# GROCERY SHOPPING MOBILE APP

## AN INDUSTRIAL INTERNSHIP REPORT

*Submitted in partial fulfilment for the award of the degree of*

**MTech *in* Software Engineering**

*By*

**CHILUMUKURI SREEJA (17MIS0134)**


VIT®
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

**School of Information Technology and Engineering**

**MAY 2021**

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## School of Information Technology and Engineering

**DECLARATION BY THE CANDIDATE**

I here by declare that the Industrial Internship report entitled "GROCERY SHOPPING MOBILE APP" submitted by me to VIT, Vellore, in partial fulfillmentof the requirement for the award of the degree of **MTech (Software Engineering)** is a record of bonafide **Industrial Internship - SWE3099** carried out by me under the guidance of K.Aditya, Digiverse Technologies . I further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full, for the award of any other degree in thisinstitute or any other institute or university.

C Sreeja

**Place**: Vellore

**Date**: 12-05-2021 **Signature of the Candidate**


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## School of Information Technology and EngineeringDepartment of Software and Systems Engineering

## BONAFIDE CERTIFICATE

This is to certify that the Industrial Internship report entitled **"GROCERY SHOPPING MOBILE APP"** by **CHILUMUKURI SREEJA (17MIS0134)** to VIT, Vellore, in partial fulfillment of the requirement for the award of the degree of **MTech (Software Engineering)** is a record of bonafide work carried out by him /her under my guidance. The project fulfills the requirements as per the regulations of this Institute and in my opinion meets the necessary standards for submission. The contents of this report have not been submitted and will not be submitted either in part or in full, for the award of any other degree or diploma in this institute or anyother institute or university.

**R.KirubaThangam**

**Signature of Internal Guide**

**Examiner(s) Signature**

**1.**

**2.**

DIGIVERSE
TECHNOLOGIES

# CERTIFICATE OF COMPLETION

*Is here by granted to*

**CHILUMUKURI SREEJA**

Regd No: 17MIS0134

This to certify that **Ms. Chilumukuri Sreeja** of **VELLORE INSTITUTE OF TECHNOLOGY.** has successfully completed her internship at **DIGIVERSE TECHNOLOGIES PVT LTD.** From **30/04/2020 to 30/05/2020.**

She has worked on the project titled "GROCERY SHOPPING MOBILE APP"

We found her extremely inquisitive and hardworking. She was very much interested to learn the functions of new technologies. During the internship she demonstrated good skills with self– motivative attitude towards learning.

Her Association with the team was very fruitful. We wish her all the best in the future Endeavour's.

With best Regards.

**For Digiverse Technologies Pvt.Ltd.,**

K. Aditya

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I also thank all the faculty members of VIT, Vellore for giving me the courage and strength I needed to complete my goals. This acknowledgement would be incomplete without expressing my whole hearted thanks to my family and friends who motivated me during the course of the work.

Place: CHITTOOR Chilumukuri Sreeja

Date: May, 2021 **Name of the student**

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# ABSTRACT

Smartphones have penetrated rapidly and mobile shopping provides promising market opportunities for retailers. However, little is known about mobile shopping patterns and inferring these patterns from online shopping may provide misleading insights. We combine mobile log data and a mobile panel survey, and examine two stages in mobile shopping: the possession of shopping applications (hereafter, apps) and the purchase via shopping apps. Our exploratory investigation of mobile data and its empirical analyses provide three substantive findings. First, online experience and mobile experience both positively relate to the possession of shopping apps. Second, browsing behavior for non-shopping apps helps understand the possession of shopping apps as it reflects user preferences for acquiring more apps. Third, purchasing decisions are explained by digital experience (i.e., online experience and mobile experience) and browsing information from shopping apps, with other factors being of little predictive value.

E Home provision is an application for the people to shop through online. And this app consists of two modules i.e., user and administrator. The initial state of this application, we added only three items. Adminstrator duty is to add and update the grocery items, quantity, price according to the market rate. We added feature of coupons in the customer module so that the customer can easily get discounts at the time of selected items. In this application there is also possibility of selecting different items in shops at a time by generating single bill.

The demand for online grocery retail is rising at a steady 25-30 per cent in Indian metros, according to (KPMG, 2020) and is powered by urban residents who are in a rush and prefer comfort to kiranas. The global food and grocery ecommerce market is expected to hit a mouth-watering $6.5 trillion by 2023 according to a study by Euromonitor. The current COVID-19 pandemic has heightened unprecedented uncertainty and complex challenges over retail industry. Remarkably in some cases, COVID-19 has accelerated demand of online grocery businesses. Online grocery shopping has experienced solid growth and this medium is expected to continue rising exponentially in the coming years.

# Chapter 1
# INTRODUCTION

## 1.1 INTRODUCTION

Technology has changed the world we live in. Everyone today is busy checking emails, posting picture on social media, texting friends, searching something on Google, fiddling with their favourite apps, in short, the digital world has taken over our day to day life in a massive way. Thanks to technology, customers today are demanding quicker, easier and more convenient ways for absolutely everything!

In order to meet these pressing needs, we have designed and developed a comprehensive solution for grocery businesses who wishes to go online with their website and apps. The online solution includes a whole list of features designed to provide both quality back end and front end experiences. Create your online Grocery store with Oho shop and start earning in a smart way. With a full-fledged and easy to use back office, you can easily manage the look and feel of your app and website as well as other features of admin app and customers' app. It helps you to maintain brand image and provide less dependency on techies and developers.

## 1.2 PROBLEM STATEMENT

These days, we can find grocery stores everywhere but the thing is that different stores will sell items at different prices and this will be a big task for a customer to buy things at low cost. It is time consuming because he need to check in which store he can get an item at low price. This application solve this problem by allowing customer to choose the location he want to shop and allow customer to add the items he needed and gives customer a report about the store close to him where he can get those items at low cost.

## 1.3 EXISTING SYSTEM

In the current system scenario, only one store is present in the whole application. The user must choose and buy their required items from that store only. The existing system provides their services on specific time so the users should buy at that particular time only.

### 1.3.1 DISADVANTAGES

The limitations in the existing system are: we can select only the grocery item from single grocery store.amd Sometimes it also have chances of delay in delivery of items because lot of customers using the same app. and We can't assure the quality of the product before delivery of items.

## 1.4 PROPOSED SYSTEM

In the proposed system, the customer or the user can select different grocery items in the store. The proposed system will acts as interface between the customer and the user. In the user module, where the grocery goods are listed with its imagines and the price from which the user can choose their product. In the shopkeeper module, the shopkeeper is responsible for the updating of the product prices.

### 1.4.1 ADVANTAGES

The limitations that occurred in the present system can be overcome in the proposed system , they are We have added the feature of selecting the grocery items from grocery shops at a time. we have a benefit of selecting the item in the then it will show the suggestions of cheap and best product from different grocery shops.

We also have a benefit of getting individual offeres from grocery stores.Although you select the different items from the different stores,it will generate a single bill for all the selected items so from that it will reduce the physical effort and saves the times of the customer or user.

# CHAPTER 2

# TECHNOLOGIES LEARNT

## 2.1 Technologies Learnt

The various technologies that I learnt are Android Inc, the tools like Blue Stacks in which our project was implemented.

### 2.1.1 ANDROID ONE

Android, Inc., was founded in Palo Alto, California in October 2003 by Andy Rubin (co-founder of Danger), Rich Miner (co-founder of Wildfire Communications, Inc.),Nick Sears (once VP at T-Mobile) and Chris White (headed design and interface development at WebTV) to develop "smarter mobile devices that are more aware of its owner's location and preferences". The early intentions of the company were to develop an advanced operating system for digital cameras. Though, when it was realized that the market for the devices was not large enough, the company diverted its efforts toward producing a smart phone operating system that would rival Symbian and Microsoft Windows Mobile. Despite the past accomplishments of the founders and early employees, Android Inc. operated secretly, revealing only that it was working on software for mobile phones. That same year, Rubin ran out of money. Steve Perlman, a close friend of Rubin, brought him $10,000 in cash in an envelope and refused a stake in the company.

In July 2005, Google acquired Android Inc. for at least $50 million. Its key employees, including Rubin, Miner and White, stayed at the company after the acquisition. Not much was known about Android Inc. at the time, but many assumed that Google was planning to enter the mobile phone market with this move. At Google, the team led by Rubin developed a mobile device platform powered by the Linux kernel. Google marketed the platform to handset makers and carriers on the promise of providing a flexible, upgradeable system.

