Rajiv Gandi University of Knowledge and Technologies,
RK Valley

Mini Project Report E3 SEM-2 Mini Project (2018 – 2019)

Submitted by

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SWACHHDHANIKA AGRICUlLURE ONLINE SHOPPING APP

Under the guidance of

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CERTIFICATE

This is to certify that this work entitle " **SwachhDhanika agriculture online shopping app** " was successfully carriedout by **Usha (R141402) Pushpa (R141417)** fulfilment of the requirements leading to award the credits for **E3 SEM-2 Mini Project / Project** in Computer Science by Rajiv Gandi University of Knowledge and Technologies, RK Valley during the academic year 2018-2019.

Project Guide
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Abstract-

In our day to day life we consume food and our survival is based on mainly food. A considerable amount of our dealing with the customer directly so the prices of the food is coming from farms and other means too. These farmers products offered by the farmer to the customer will do their hard work for growing and serving many lives across also be affordable to customer, which will help both the the country, which pays for their source of income. But due to farmer and the customer where the customer can save intermediates in the selling of their final products the farmers some money and the farmer will gain extra profit that are unable to make their profit and mostly live poor. By this project we will be able to connect farmers directly to the he deserved. customer so that direct dealing of products can be accomplished. This will result in a significant decrease in the prices of the products currently available in the market as well as the profit will directly reach the farmers pocket.

We are surrounded by technology but there are manypeople who are still unaware of the benefits of this technology or its use, by the help of this project and the support for the awareness of the projects many farmers will be able to use as well as will be taught how to use this application with its benefits.

Introduction :

we are providing an android app namley SwachhDhanika which makes easier for Farmers. Main purpose behind this app is to create a platform between farmers and customers for buying and seling the Goods(seeds,food items).

Requirement Analysis :

The project needs several requirements to be gathered before processing to develop the SwachhDhanika. One among them includes gathering images and source codes about the firebase functions like adding, deleting, replacing, image storing, authentication . The other codes are navigation view , tablayout, recycler view, menus, layout inflaters,chat application,otp authentication etc ..... implemented our Applicaiton and it makes our Applicaiton more secure .

It was noted more than 80% of the Android devices are using the version of kitkat or more . The functionality requirements of the application is simple and straightforward where as the technial details involved research on the available android technologies.

User interface is most important for any android application and android has multiple facilites for drawing user interface for applications. Few study materials in android to code with the concepts like libaries view and animations were also gathered so as to smooth the application development process. These gathered information helped to provide a clear direction of deciding the software requirements and hardware requirements.

Theory-

Android :

Android is a Linux-based operating system designed primarily for touchscreen mobile devices such as smartphones and tablet computers.Initially developed by Android, Inc., which

Google backed financially and later bought in 2005. Android is open source and Google releases the code under the Apache License. This open source code and permissive licensing allows the software to be freely modified and distributed by device manufacturers, wireless carriers and enthusiast developers. Additionally, Android has a large community of developers writing applications ("apps") that extend the functionality of devices, written primarily in a customized version of the Java programming language.

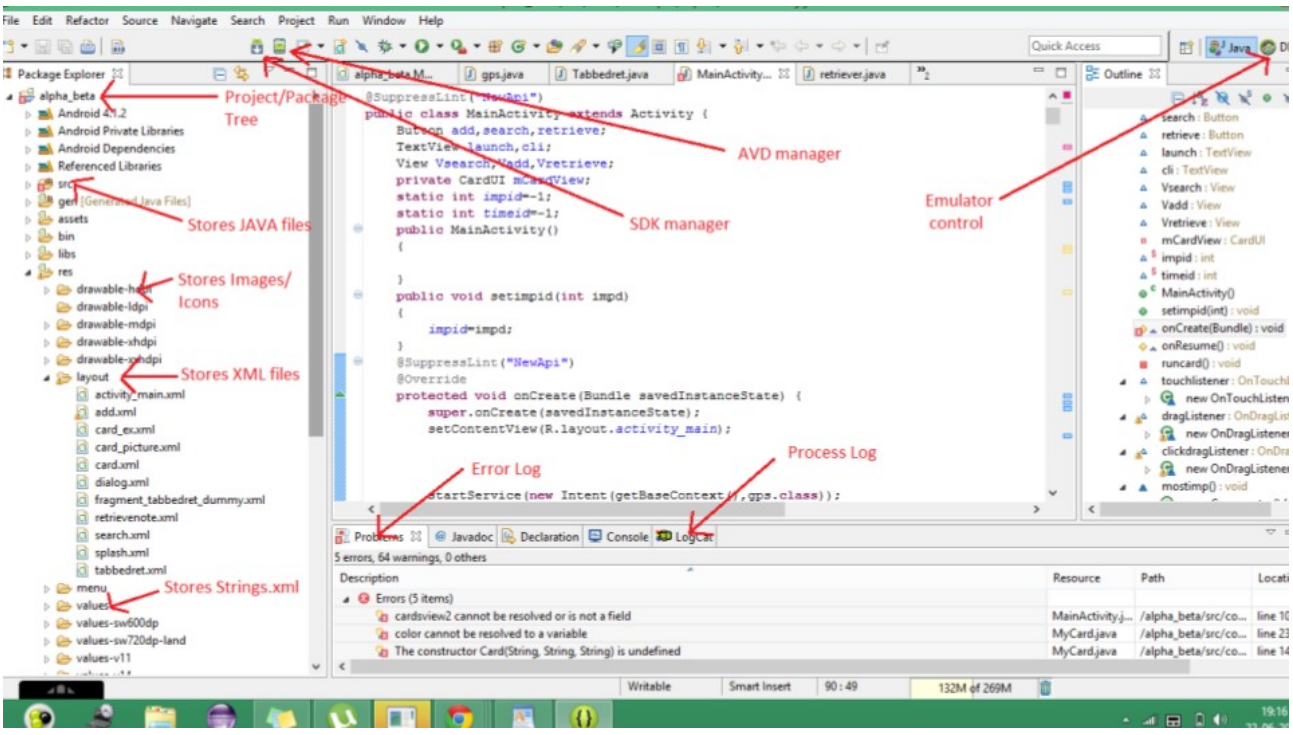
Android software development is the process by which new applications are created for the Android operating system. Applications are usually developed in the Java programming language using the Android Software Development Kit. ADT (Android Development Tools) is the software used to develop android apps. It basically encases Eclipse IDE,which is a multi-language Integrated development environment (IDE) comprising a base workspace and an extensible plug-in system for customizing the environment .. The latest version comes with ADT plugin preinstalled and bundled to the IDE.Application programming interface (API) specifies how some softwarecomponents should interact with each other.

