocery\_app/util/shopping\_colors.dart';**

**import 'package:grocery\_app/widgets/nav\_drawer.dart';**

**import 'package:provider/provider.dart';**

**class HomeDashBoardScreen extends StatefulWidget {**

**@override**

**\_HomeDashBoardScreenState createState() => \_HomeDashBoardScreenState();**

**}**

**class \_HomeDashBoardScreenState extends State<HomeDashBoardScreen> {**

**final GlobalKey<ScaffoldState> \_scaffoldKey = new GlobalKey<ScaffoldState>();**

**int \_currentIndex = 0;**

**List<Product> \_categoryProducts = [];**

**@override**

**void initState() {**

**// TODO: implement initState**

**super.initState();**

**}**

**Widget navigateToScreen() {**

**switch (\_currentIndex) {**

**case 1:**

**return ExploreScreen(**

**categoryProducts: \_categoryProducts,**

**);**

**case 2:**

**return CartScreen();**

**case 3:**

**return FavScreen();**

**case 0:**

**default:**

**return ShopScreen(**

**categoryClick: (String categoryId) {**

**setState(() {**

**\_categoryProducts = Provider.of<Categories>(context)**

**.getProductsById(context, categoryId);**

**\_currentIndex = 1;**

**});**

**},**

**);**