Google had lined up a series of hardware component and software partners and signaled to carriers that it was open to various degrees of cooperation on their part.

Speculation about Google's intention to enter the mobile communications market continued to build through December 2006.An earlier prototype codenamed "Sooner" had a

closer resemblance to a BlackBerry phone, with no touch screen, and a physical, QWERTY keyboard, but was later re-engineered to support a touch screen, to compete with other announced devices such as the 2006 LG Prada and 2007 Apple iPhone . In September 2007, InformationWeek covered an survey study reporting that Google had filed several patent applications in the area of mobile telephony.

On November 5, 2007, the Open Handset Alliance, a consortium of technology companies including Google, device manufacturers such as HTC, Sony and Samsung, wireless carriers such as Sprint Nextel and T-Mobile, and chipset makers such as Qualcomm and Texas Instruments, unveiled itself, with a goal to develop open standards for mobile devices. That day, Android was unveiled as its first product, a mobile device platform built on the Linux kernel. The first commercially available smart phone running Android was the HTC Dream, released on October 22, 2008.

Since 2008, Android has seen numerous updates which have incrementally improved the operating system, adding new features and fixing bugs in previous releases. Each major release is named in alphabetical order after a dessert or sugary treat; for example, version 1.5 "Cupcake" was followed by 1.6 "Donut". In 2010, Google launched its Nexus series of devices – a line of smart phones and tablets running the Android operating system, and built by manufacturing partners. HTC collaborated with Google to release the first Nexus smart phone, the Nexus One. Google has since updated the series with newer devices, such as the Nexus 5 phone (made by LG) and the Nexus 7 tablet (made by Asus). Google releases the Nexus phones and tablets to act as their flagship Android devices, demonstrating Android's latest software and hardware features. From 2013 until 2015, Google offered several Google Play Edition devices over Google Play.

While not carrying the Google Nexus branding, these were Google-customized Android phones and tablets that also ran the latest version of Android, free from manufacturer or carrier modifications.

From 2010 to 2013, Hugo Barra served as product spokesperson, representing Android at press conferences and Google I/O, Google’s annual developer-focused conference. Barra's product involvement included the entire Android ecosystem of software and hardware, including Honeycomb, Ice Cream Sandwich, Jelly Bean and KitKat operating system launches, the Nexus

4 and Nexus 5 smart phones, the Nexus 7 and Nexus 10 tablets and other related products such as Google Now and Google Voice Search, Google's speech recognition product comparable to Apple's Siri .In 2013, Barra left the Android team for Chinese smart phone maker Xiaomi. The same year, Larry Page announced in a blog post that Andy Rubin had moved from the Android division to take on new projects at Google. He was replaced by Sundar Pichai who became the new head of Android and Chrome OS and later, by Hiroshi Lockheimer when Pichai became CEO of Google.

In 2014, Google launched Android One, a line of smart phones mainly targeting customers in the developing world. In May 2015, Google announced Project Brillo as a cut-down version of Android that uses its lower levels (excluding the user interface), intended for the "Internet of Things" (IoT) embedded systems.

In October 2015, researchers at the University of Cambridge concluded that almost 90% of Android phones in use had known but un patched security vulnerabilities due to lack of updates and support.Ron Amadeo of Ars Technica wrote in August that "Android was originally designed, above all else, to be widely adopted. Google was starting from scratch with zero percent market share, so it was happy to give up control and give everyone a seat at the table in exchange for adoption. Now, though, Android has around 75-80 percent of the worldwide smart phone market—making it not just the world's most popular mobile operating system but arguably the most popular operating system, period. As such, security has become a big issue. Android still uses a software update chain-of-command designed back when the Android ecosystem had zero devices to update, and it just doesn't work".

### 2.1.2 BLUE STACKS

BlueStacks is an American technology company known for the BlueStacks App Player and other cloud-based cross-platform products. The BlueStacks App Player is designed to enable Android applications to run on PCs running Microsoft Windows and Apple's mac OS. The company was founded in 2009 by Jay Vaishnav, Suman Saraf, and Rosen Sharma, former CTO at McAfee and a board member of Cloud.com.

# CHAPTER 3

# SYSTEM DESIGN

## 3.1 MODULE DESCRIPTION

Here there are 2 modules namely User Module and Shopkeeper Module

### 3.1.1 User Module

The user must have the personal account and using his login details customer first check the products availability and orders the required products. He can check on various products availability and choose the products required .In a single processing, he can select different items at stores.

### 3.1.2 Shopkeeper module

In this shop keeper module the shopkeeper mainly receives the customers requirement and have to process on customers request. He basically works on the available products and daily checks the stock availability on time and informs the administrative in charge about the products availability. He delivers the stock ordered by the customer with proper packing and in time delivery. There is module called admin module in which whole application is controlled. The complaints and suggestions dropped by customers must be checked and required steps are to be implemented. Supervision of employee and the requirement of business must be checked and required steps to be taken.

## 3.2 SYSTEM SPECIFICATIONS

### 3.2.1 HARDWARE SYSTEM REQUIREMENTS

RAM - 8 GB

Hard Disk - 500 GB

Processor - i3 and above versions

### 3.2.2 SOFTWARE SYSTEM REQUIREMENTS

Operating System : Windows Family

Front End : Android

## 3.3 SYSTEM DESIGN

### 3.3.1 SDLC METHODOLOGIES

This document play a vital role in the development of life cycle (SDLC) as it describes the complete requirement of the system as shown in figure 1. It means for use by developers and will be the basic during testing phase. Any changes made to the requirements in the future will have to go through formal change approval process.

### 3.3.2 V-shape model

The V - model is SDLC model where execution of processes happens in a sequential manner in V-shape. It is also known as Verification and Validation model..V - Model is an extension of the waterfall model and is based on association of a testing phase for each corresponding development stage. This means that for every single phase in the development cycle there is a directly associated testing phase as shown in figure 1. This is a highly disciplined model and next phase starts only after completion of the previous phase.

### 3.3.3 V- Model design

Under V-Model, the corresponding testing phase of the development phase is planned in parallel. So there are Verification phases on one side of the .V. and Validation phases on the other side. Coding phase joins the two sides of the V-Model. The below fig 3.1 illustrates the different phases in V-Model of SDLC.