Application is developed by using the Google based Technologies i.e; Android Studio and Firebase Cloud. Implementing the Application in the Android Studio and connecting to the Firebase Cloud. We are using Sql database for the connection. And firestore and firebase nitifications

Firebase :

Firebase is a Backend-as-a-Service BaaS-that started as a YC11 startup and grew up into a next-generation app-development platform on Google Cloud Platform. Firebase frees developers to focus crafting fantastic user experiences. You don’t need to manage servers. You don’t need to write APIs. Firebase is your server, your API and your datastore. All this Features are managed by the Google. It provides the following features :

1.Realtime Database
2.Authentication
3.File Storing
4.Hosting



Our Approach :

Introduction :

This document has requiments of Original Degree Application.
This app is usefull for the passedout students of a university.

Technologies :

Android studio, Firebase .

Software Requirements :

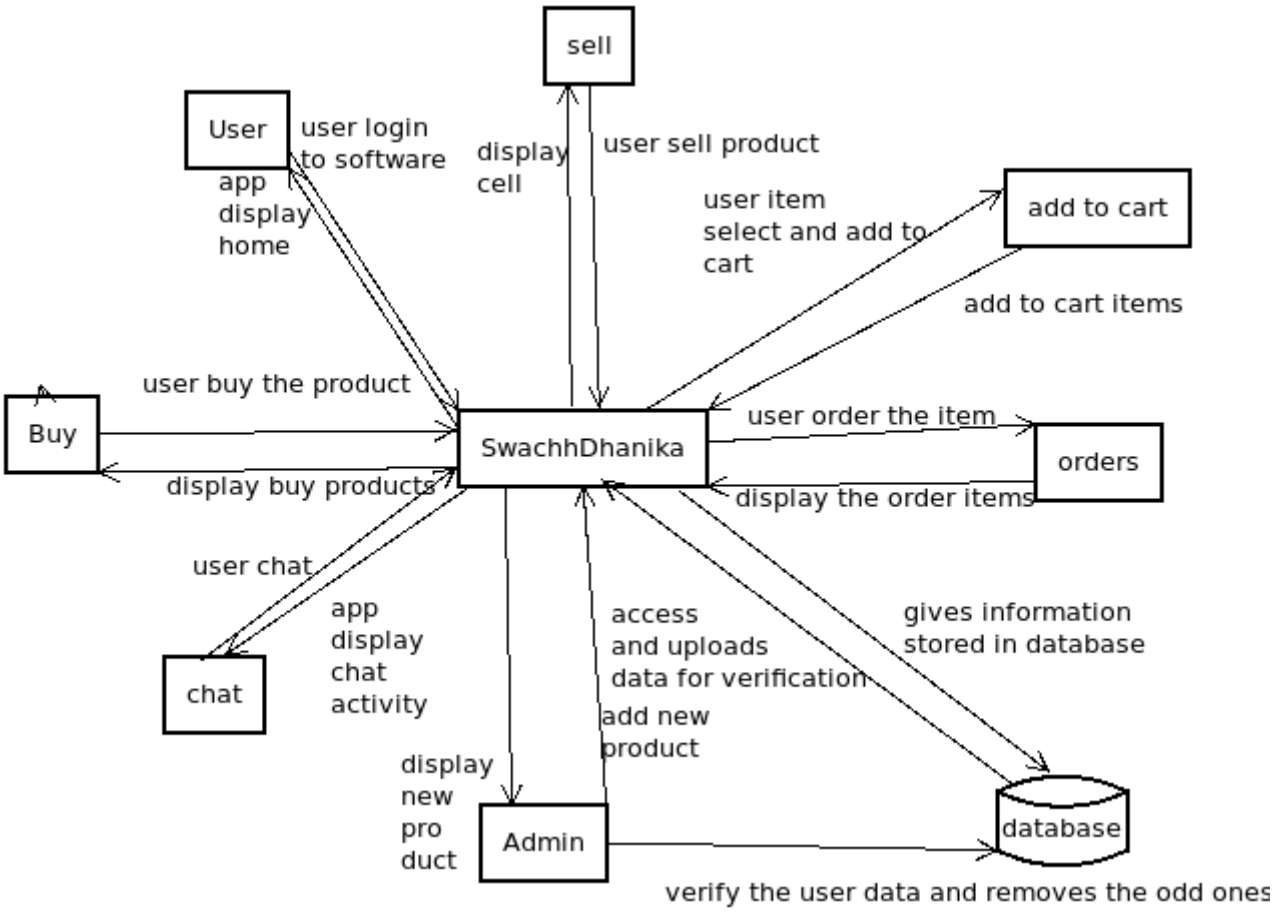
Operating System	:	SmartPhone Software
Development Kit	:	Android Studio 3.3 or higher versions
Database	:	Cloud Storage, Image Storing.
Debugger Tool	:	Android Device
Authentication	:	Firebase Authentication
Technologies	:	Java, Firebase Commands, Android Studio, JSON, API.