**}**

**}**

**@override**

**Widget build(BuildContext context) {**

**return Scaffold(**

**key: \_scaffoldKey,**

**drawer: !Responsive.isMobile(context) ? SizedBox() : NavDrawer(),**

**appBar: AppBar(**

**centerTitle: true,**

**// elevation: 0,**

**leading: !Responsive.isMobile(context)**

**? SizedBox()**

**: GestureDetector(**

**onTap: () {**

**\_scaffoldKey.currentState!.openDrawer();**

**},**

**child: Padding(**

**padding: const EdgeInsets.all(8.0),**

**child: ClipOval(**

**child: Image.asset(**

**'shopping\_assets/images/user.png',**

**fit: BoxFit.cover,**

**alignment: Alignment.topCenter,**

**),**

**),**

**),**

**),**

**actions: [**

**GestureDetector(**

**onTap: () {**

**Navigator.pushReplacement(context,**

**MaterialPageRoute(builder: (\_) {**

**return LoginUI();**

**}));**

**},**

**child: Padding(**

**padding: const EdgeInsets.all(8.0),**

**child: Icon(**

**Icons.logout,**

**size: 30,**

**),**

**),**

**)**

**],**

**backgroundColor: shrineGreen400,**

**title: Text(**

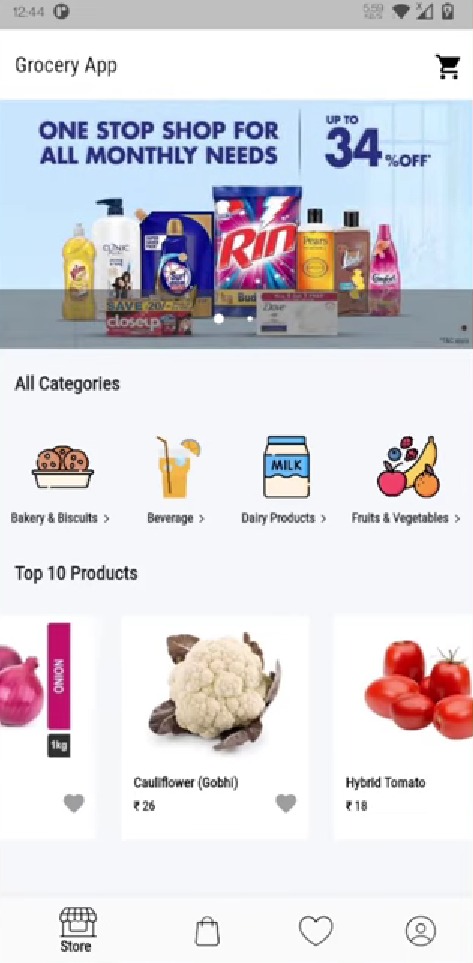
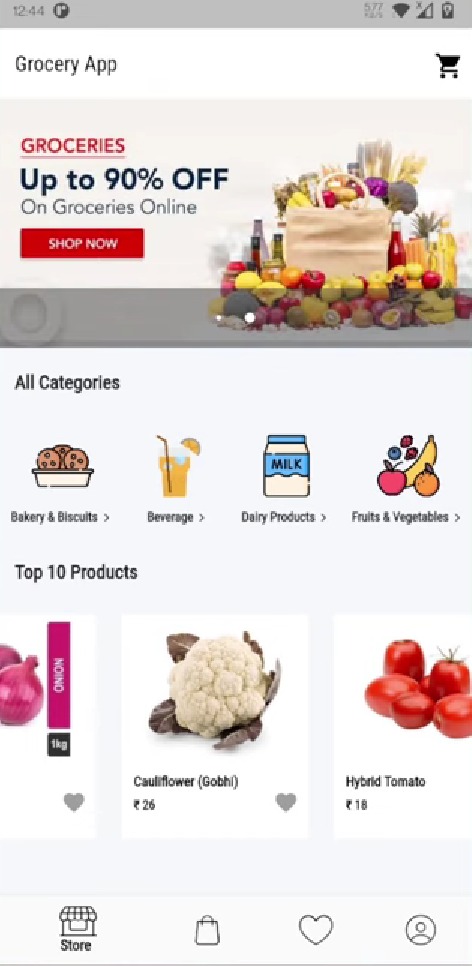
**'Find Products',**