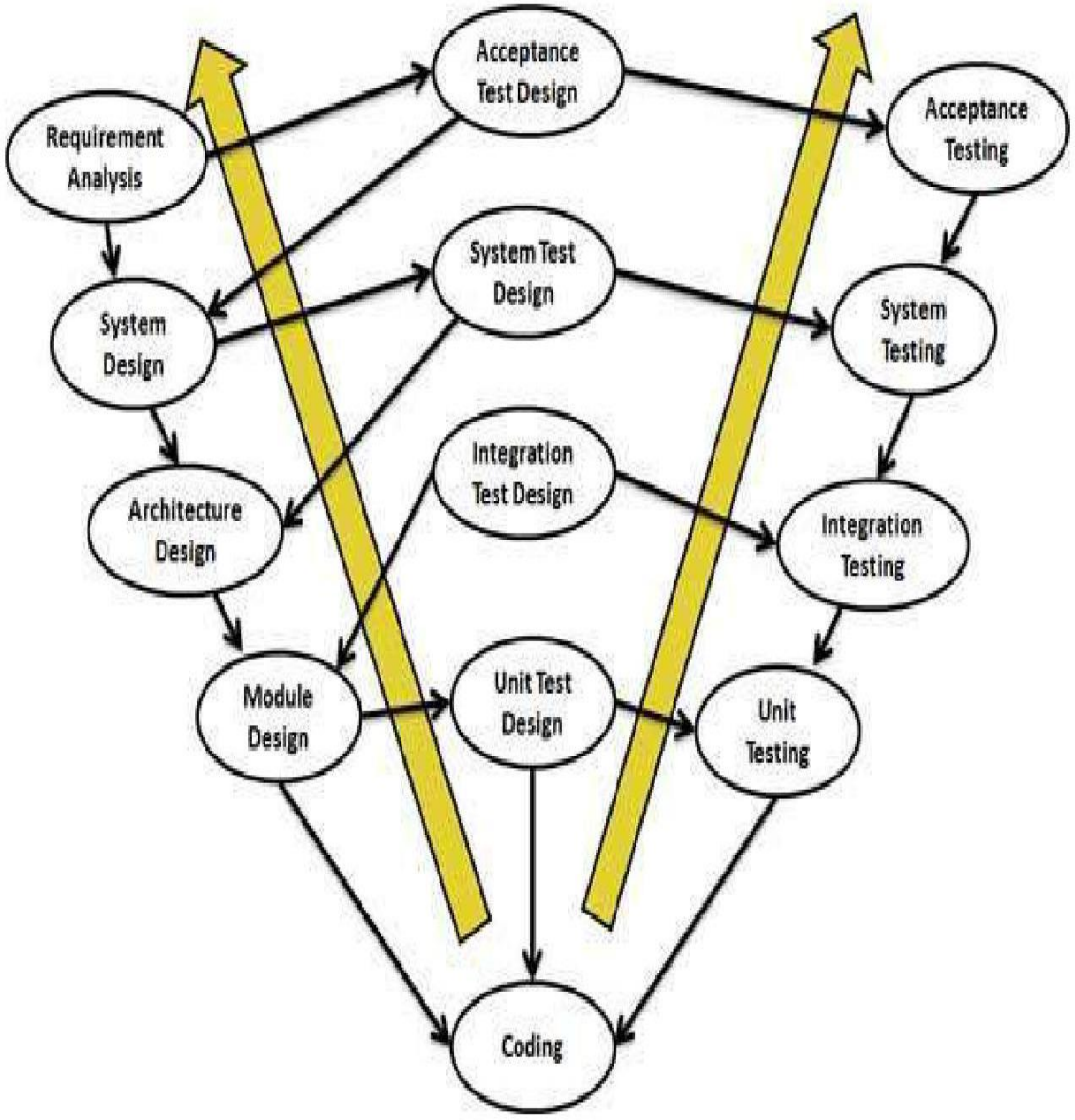


**Fig. 3.1 V-Model**

### 3.3.4 V- Model Application

V- Model application is almost same as waterfall model, as both the models are of sequential type. Requirements have to be very clear before the project starts, because it is usually expensive to go back and make changes. This model is used in the medical development field, as it is strictly disciplined domain. Following are the suitable scenarios to use V-Model

## 3.4 DETAILED DESIGN

### 3.4.1 USE CASE DIAGRAMS

A use case diagram is a graphical depiction of a user's possible interactions with a system. A use case diagram shows various use cases and different types of users the system has and will often be accompanied by other types of diagrams as well. The use cases are represented by either circles or ellipses. Here in the below fig. 3.2 we can see the interactions of user and admin with grocery shopping mobile app.

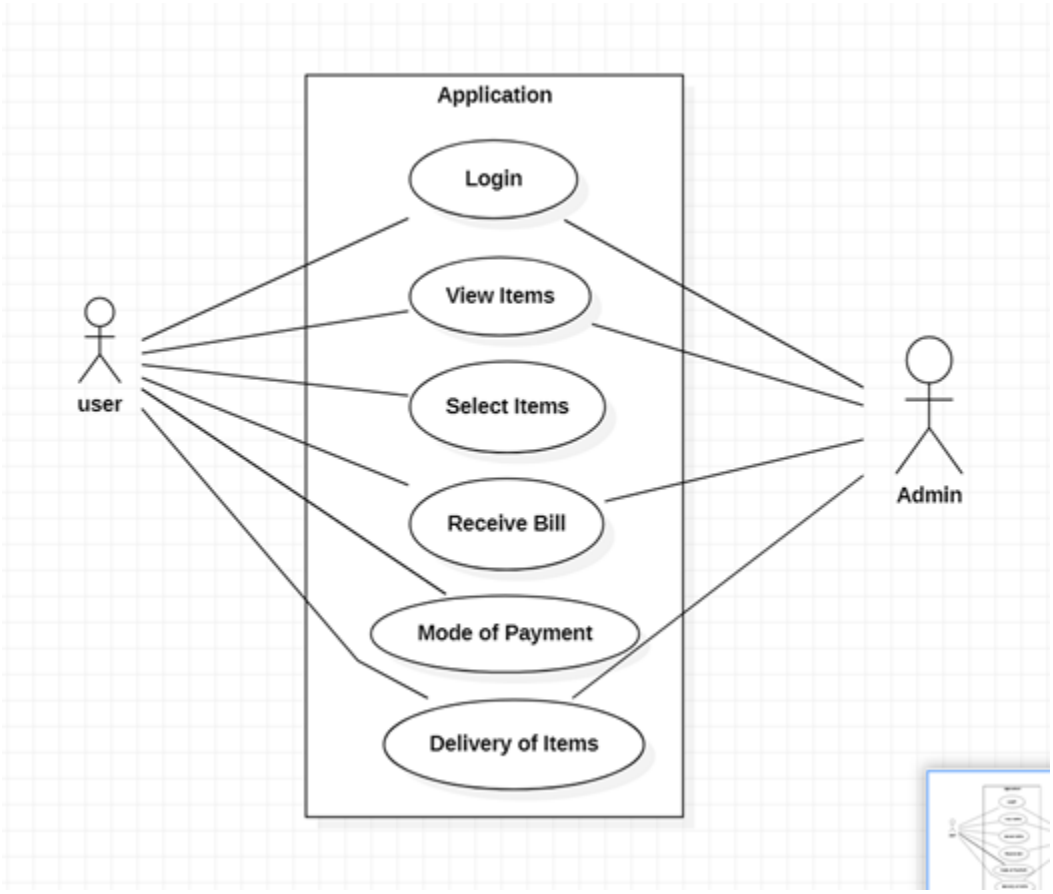


**Fig .3.2 Use Case Diagram for Grocery Shopping Management**

### 3.4.2 CLASS DIAGRAMS

The class diagram is the main building block of object-oriented modeling. It is used for general conceptual modeling of the structure of the application, and for detailed modeling, translating the models into programming code. Class diagrams can also be used for data modeling .Here in the fig.3.3,we can observe that objects are user , admin , database , shopkeeper and its corresponding attributes and functions.