Hardware Requirements :

Development	:	System with minimum 8gb ram
Server	:	Firebase Cloud Services
Testing	:	Emulator or Android Mobile

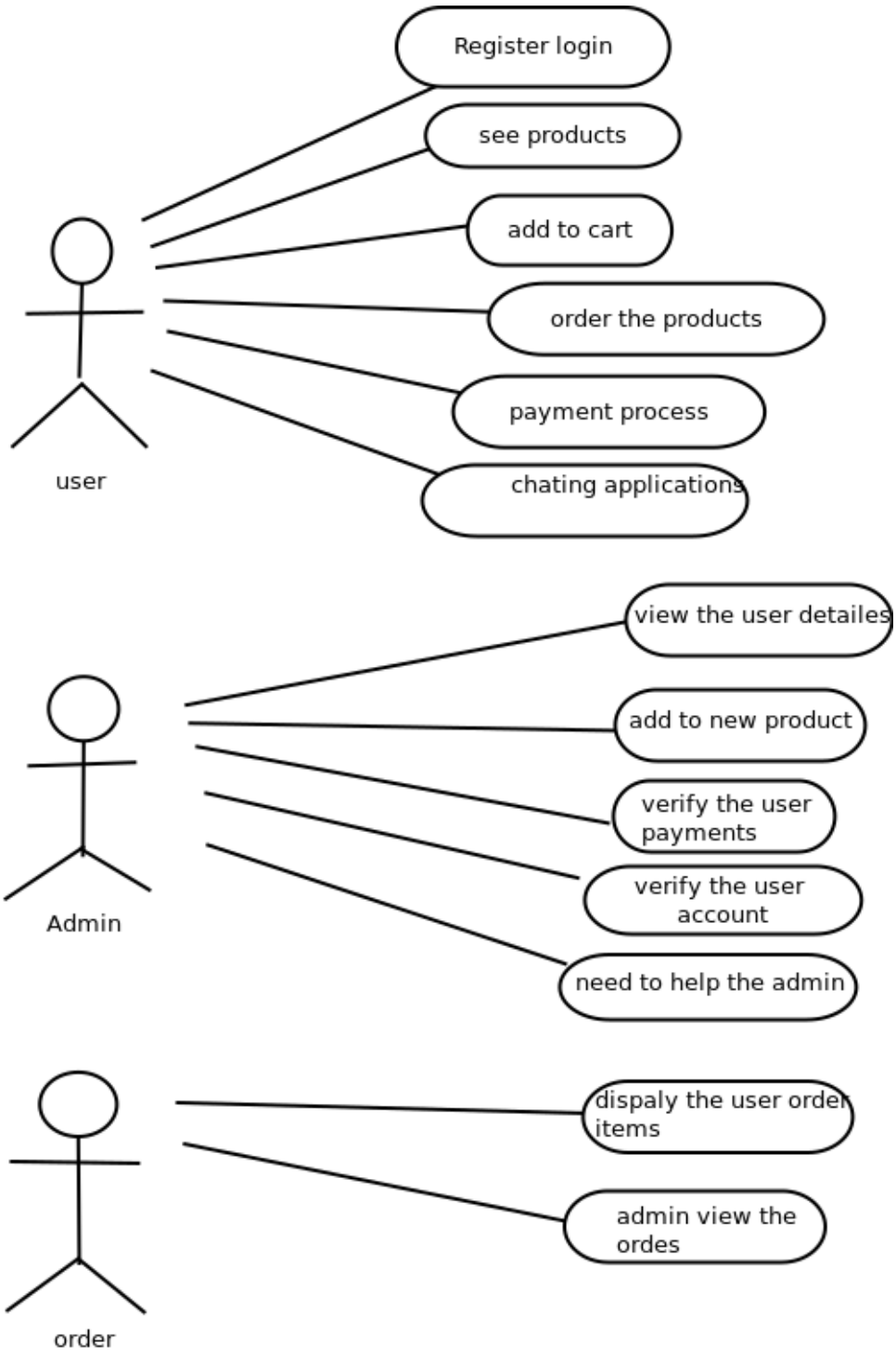
Context Diagram :

SwachhDhanika app is used to It is overall usefull for formers and custmers

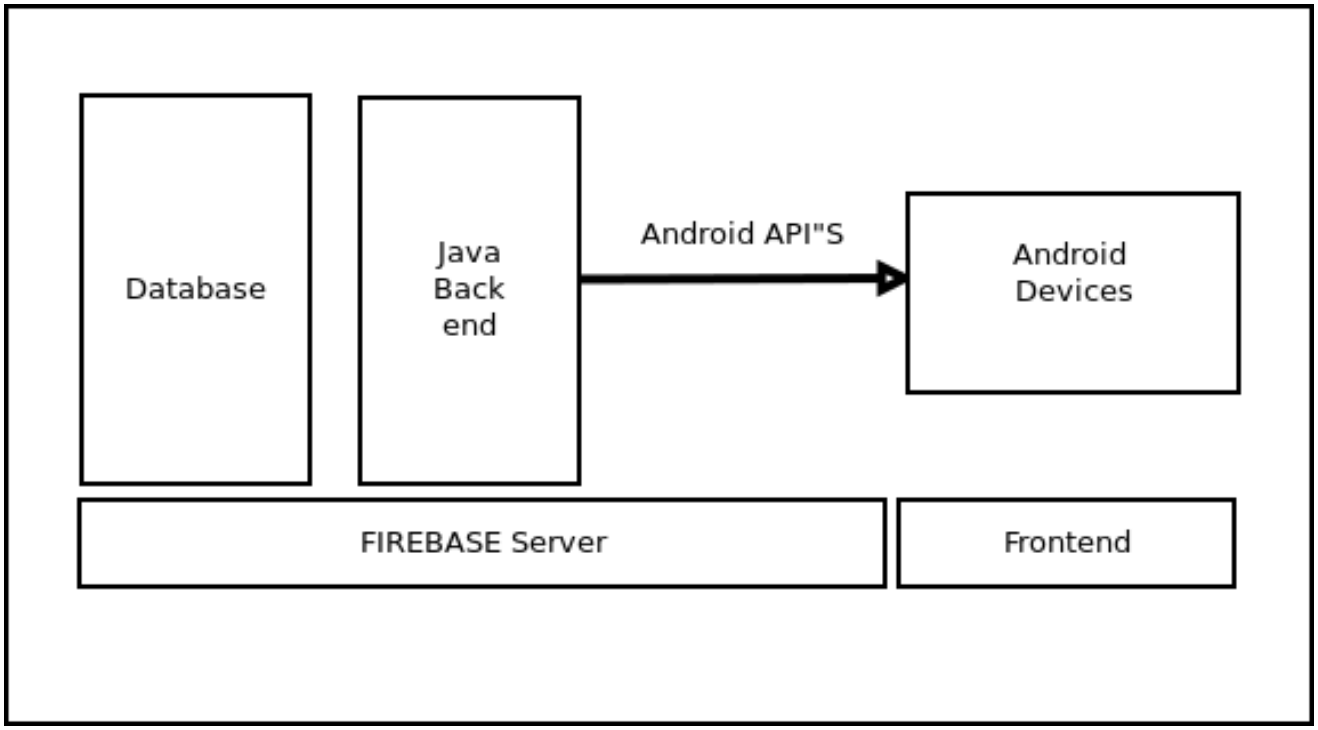


Class Diagram :

System



Architecture :



Contents :

API's :

API is the acronym for Application Programming Interface, which is a software intermediary that allows two applications to talk to each other. Each time you use an app like Facebook, send an instant message, or check the weather on your phone, you're using an API.