**style: TextStyle(fontFamily: 'Gilroy'),**

**),**

**),**

**Snapshots:**



**Add to cart Screen:**

**import 'package:flutter/material.dart';**

**import 'package:grocery\_app/model/cart.dart';**

**import 'package:grocery\_app/model/orders.dart';**

**import 'package:grocery\_app/screens/product\_details\_screen.dart';**

**import 'package:grocery\_app/util/shopping\_colors.dart';**

**import 'package:grocery\_app/widgets/cart/cart\_widget.dart';**

**import 'package:provider/provider.dart';**

**class CartScreen extends StatefulWidget {**

**@override**

**\_CartScreenState createState() => \_CartScreenState();**

**}**

**class \_CartScreenState extends State<CartScreen> {**

**@override**

**Widget build(BuildContext context) {**

**final cart = Provider.of<Cart>(context);**

**return Column(**

**children: <Widget>[**

**Card(**

**margin: EdgeInsets.all(16),**

**child: Padding(**

**padding: EdgeInsets.all(8),**

**child: Row(**

**mainAxisAlignment: MainAxisAlignment.spaceBetween,**

**children: <Widget>[**

**Text(**

**'Total',**

**style: TextStyle(fontSize: 20, color: kTextColor),**

**),**

**Spacer(),**

**Chip(**

**label: Text(**

**'\$${cart.totalAmount.toStringAsFixed(2)}',**

**),**

**backgroundColor: shrineGreen400,**

**),**

**FlatButton(**

**child: Text('ORDER NOW'),**

**onPressed: () {**

**Provider.of<Orders>(context, listen: false).addOrder(**

**cart.items.values.toList(),**

**cart.totalAmount,**

**);**

**cart.clear();**

**},**

**textColor: shrineGreen400,**

**)**

**],**

**),**

**),**

**),**

**SizedBox(height: 10),**

**Expanded(**

**child: ListView.builder(**

**itemCount: cart.items.length,**

**itemBuilder: (ctx, i) => CartWidget(**

**cart.items.values.toList()[i].id,**

**cart.items.keys.toList()[i],**

**cart.items.values.toList()[i].price,**

**cart.items.values.toList()[i].quantity,**

**cart.items.values.toList()[i].title,**

**cart.items.values.toList()[i].imageUrl,**

**),**

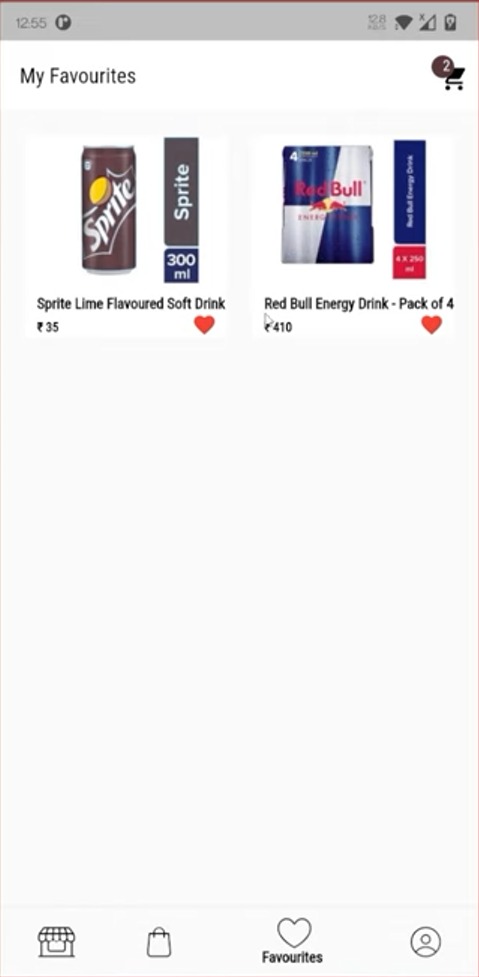
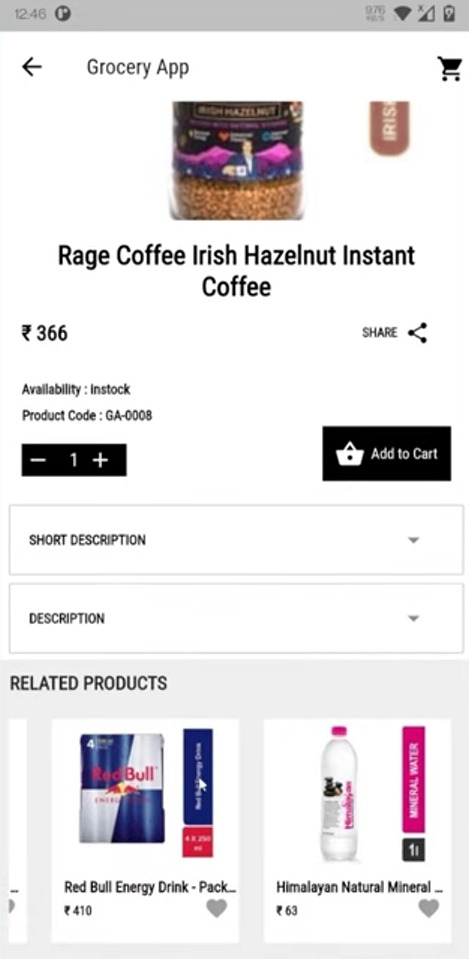
**),**