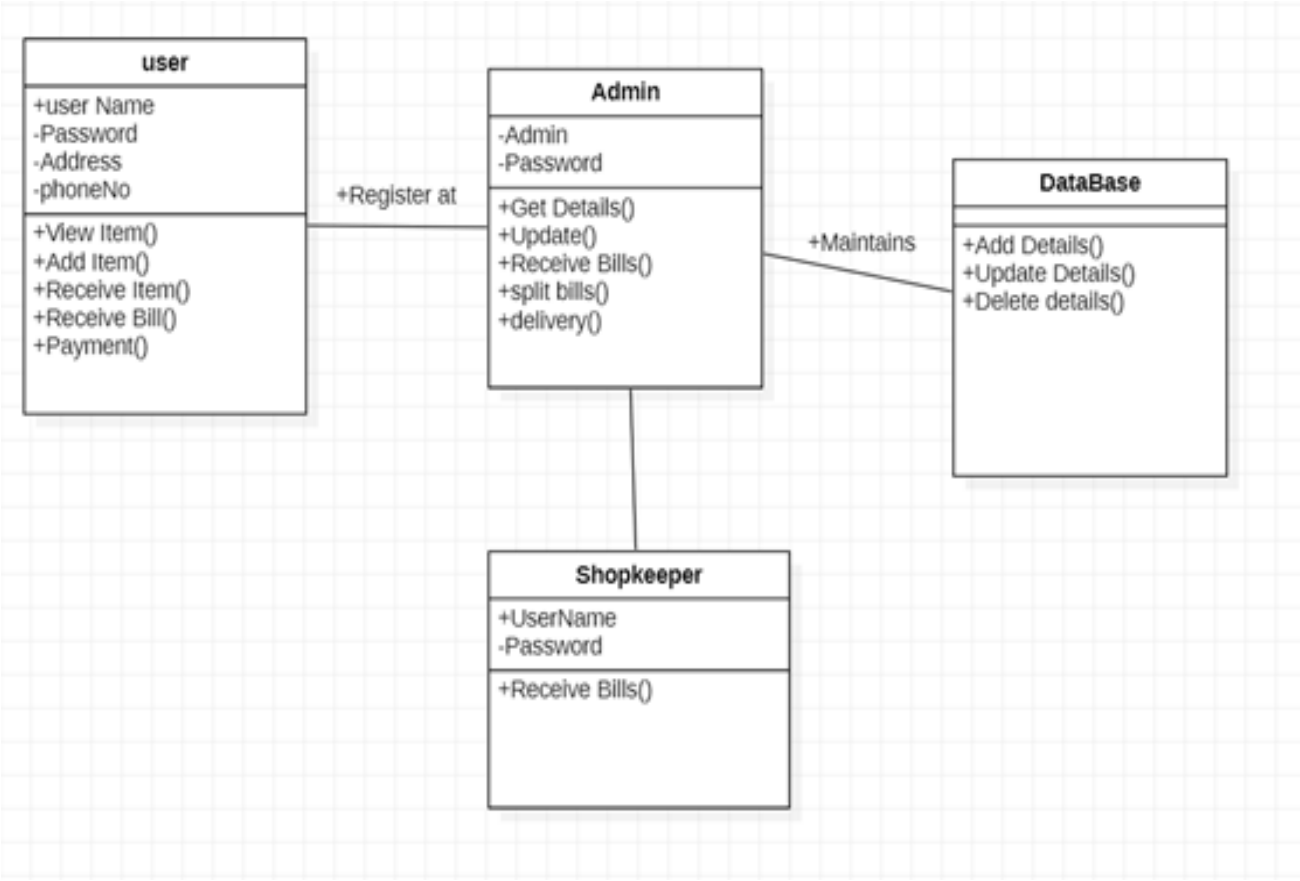


**Fig.3.3 Class Diagram for Grocery Shopping Management**

### 3.4.3 SEQUENCE DIAGRAM

A sequence diagram is a type of interaction diagram because it describes how—and in what order—a group of objects works together. These diagrams are used by software developers and business professionals to understand requirements for a new system or to document an existing process. Here in the below fig.3.4 we can see how user , admin , shopkeeper , Database interaction and reply with each other.

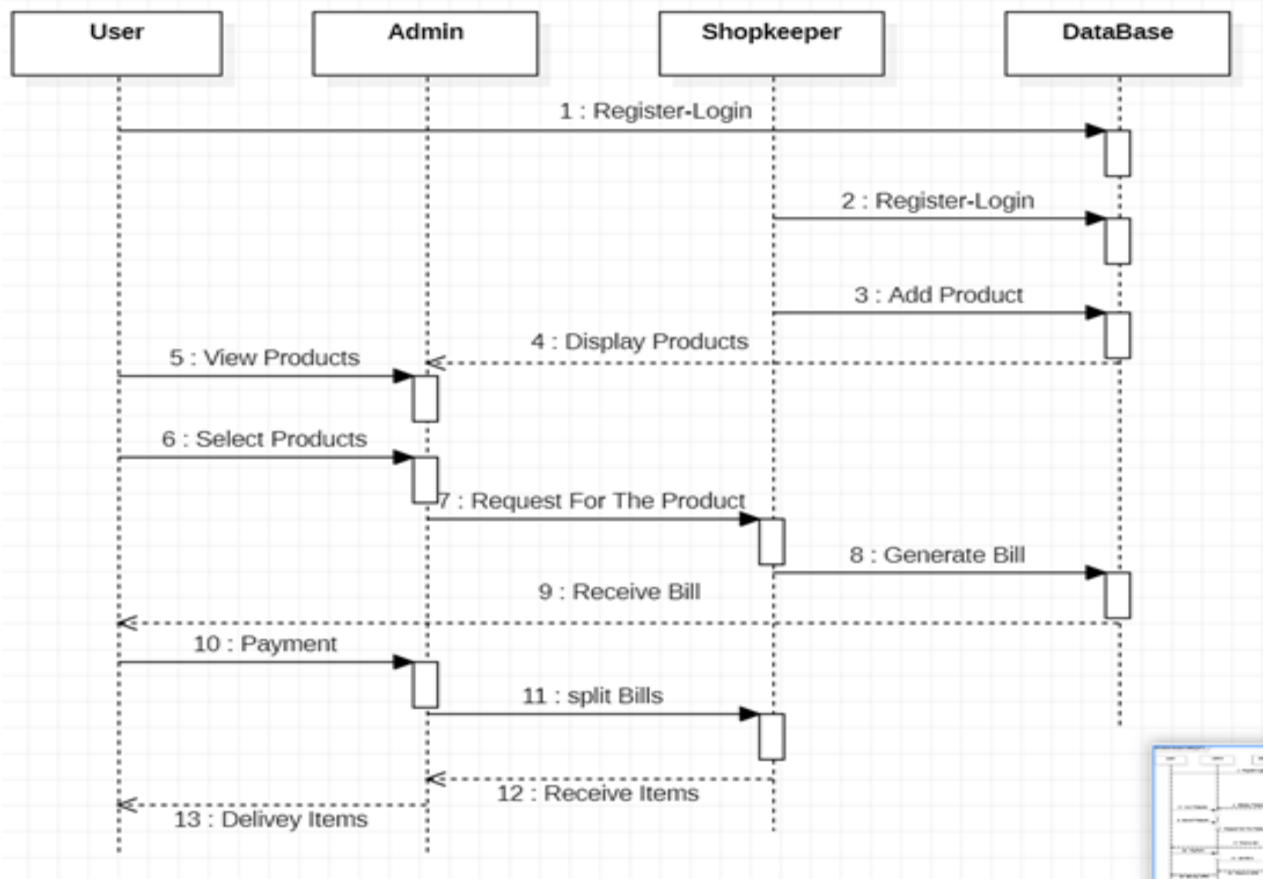


**Fig.3.4 Sequence Diagram for Grocery Shopping Management**

# CHAPTER 4

# IMPLEMENTATION

## 4.1 INPUT DESIGN

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things: What data should be given as input? How the data should be arranged or coded? The dialog to guide the operating personnel in providing input. Methods for preparing input validations and steps to follow when error occur.

## 4.2 OBJECTIVE

Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system. It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow

## 4.3. OUTPUT DESIGN

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.and next step is Select methods for presenting information. and Create document, report, or other formats that contain information produced by the system.

The output form of an information system should accomplish one or more of the following objectives. Convey information about past activities, current status or projections of the Future. Signal important events, opportunities, problems, or warnings. Trigger an action Confirm an action.

# CHAPTER 5

# RESULTS AND DISCUSSIONS

## 5.1 SCREEN SHOTS

Grocery Shopping Mobile App provides customer to known the price of products and what are the discounts that can be availed by them based on the given budget amount for purchasing products.The screenshots related to various functionalities of grocery management system are placed below. Here we placed the outputs of our project with step by step.

### 5.1.1 HOME PAGE

Once we open the application in bluestacks we get homepage i.e (fig.5.1) consists of 3 pages namely Administrator , user , data reset. If we click Data Reset button all the data will be removed.

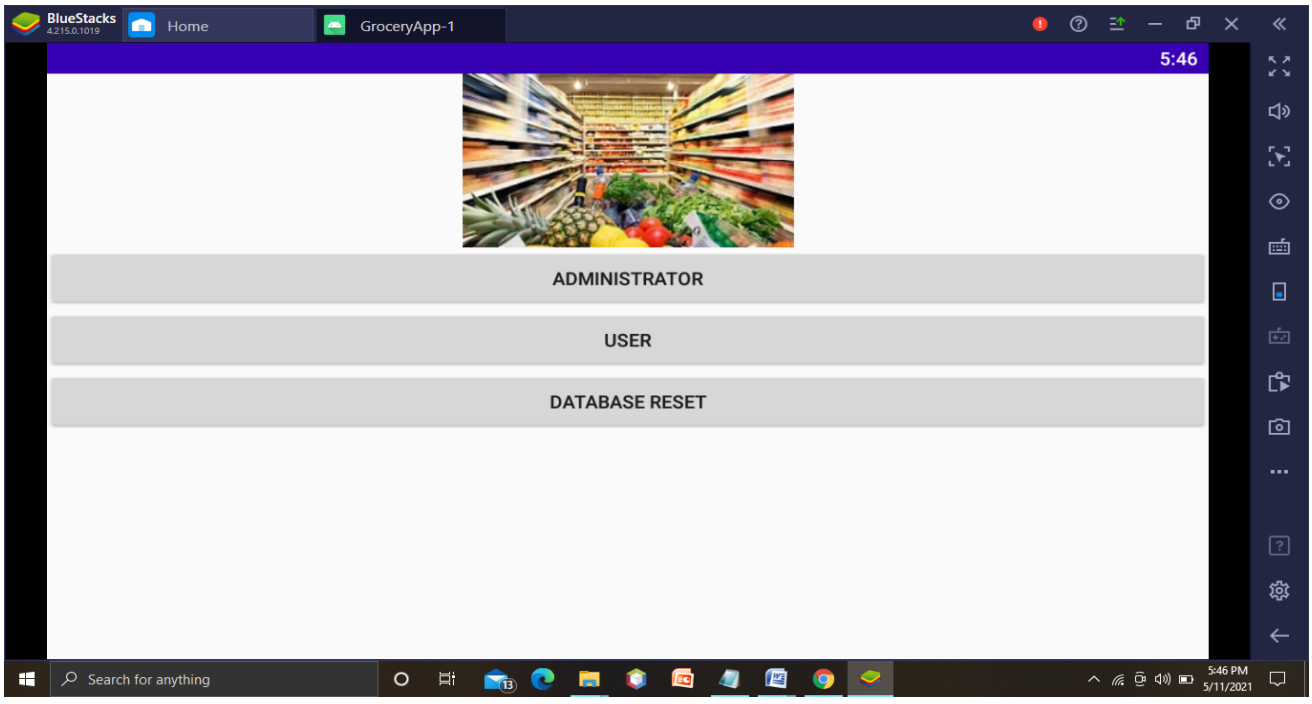


**Fig .5.1 Home Page**

### 5.2.2 ADMIN LOGIN PAGE

After clicking as admin button we redirect to admin login page as shown in fig. 5.2.Now admin has to enter username and password and click login button. if they are validated he redirects to next page.