Application programming interface (API) specifies how some software components should interact with each other. In practice in most of the cases an API is a library that usually includes specification for routines, data structures, object classes, and variables. An API specification can take many forms, including an International Standard such as POSIX, vendor documentation such as the Microsoft Windows API, the libraries of a programming language, e.g., Standard Template Library in C++ or Java API.

JSON :

JSON, or JavaScript Object Notation, is a minimal, readable format for structuring data. It is used primarily to transmit data between a server and web application, as an alternative to XML. Squarespace uses JSON to store and organize site content created with the CMS.

The two primary parts that make up JSON are keys and values. Together they make a key/value pair.

- **Key -** A key is always a string enclosed in quotation marks.
- **Value -** A value can be a string, number, boolean expression, array, or object.
- **Key/Value Pair -** A key value pair follows a specific syntax, with the key followed by a colon followed by the value. Key/value pairs are comma separate

Types of Values

- **Array:** An associative array of values.
- **Boolean:**True or false.
- **Number:** An integer.
- **Object:** An associative array of key/value pairs.
- **String:** Several plain text characters which usually form a word.

Arrays

Almost every blog has categories and tags. In this example we've added a categories key, but the value might look unfamiliar. Since each post in a blog can have more than one category, an array of multiple strings is returned.

Objects

An object is indicated by curly brackets. Everything inside of the curly brackets is part of the object. We already learned a value can be an object. So that means "foo" and the corresponding object are a key/value pair.

JAVA Programming :

Java is a popular general-purpose programming language and computing platform. It is fast, reliable, and secure. According to Oracle, the company that owns Java, Java runs on 3 billion devices worldwide.

Considering the number of Java developers, devices running Java, and companies adapting it, it's safe to say that Java will be around for many years to come.

Features of Java Programming Language :

Java is platform independent :

Java was built with the philosophy of "write once, run anywhere" (WORA).

The Java code (pure Java code and libraries) you write on one platform (operating system) will run on other platforms with no modification.

To run Java, an abstract machine called Java Virtual Machine (JVM) is used. The JVM executes the Java bytecode. Then, the CPU executes the JVM. Since all JVMs works exactly the same, the same code works on other operating systems as well, making Java platform-independent.

1. ## An object-oriented Language

   There are different styles of programming. Object-oriented approach is one of the popular programming styles. In object-oriented programming, a complex problem is divided into smaller sets by creating objects. This makes your code reusable, has design benefits, and makes code easier to maintain.

   Many programming languages including Java, Python, and C++ has object-oriented features. If you are serious about programming, you should definitely learn object-oriented style of programming.

2. ## Java is fast

   The earlier versions of Java were criticized for being slow. However, things are completely different now. The new JVMs are significantly faster. And, the CPU that executes JVM are also getting more and more powerful.

   Now, Java is one of the fastest programming languages. Well optimized Java code is nearly as fast as lower level languages like C/C++, and much faster than Python, PHP etc.

3. ## Java is secure

   The Java platform provides various features for security of Java applications. Some of the high-level features that Java handles are:

   - provides secure platform for developing and running applications
   - automatic memory management, reduces memory corruption and vulnerabilities
   - provides secure communication by protecting the integrity and privacy of data transmitted

4. ## Large Standard Library

   One of the reasons why Java is widely used is because of the availability of huge standard library. The Java environment has hundreds of classes and methods under different packages to help software developers like us. For example,

`java.lang` - for advanced features of strings, arrays etc.
`java.util` - for data structures, regular expressions, date and time functions etc.
`java.io` - for file i/o, exception handling etc.

Applications of Java :

Java technology is everywhere, powering 3 billion devices worldwide. It's more than likely that you have used Java one way or the other. Here are some of the applications of Java.

1. **Android apps -** Java programming language using Android SDK (Software Development Kit) is usually used for developing Android apps.

2. **Web apps -** Java is used to create Web applications through Servlets, Struts or JSPs. Some of the popular web applications written in Java are: Google.com, Facebook.com, eBay.com, LinkedIn.com etc.
   It's important to note that, these sites may not be entirely written in Java, and may use other programming languages along with Java.

3. **Software Development -** Softwares like Eclipse, OpenOffice, Vuze, MATLAB etc use Java.

4. **Big Data Processing -** You can use popular software framework like Hadoop (which itself is written in Java) to process Big Data. To use Hadoop, you need to understand Java programming.

5. **Trading System -** You can build trading applications having low latency using the Oracle Extreme Java Trading Platform.

6. **Embedded Devices -** While C/C++ programming languages are still popular choices for working with embedded systems, Oracle's Java Embedded technologies provide platform and runtime for billions of embedded devices like: televisions, SIM card, Blu-ray Disc players etc.