**)**

**],**

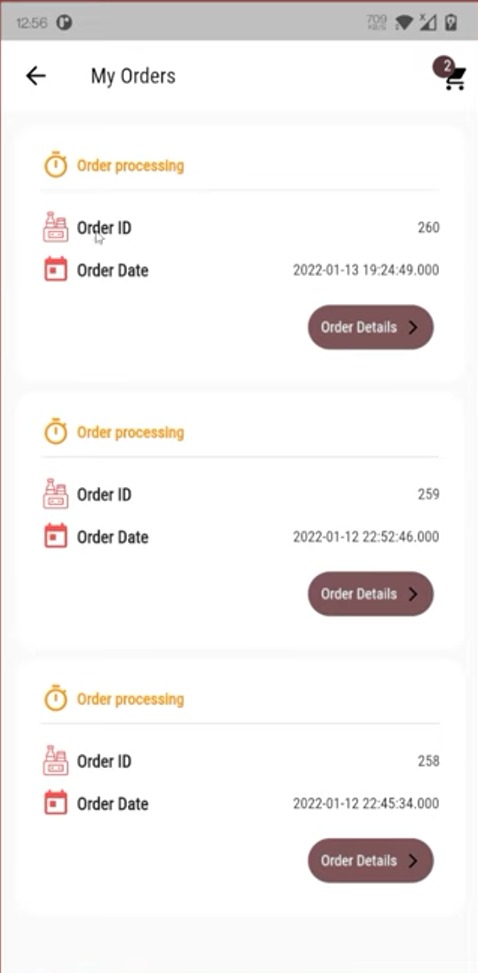
**);**

**}**



**In this screen, user can add his orders to the cart that shows also its details.**

**As follow-**



**Explore Screen:**

**import 'package:flutter/material.dart';**

**import 'package:grocery\_app/model/product.dart';**

**import 'package:grocery\_app/model/products.dart';**

**import 'package:grocery\_app/screens/product\_details\_screen.dart';**

**import 'package:grocery\_app/util/responsive.dart';**

**import 'package:grocery\_app/widgets/explore/product\_widget.dart';**

**import 'package:grocery\_app/widgets/nav\_drawer.dart';**

**import 'package:provider/provider.dart';**

**class ExploreScreen extends StatefulWidget {**

**final List<Product>? categoryProducts;**

**const ExploreScreen({Key? key, this.categoryProducts}) : super(key: key);**

**@override**

**\_ExploreScreenState createState() => \_ExploreScreenState();**

**}**

**class \_ExploreScreenState extends State<ExploreScreen> {**

**List<Product>? \_products;**

**TextEditingController editingController = TextEditingController();**

**@override**

**Widget build(BuildContext context) {**

**if (widget.categoryProducts == null || widget.categoryProducts!.isEmpty) {**

**\_products = Provider.of<Products>(context).items;**

**} else {**

**\_products = widget.categoryProducts;**

**}**

**return Row(**

**children: [**

**Responsive.isMobile(context) ? SizedBox() : NavDrawer(),**

**Expanded(**

**child: Column(**

**children: [**

**Padding(**

**padding: const EdgeInsets.all(8.0),**

**child: TextFormField(**

**cursorColor: Colors.grey.withOpacity(0.4),**

**autofocus: false,**

**style: TextStyle(color: Colors.black54),**

**onChanged: (value) {**

**// filterSearchResults(value);**

**},**

**controller: editingController,**

**decoration: InputDecoration(**

**hintText: "Search Store",**

**filled: true,**

**fillColor: Colors.grey.withOpacity(0.1),**

**hoverColor: Colors.grey.withOpacity(0.1),**

**focusColor: Colors.grey.withOpacity(0.1),**

**focusedBorder: OutlineInputBorder(**

**borderSide: BorderSide(color: Colors.white),**

**borderRadius: BorderRadius.circular(24),**

**),**

**enabledBorder: OutlineInputBorder(**

**borderSide: BorderSide(color: Colors.white),**

**borderRadius: BorderRadius.circular(24),**

**),**

**prefixIcon: Icon(**

**Icons.search,**

**color: Colors.black,**

**),**

**border: OutlineInputBorder(**

**borderRadius: BorderRadius.all(Radius.circular(25.0)))),**

**),**

**),**

**Expanded(**

**child: GridView.builder(**

**shrinkWrap: true,**

**padding: EdgeInsets.all(16.0),**

**itemBuilder: (\_, index) {**

**Product product = \_products![index];**

**return ChangeNotifierProvider.value(**

**value: product,**

**child: InkWell(**

**onTap: () {**

**Navigator.of(context).push(MaterialPageRoute(builder: (ctx) {**

**return ProductDetailsScreen(product: product);**

**}));**

**},**

**child: ProductWidget(),**

**),**

**);**

**},**

**itemCount: \_products!.length,**

**gridDelegate: SliverGridDelegateWithFixedCrossAxisCount(**

**crossAxisCount: Responsive.getCrossAxisCount(context),**

**// chi…**

**fav\_screen.dart**

**import 'package:flutter/material.dart';**

**import 'package:grocery\_app/model/products.dart';**

**import 'package:grocery\_app/widgets/fav/FavWidget.dart';**

**import 'package:provider/provider.dart';**

**class FavScreen extends StatefulWidget {**

**@override**

**\_FavScreenState createState() => \_FavScreenState();**

**}**

**class \_FavScreenState extends State<FavScreen> {**

**@override**

**Widget build(BuildContext context) {**

**final products = Provider.of<Products>(context).favoriteItems;**

**return Column(**

**children: <Widget>[**

**SizedBox(height: 10),**

**Expanded(**

**child: ListView.builder(**

**itemCount: products.length,**

**itemBuilder: (ctx, i) => FavWidget(**

**product: products[i],**

**),**

**),**

**)**

**],**

**);**

**}**

**}**

**Payment Screen:**

**import 'package:flutter/material.dart';**

**class Responsive extends StatelessWidget {**

**final Widget mobile;**

**final Widget tablet;**

**final Widget desktop;**

**const Responsive({**

**Key? key,**

**required this.mobile,**

**required this.tablet,**

**required this.desktop,**

**}) : super(key: key);**

**// This size work fine on my design, maybe you need some customization depends on your design**

**// This isMobile, isTablet, isDesktop helep us later**

**static bool isMobile(BuildContext context) =>**

**MediaQuery.of(context).size.width < 650;**

**static bool isTablet(BuildContext context) =>**

**MediaQuery.of(context).size.width < 1100 &&**

**MediaQuery.of(context).size.width >= 650;**

**static bool isDesktop(BuildContext context) =>**

**MediaQuery.of(context).size.width >= 1100;**

**static int getCrossAxisCount(BuildContext context) {**

**if (Responsive.isDesktop(context)) {**

**return 4;**

**} else if (Responsive.isTablet(context)) {**

**return 3;**

**} else {**

**return 2;**

**}**

**}**

**@override**

**Widget build(BuildContext context) {**

**return LayoutBuilder(**

**// If our width is more than 1100 then we consider it a desktop**

**builder: (context, constraints) {**

**if (constraints.maxWidth >= 1100) {**

**return desktop;**

**}**

**// If width it less then 1100 and more then 650 we consider it as tablet**

**else if (constraints.maxWidth >= 650) {**

**return tablet;**

**}**

**// Or less then that we called it mobile**

**else {**

**return mobile;**

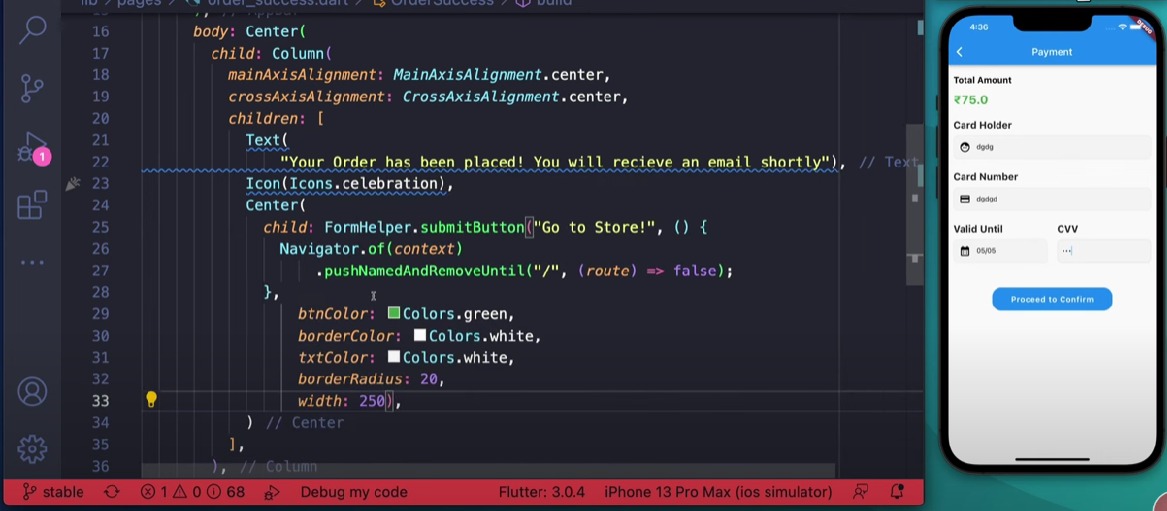