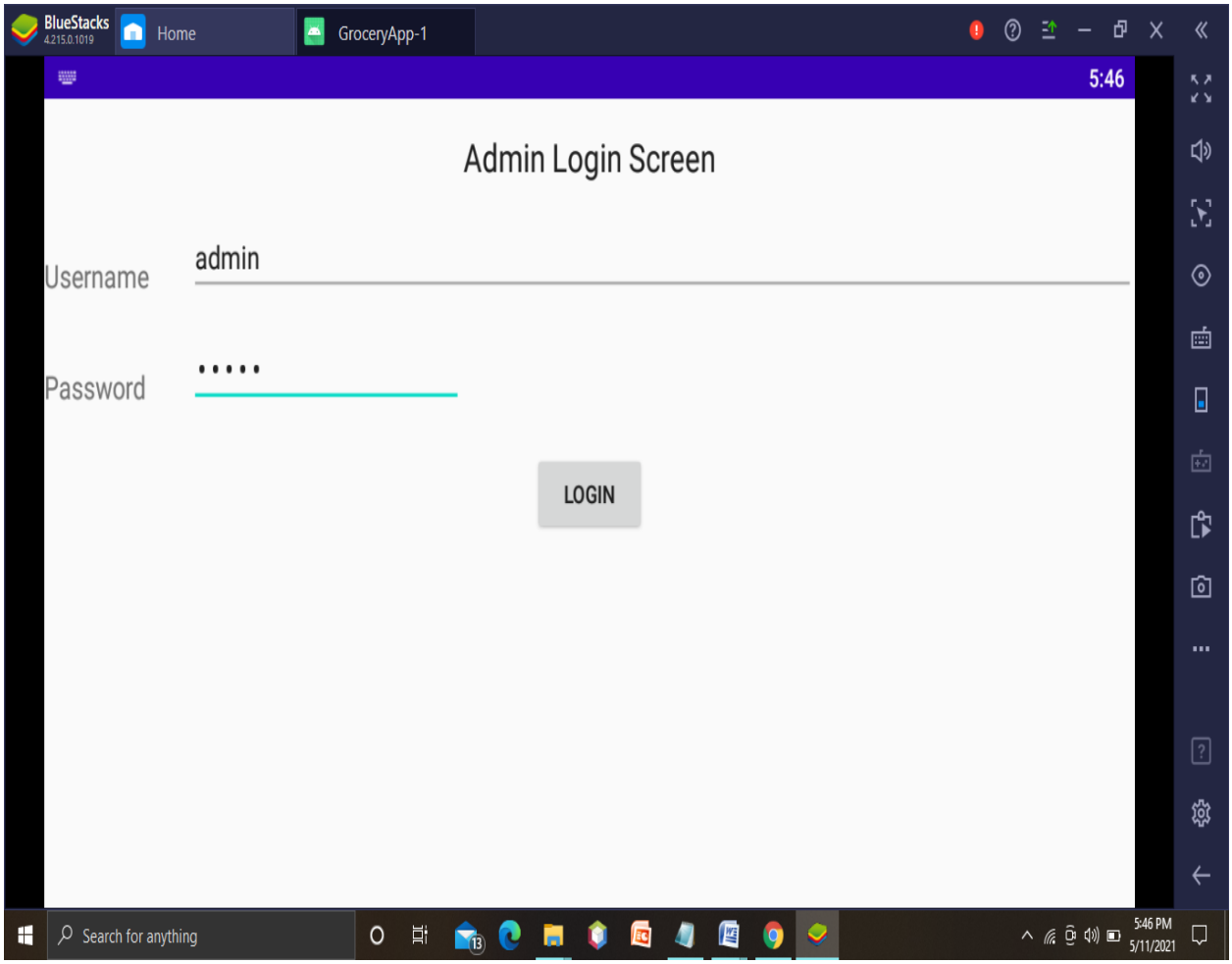


**Fig.5.2 Admin Login Screen**

### 5.2.3 ADDING PRODUCTS DETAILS

In figure 5.3, we can observe that Once logined successfully he can the add products details like product name and price and  submit and after submitting it will be stored in database.

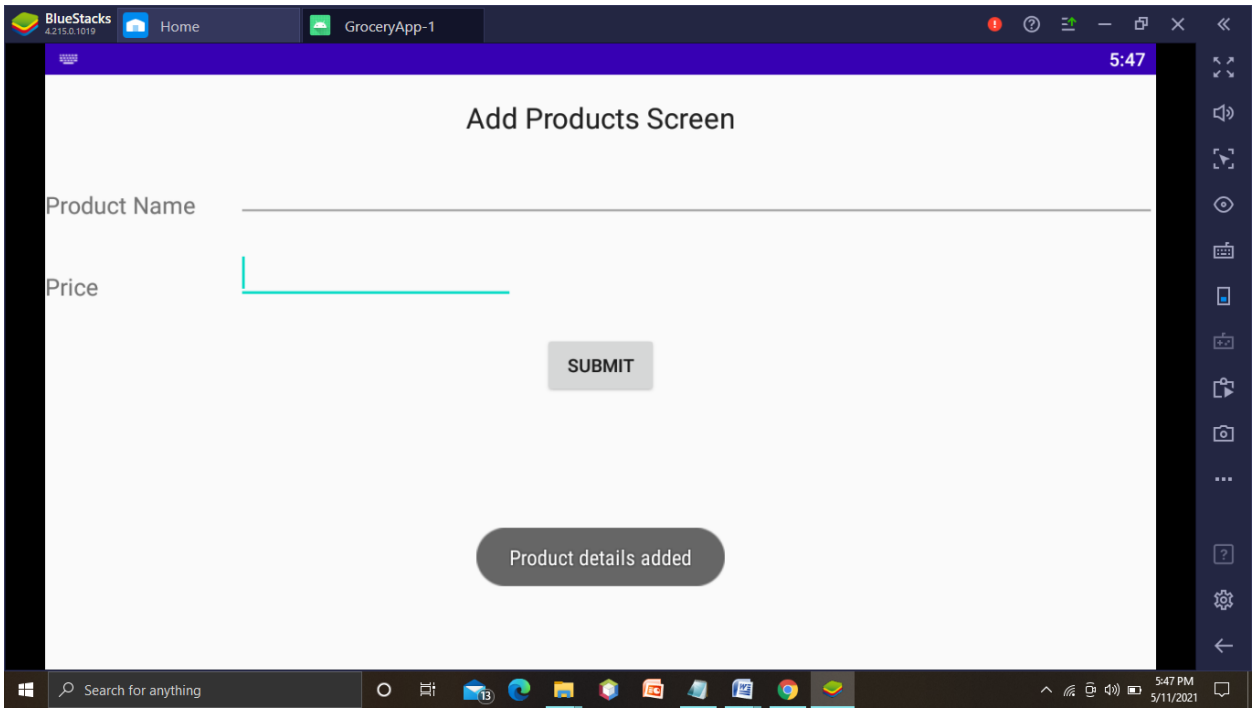


**Fig.5.3 Adding Product Screen**

### 5.2.4 LISTING AND UPATING PRICE OF PRODUCTS

While adding the new products details ,we can only add one product at a time but whereas if we need to update the price of products we can do it for one more products simultaneoulsy by selecting from list of products and price seperated by comma which can be seen in the fig.5.4.