Activites :

The app is mainly consists of One Activity that is

1. Spalsh screen Acitivty

Spalshscreenactivity :

The Spalshscreen contains a mainactivity

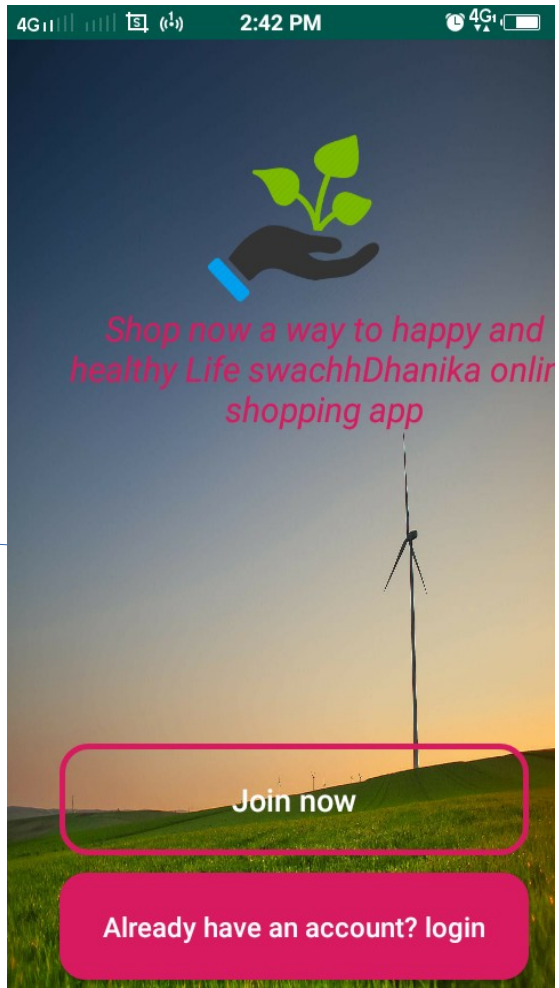
ScreenShot :

spashscreen

Mainactivity :

The mainactivity contains two activities

1.Login activity
2.Register activity

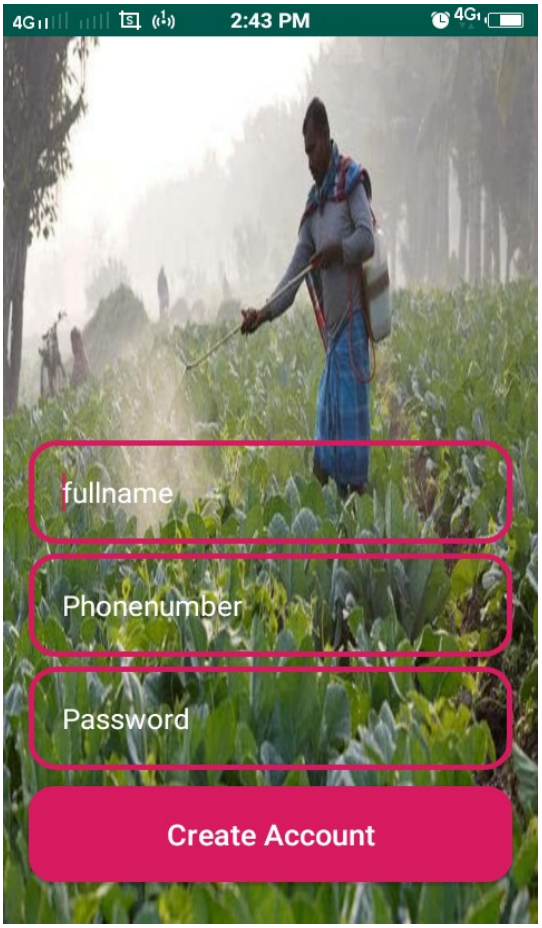


mainactivity

Registeractivity:

this activity is used for user register the app

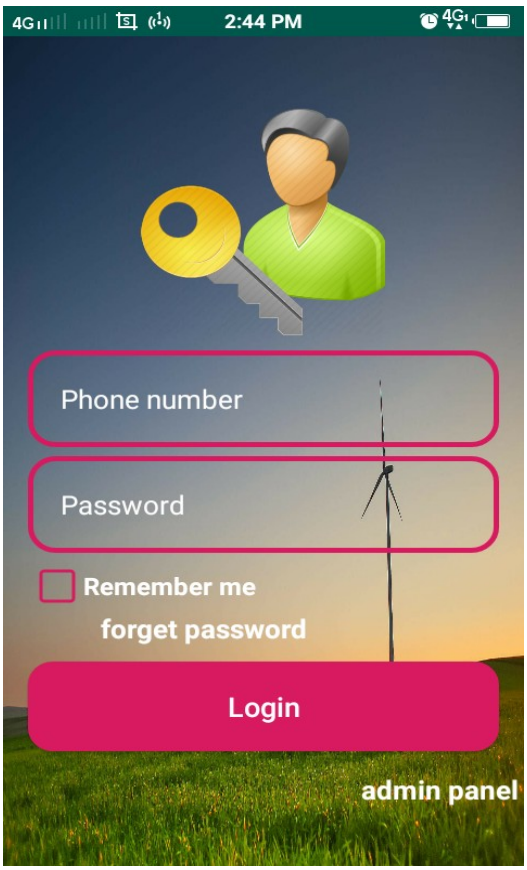
ScreenShots :

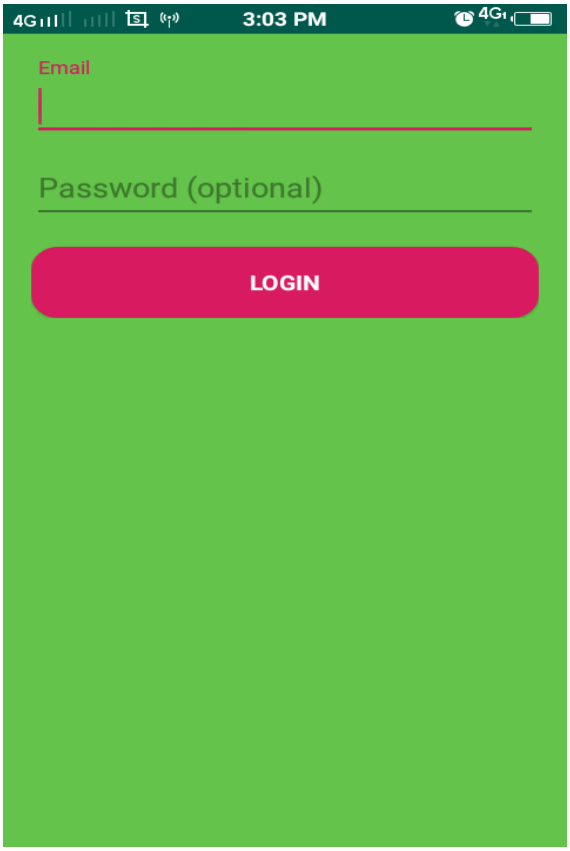


Login activity and admin login activity:

The Swachh Dhanika app this is used for user Login activity
the user account is verified and goto home activity
admin also login and add new products

Screenshots :

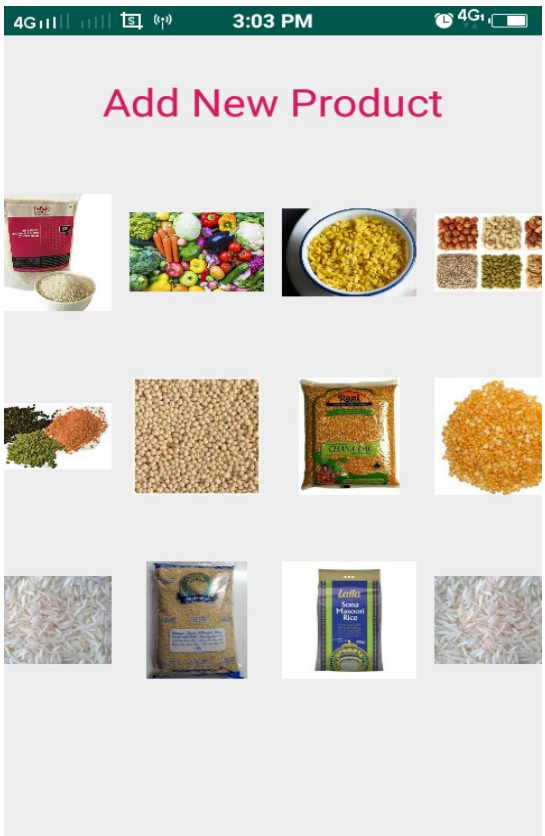


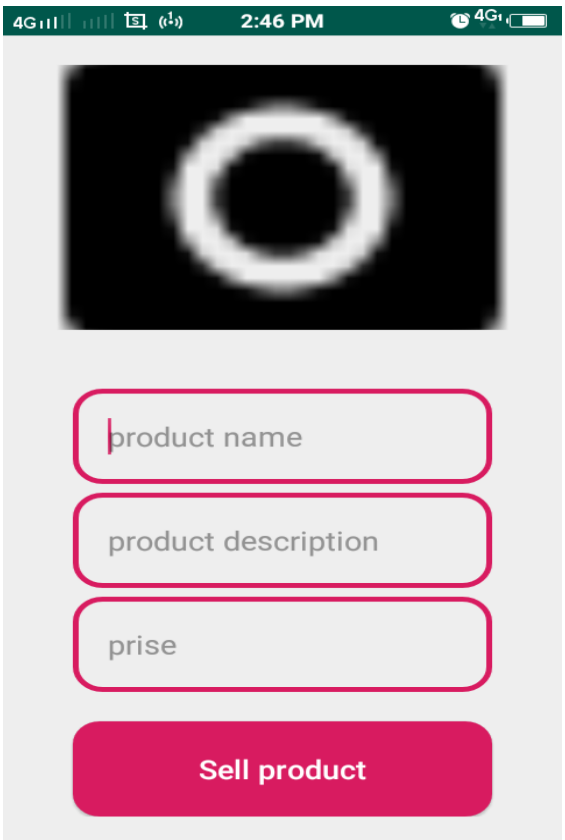


user login activity

admin loginactivity

<u>Admincatageriactivity and Admin product add activity:</u>



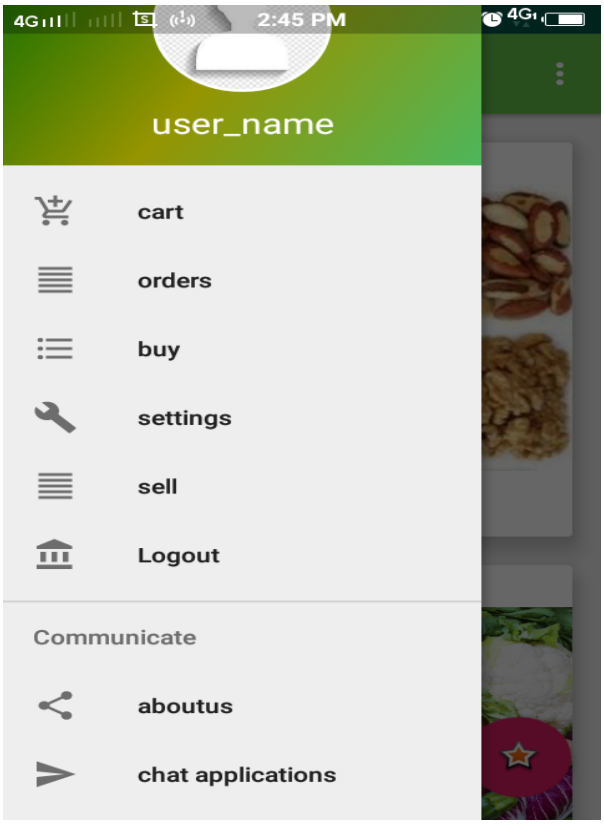


admin add new product it display the user in home activity

Homeactivity :

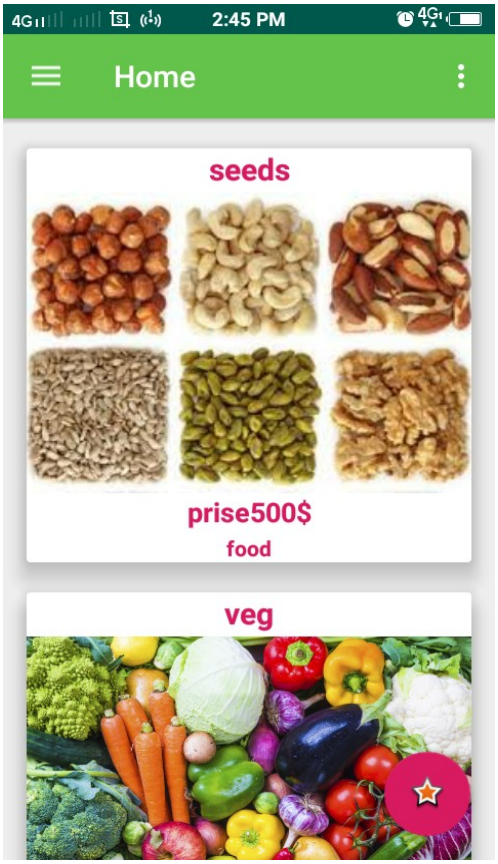
It is very important activity user after login is sucessfull user move to home activity in this home activity Using side navigation drawer