**}**

**},**

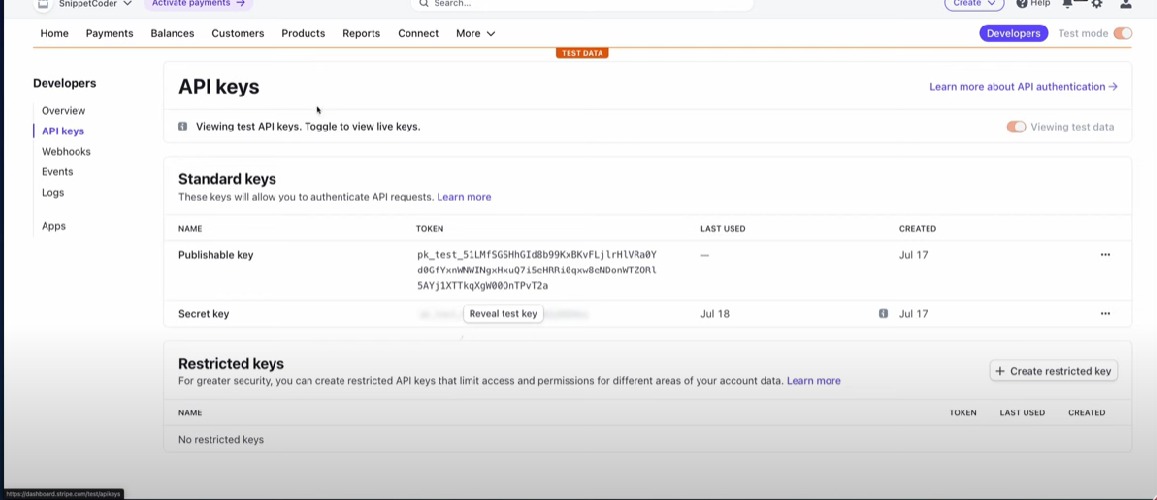
**);**

**}**

**}**



**Snapshot of API Using:**



**Conclusion & Future Work**

The preventive situation due to Covid-19 imposed a ban on movement and the need to distance. Here appears the importance of having a mobile app for sale via the Internet that provides an easy and safe way to shop and reduces the trouble of moving between markets.

You can have different brands of products in various components of a country, or possibly globally instead of being restricted by geography. The current application lets you shop while you are at your home and is a convenient way to shop at any time in the morning or evening and from anywhere, quickly and safely.

It also saves the hassle of moving between stores and browsing various goods in one place and at competitive prices lower than the price in the supermarket with the constant offers of cheap deals. It offers weekly and monthly sales and discounts for membership holders, saving money compared to purchasing from multiple locations and retail.

The easy search feature is also provided by the name of the material or its classification by quickly and conveniently accessing the required materials. The comparison feature also provides a way to get the desired product at the lowest price by comparing all prices and finding the best deal that fits your budget the most.

The application also provides multiple means of online payment, which saves the customer from exchanging currency or finding the necessary amount of currency.

The innovative aggregation feature also saves time in viewing previous or always-purchased items with every new shopping. This application provides privacy for buying and selling without embarrassment. Online stores are good for discreet purchases of things like embarrassing things, underwear, etc.

This allows you to buy lingerie without the shame or paranoia that humans are looking at me. Future directions for the development of the application are to link the tab with the most significant number of international stores to provide various goods of number, type, and classification.

The application also connects with delivery companies globally and locally for faster delivery. Marketing the application locally and globally will increase the number of users, leading to an increase in demand, supply, and exchange of ideas to improve services

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