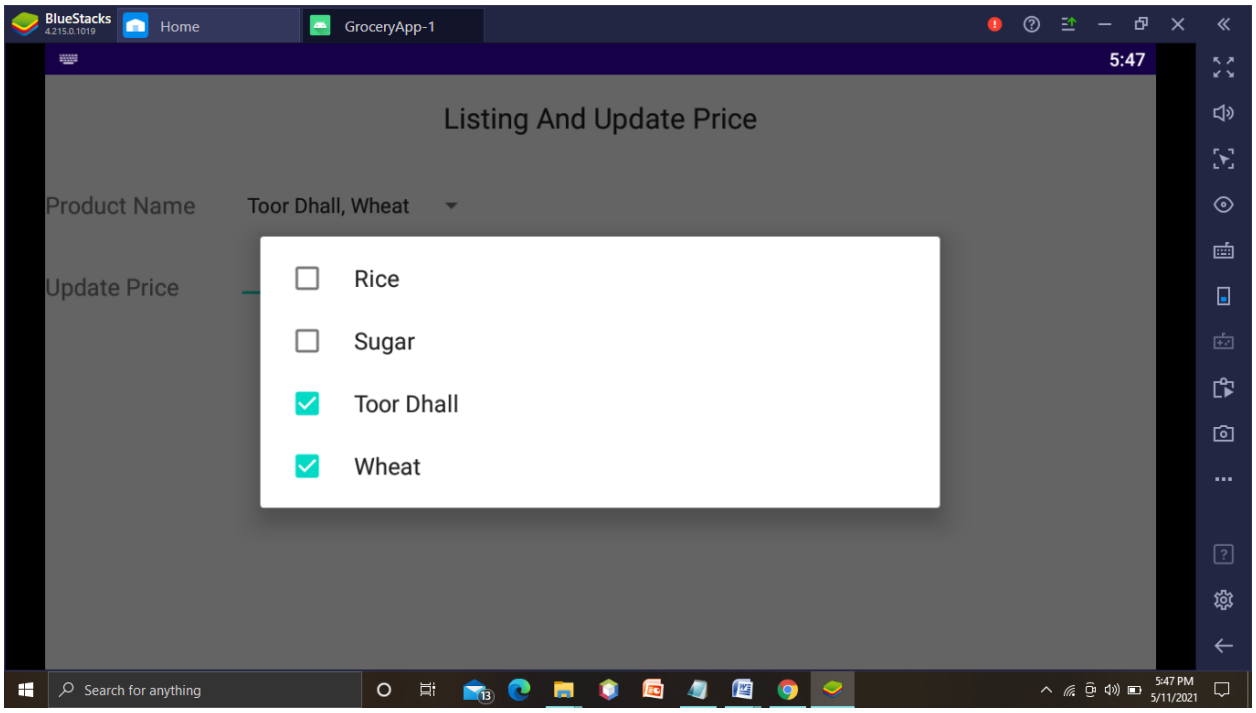


**Fig.5.4 Listing and Updating The Products Screen**

### 5.2.5 POPUP AFTER DETAILS GET UPDATED

Once after selecting the products which are to be updated and click update price we get a popup box which displays whether it is successfully updated or not as shown in the fig.5.5.

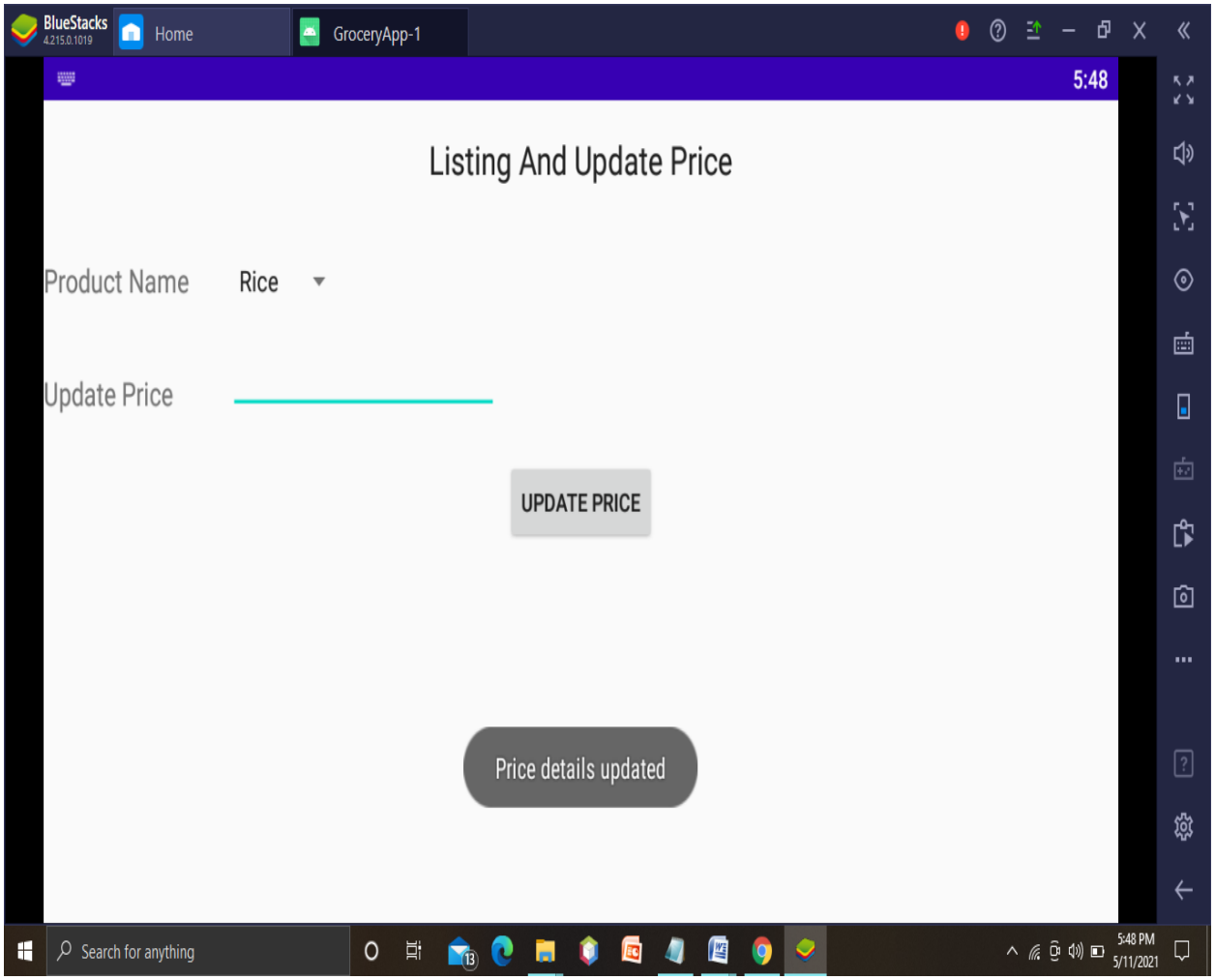


**Fig. 5.5 Popup Screen**

### 5.2.6 ADDING COUPONS BY ADMIN

Here admin also have option of adding coupon which means he provides discounts for the selected products and clicks submit .once coupon is added whenever customer purchases that product he can avail the discounted coupon automatically without selecting which can be viewed in fig.5.6 .