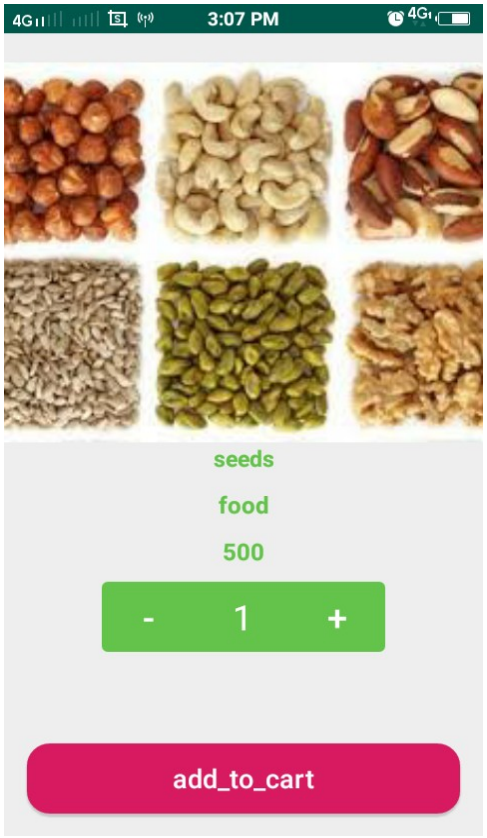
Screenshots :



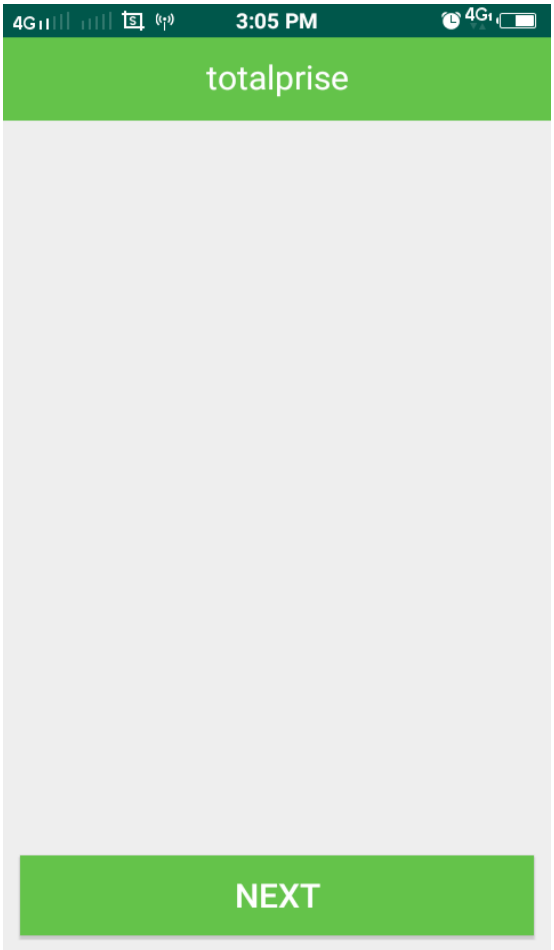
displayproductdetailesactivity:

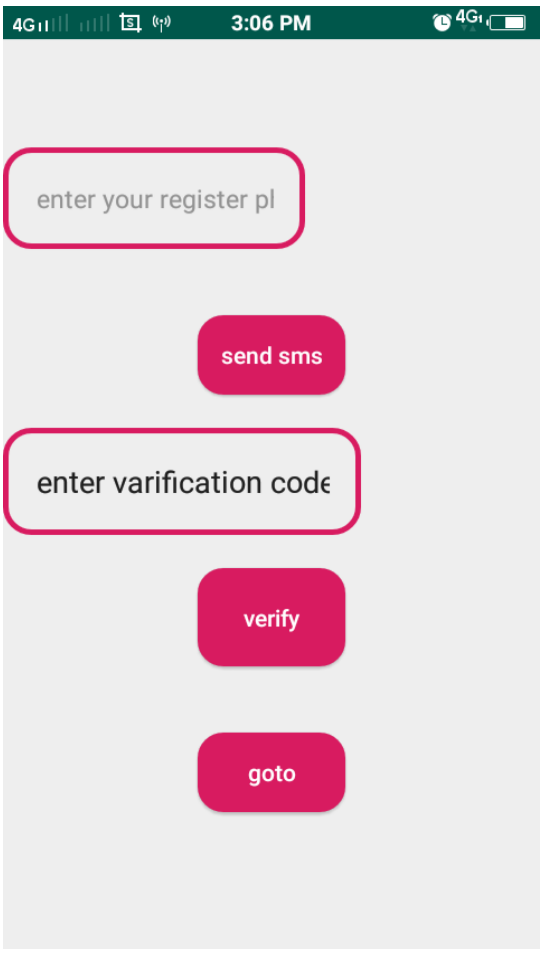
display the products (items)in app and admin add new item





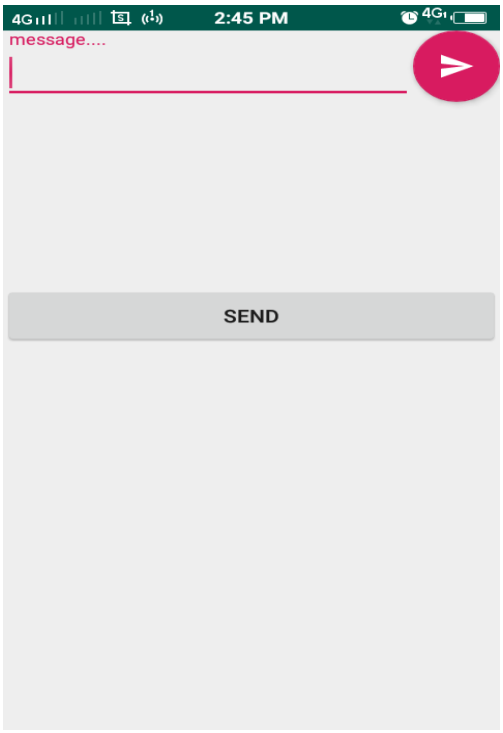
user select theproducts and add to cart activity and buy the product goto otpactivvity and verify the account you buy the product