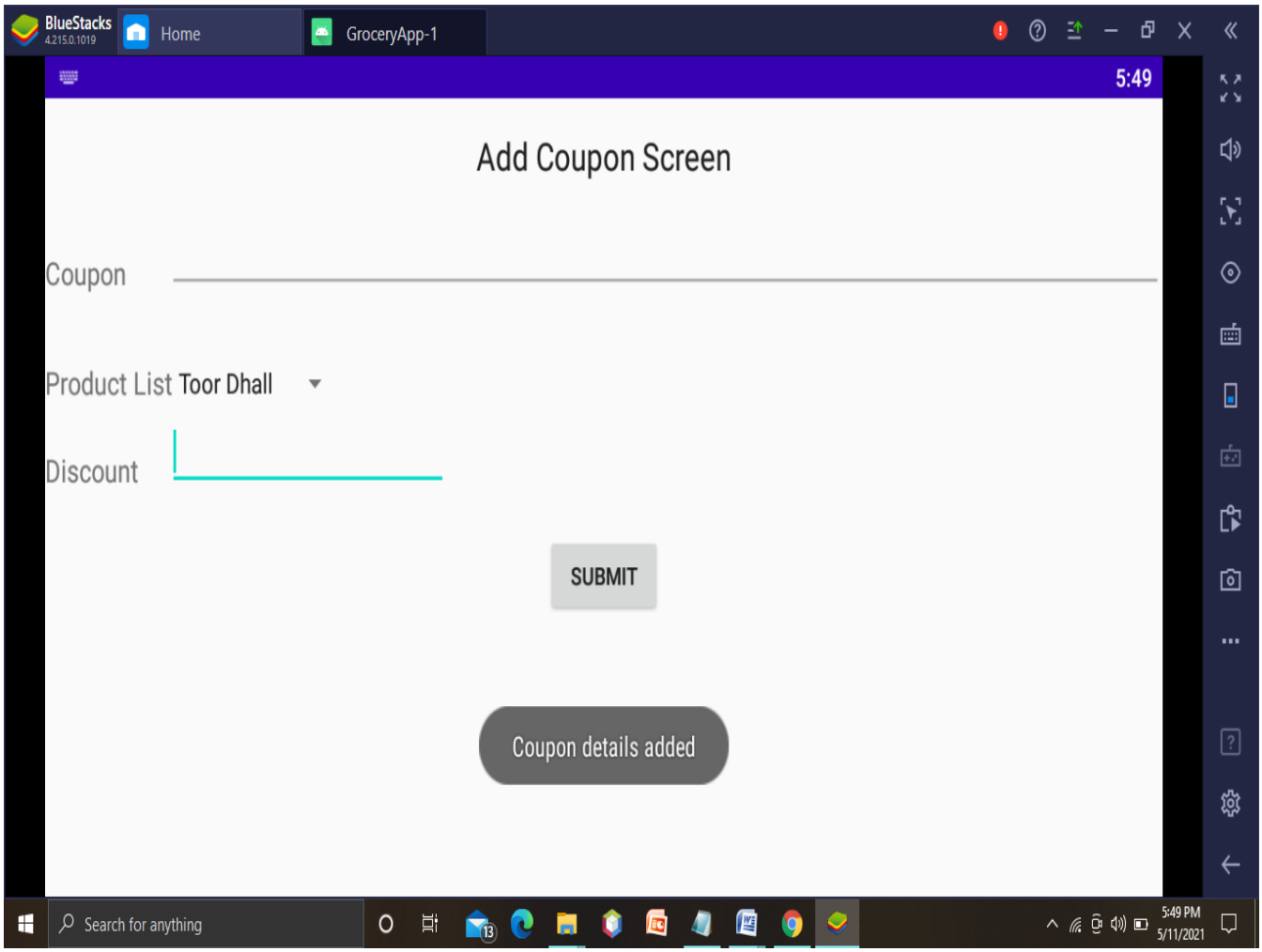


**Fig.5.6 Add Coupon Screen**

### 5.2.7 USER SHOPPING SCREEN

Now in the fig.5.7 we can see users screen for when he clicks the user button on the home screen. The below is the redirected page after clicking the user button, So here he can enter the budget amount to purchase the products and clicks submit.

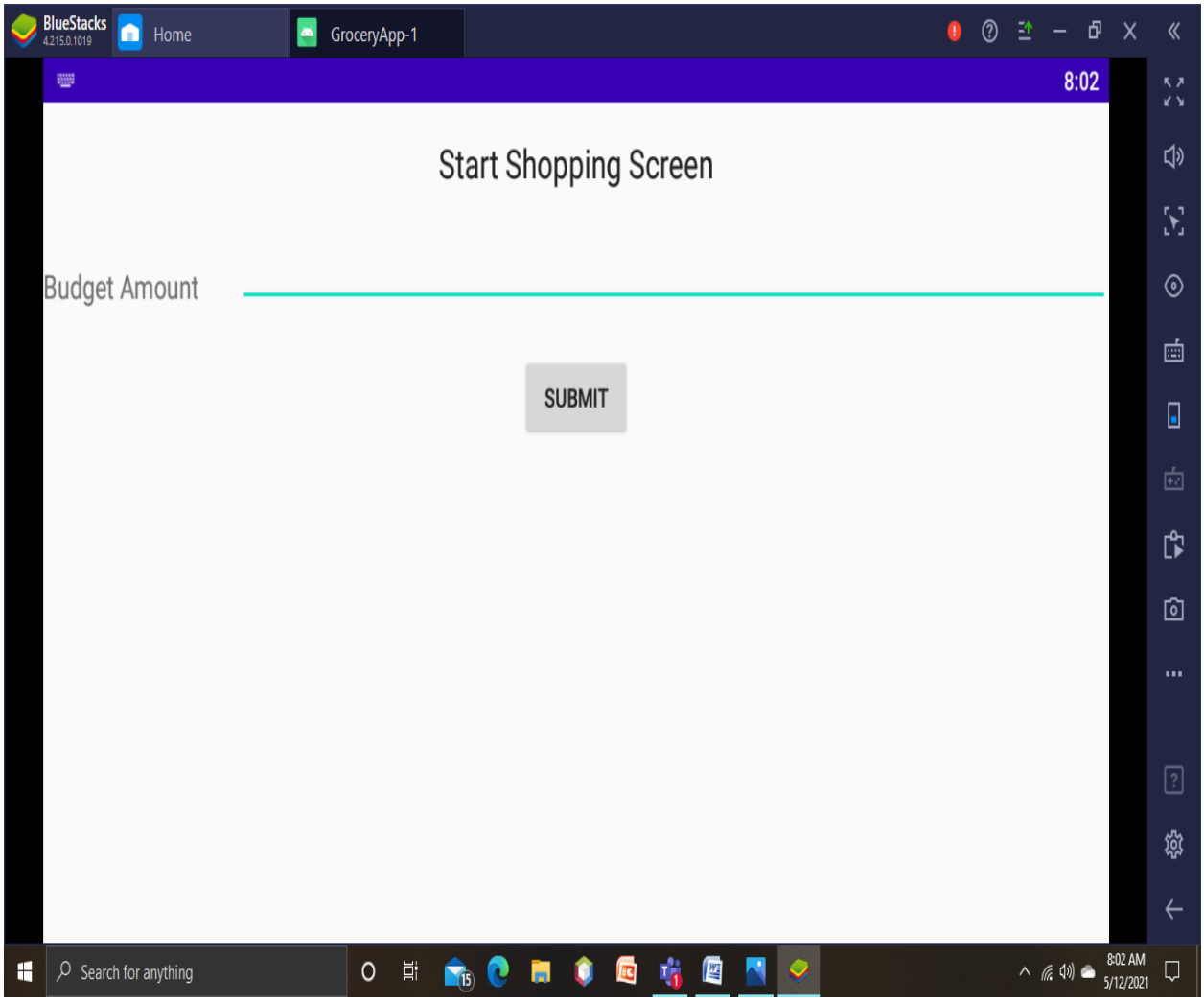


**Fig.5.7 User Shopping Screen**

### 5.2.8 USER SHOPPING SCREEN

Like below in the fig.5.8 we have shown an example ,like if customer enters budget amount as 10 and clicks submit and the redirected page can be seen in next next fig.5.9