Chatactivity and setting activity :

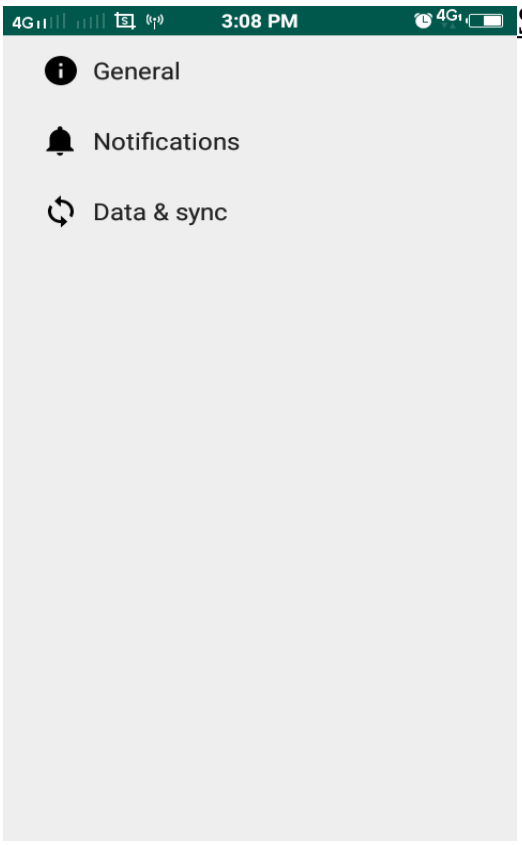
user chat to the admin for any doutes.



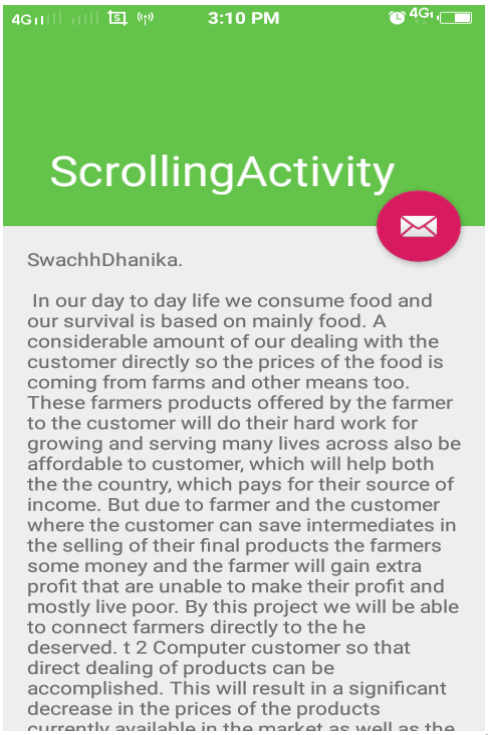
Settings and about us activity :

aboutus activity is used for detailes of the app and settings activity is used for app settings sending notifications and messages and all

Screenshots :



aboutusactivity:



UniTesting :

In Unit Testing each independent unit is tested separately, by isolating it from the remainder of the code to ensure paprts of the code are working properly, Unit is the smallest testable part of the code, as in here the classes are treated as base unit. Since the base application in was threading concept , it is possible to leverage the j Unit for testing the individual components.

Unit Testing (OD Application)			
	Test Modules	Test Case	Result
I.	Activites	Check all the clickables & textviews	Pass
II.	API Calls	Check whether API is called or not	Pass
III	JSON test	Check the JSON data to represent	Pass
IV	GET method	Check get method is working or not	Pass
V	Firebase Connection	Checks whether the firebase connection is working or not	Pass
VI	Upload Image	Check quality of image	Pass
VII	Tabs	MainActivity tabs are in correct order	Pass
VIII	Order Status	Check order status	Pass
IX	Processing Bar	Checks whether the processing is correcting properly or not	Pass
X	Payment	Check payment is perfectly assigned or not	Pass
XI	Phone Number	Check the Phonenumber of the user	Pass
XII	PC Number	Check the pc Number of the user	Pass

13	File Manager	Checks permission to save the Application Form to the internal storage	Pass
14	Authentication	OTP verification for the applying of the OD Form	Pass
15	Navigation Drawer	Checks whether the navigation drawer is working properly or not	Pass

Pre-Existence :

The swachhDhanika Software realtime database based and it contains the a login method , a full detail Fields of the Applicant , to fill the form and the payment gateway after that the application is successfully registered . The Admin will add the new products check all the order details that the applicant entered and then the verification is carriedout after that the ordered is processed forward.

Existing :

we have done a Mobile Application . Now a days everyone using the smart phones , it makes easier for the applicants to apply there certificates from there mobile itself. We introduced more secuirty purposes in this , like OTP verification , Image uploading . It is based on cloud Architecture using Firebase . Firebase is an Google Server . Introcuded in 2012 April 12 . It contains some more extra features then the Pre Existence Software . The main features are it is otp verification, uploading image of the applicant . While in the process of the applying the SwachhDhanika , the back button will not work , if the application is closed the content entered is removed then the application is not considered . If the product is buy sucessfully and and user product sell also
and see the status also.

Conclusion :

The project in which we took the idea that will make every farmer reach the homes in there nearby locality or cities by the medium of this android app In this we have used some Firebase database and used a reference algorithm for displaying the images on the left side termed as related product in the purchase
product. We have implemented the chat option, firebase login, making system more user friendly. By the help of this app people will be able to get fresh food to eat and will be able to explore parts of their nearby villages for picking up theirpurchases and exploring the place establishing relation witharmers and gaining profit by saving their money , adding profit directly to the farmer helping farmers too.

Reference :

Youtube, Google, Github, Tutorial Points .
A Modern Farming Techniques using Android Application by Santosh G.Karkhile , Sudarshan G.Ghuge -IJIRSET 2015.