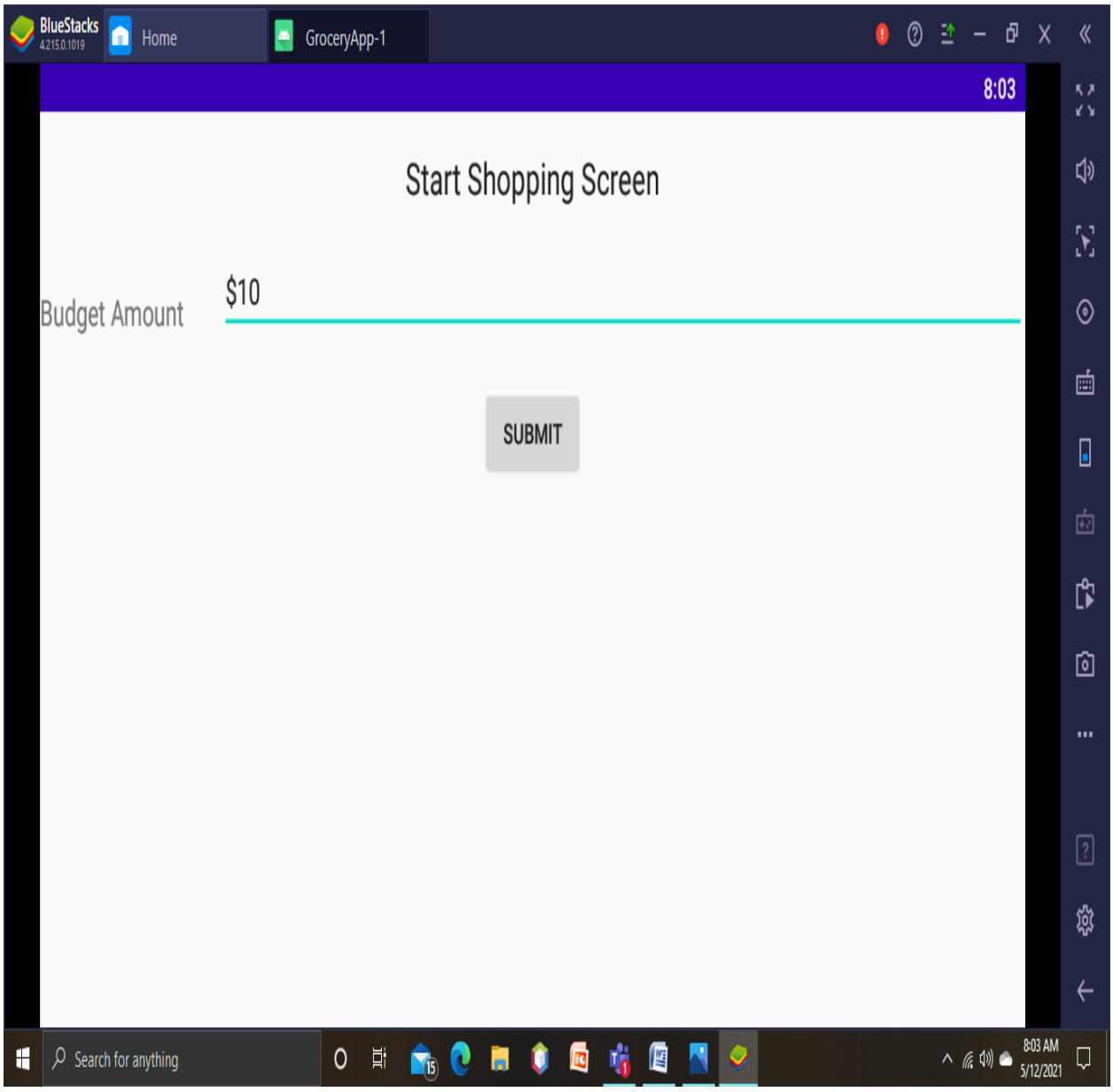


**Fig.5.8 User Shopping Screen**

### 5.2.9 THE PRODUCTS THAT CAN PURCHASE BY THE CUSTOMER BASED ON THE AMOUNT

Here is the screen where we can see the output based on the budget amount, like the user has entered an 10 as budget amount and it displayed that customer can purchase wheat, sugar and toordhall .For more information on each product details he can click select the product and it will show all the product information like total amount and discount etc. in a popup which can be viewed in fig.5.9.

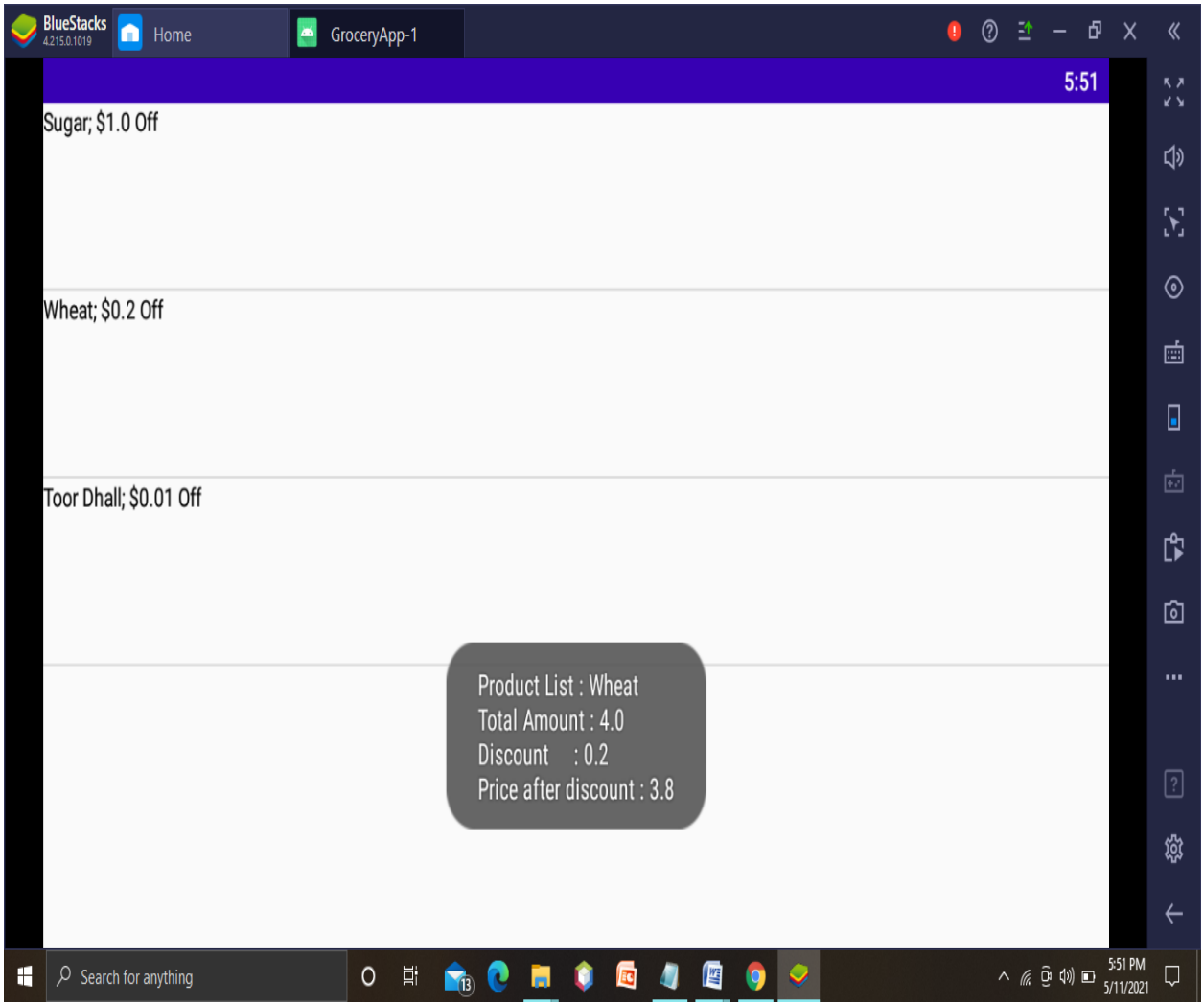


**Fig.5.9 Product Analysis Screen**

# CHAPTER 6

# CONCLUSION AND FUTURE WORK

## 6.1 CONCLUSION

Here, I have designed a project "**grocery shopping mobile app** " using Android. All the application codes are in Android **grocery shopping mobile app** is very beneficial for both costumer and shopkeeper .I presented my project which covers both proposed system and satisfies all the functional Requirements. The COVID-19 pandemic is changing life in many respects. Based on the results of our framed choice experiment, we conclude that the trend in the number of new COVID-19 cases also influences grocery shopping preferences. For instance, consumers in environments where COVID-19 is spreading at an increasing rate incur the most disutility of shopping inside the store. In environments where COVID-19 is spreading at a decreasing rate, consumer preferences for the home delivery method relative to the other methods are less strong, and the relative importance of the purchasing method attribute is lower in its entirety. Like , we hypothesize that the change in consumer behavior is driven partly by feelings of fear toward the virus. Overall, our study illustrates how grocery shoppers may behave as the world awaits the discovery of a COVID-19 vaccine.

## 6.2 FUTURE WORK

A similar limitation of our study is our strategy of relating variability in the preferences of grocery shoppers to an external manipulating factor. However, variability in grocery shopping preferences during the COVID-19 pandemic may also relate to demographic (e.g., age, income) and behavioral characteristics (e.g., risk aversion, health awareness). We look to future research endeavors to incorporate such ideas and thus improve our understanding of consumer behavior during periods of crisis.

## CHAPTER 7

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