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BASAVESHWARA ENGINEERING COLLEGE (AUTONOMOUS) BAGALKOT-587102

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

2020-2021

8th Semester

MAJOR PROJECT (UIS615P)

Report on

GROCERY RETALING APPLICATION

Submitted by

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

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CERTIFICATE

This is to certify that the mini project work entitled "GROCERY RETAILING APPLICATION" is a bonafied work carried out by Janhavi, Neeta, Nidhi and Aishwarya in partial fulfillment for the award of degree of Bachelor of Engineering in Information science and Engineering of Basaveshwar engineering College (Autonomous), Bagalkot, affiliated to Visvesvaraya Technology Technological University (VTU) Belgaum during the year 2020-2021. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the award of Bachelor of Engineering Degree.

Project Guide	HOD	Principal
Prof. Girish B. Shettar	Dr. S. R. Patil	Dr. S. S. Injaganeri

Name of Examiner	*Signature with date*
1. ……	……
2. ……	……

ACKNOWLEDGEMENT

The satisfaction that accompanies the successful completion of this project would be incomplete without the mention of the people who made it possible, without whose constant co-operation and encouragement would have made efforts go in vain. We consider privileged to success gratitude and respect towards all those who guided us through the completion of this project.

We convey thanks to our guide **Prof. Girish B. Shettar**, Asst professor, department of information Science and Engineering. Basaveshwar Engineering College for providing encouragement, constant support and guidance which was of a great help to complete this project successfully.

We are grateful to **Dr. S. R. Patil,** Professor and Head of Department of Information science and Engineering, Basaveshwar Engineering College for giving us the support and encouragement that was necessary for completion of this project.

We would also like to express our gratitude to **Dr. S. S. Injaganeri** Principal, Basaveshwar Engineering College for providing us congenial environment to work in.

We are grateful to **Basaveshwar Engineering College** with their very ideas and rations for providing the facilities which have helped us making in this project a success.

Finally, we would like to thank, my parents, god and friends for their constant encouragement with moral and material support

ABSTRACT

The Grocery Retailing Application contributes to the “self-reliant India” or “self-sufficient India” the mission of “ATMA NIRBHAR BHARAT”. The main aim of Groceries Retailing Application is to provide a platform for small-scale retailers or shops in the city, by registering their shops details in the application and receive orders from the customers as per their requirements. This application also helps in storing the valuable data of both customers and retailers for a long period of time with easy access and manipulation of the same. The application can lead to reliable and fast management system.

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Chapter 1 Introduction

1.1 Introduction

In several industrial fields value-adding mobile services have become essential to gain a competitive side in the marketplace. Nowadays, online shopping seems to be the undisputed way forward, the new normal. Shopping is a regular task in everyone's daily living activities, whether it is out of necessity or for leisure. In particular, groceries are items that generally require immediate and constant purchase. Grocery stores are often large and complicated resulting in a large amount of time wasted looking for and obtaining items. Today's society desires efficient and easy methods to complete their tasks. Thus, there is a need for solutions to lighten consumer stress by reducing time spent on menial tasks such as grocery shopping. Grocery shopping through online mediums has become a preferred and viable option that has greatly influenced and helping retailers provide targeted offerings to customers.

In this project, it is aimed to majorly help the small-scale retailers or shops who can register their shops on the application and receive orders from the customers as per their will and wish. The system focuses on easing the shopping overhead of most customers who have to hustle from place to place and also avoids the social gathering in front of shops hence reduces the risks of COVID-19. This application would also help in keeping the order summary and customer details for a longer period of time.

1.2 Objectives of Present Work

- The main objective of this project is to give information about the content of any retail shops chosen by consumers in the given list.
- To minimize the difficulty of business owners from finding customers and reducing the losses incurred in the pandemic times.
- Eliminate the unwanted human traffic created by window shoppers who take up space in various shops and markets.

1.3 Review of Literature

Rupali Rajesh, the author explains "The impact of online grocery shopping in metropolitan cities" [1]. We observed that the author, has tried to study and understand the factors influencing for online Grocery Shopping and also understands the demographic factors which influence the consumer to buy grocery online. We also noticed that author has tried to bring out the rapid growth of e-commerce industry where as the growth of online grocery was totally changing in food market because of customer relationship. It provides the products benefits and making a service more convenient to customers that felt luxurious every day.

Harjinder Kaur and Rakesh K. Shukla, both the authors explain "The Consumer's Attitude for Acceptance of Online Grocery Shopping in India" [2]. This paper seeks to understand the consumer's attitude towards online grocery shopping and to identify some factors and technical barriers that may foster or hinder the acceptance of OGS in India. However, the authors say consumers are also more concerned about the quality of products among the various fear factors related to online grocery shopping.

M. Punakivi and J. Saranen, the authors are trying to bring out the "Consumer's Purchase Intentions for E-Grocery Shopping in India" [3]. We have observed that Success or failure of e-grocery business depends much on timely home delivery transportation. In order to run the business of e-grocery into profits, the e-grocers needs to put the efforts to understand the variables that affects the cost structure of various service concepts. The simulation results show that e-grocery home delivery service can actually be as much as 43 per cent cheaper compared to the current costs of customers visiting the store using their own car and spare time. Therefore, it is a firm argument in favor of prediction that states the rapid growth of e-grocery business.

C. Hand, F. Dall'Olmo Riley, P. Harris, J. Singh and R. Rettie, the authors explain "Online grocery shopping: the influence of situational factors [4]". We have observed that authors discover factors that influence the adoption of buying online grocery by two-step process. In first step exploratory qualitative research is conducted in order to gain the in-depth knowledge of buying behaviors of groceries online by consumers.

K.M. Chatzis, V.F. Panagiotopoulos, and V. Mardiris, the authors explain “Factors Affecting Consumer Intention to use Internet for Food Shopping” [5]. We have observed that the author proposes a new simple model to describe the factors that influence the intention to use internet for food shopping. The results of the study depicts that there are some important variables that affect consumers online purchase attention for e-grocery and these factors are: safety feeling (insecurity affects negatively the intention to use e-shops), comfort (the greater comfort positively influences the intention to use e-shops), access (ease of access positively affects intention to use e-shops) and product selection (better choice positively affects intention to use e-shops for food shopping).

Z.M.M. Zalini. N. Ramli,F .A.Ghani, A. Samsudin, M. Hamid, K. Jusoff and M. Musa,the authors explain “The online grocery shopping: The effect of time availability on Malaysian consumer preferences” [6]. We have observed that the study examined the perceptions and preferences of Malaysian consumers towards online grocery shopping. It is also examining three (3) important factors in online grocery shopping; cost and charges, time availability and convenience of online grocery shopping, which will contribute to the impact of online grocery shopping. Sample of population for this study were consumers who had some experience in online food retailing, particularly online grocery shopping and also those who have not yet to use internet to purchase grocery products.

1.4 Layout of Thesis

Chapter2: This chapter discusses the existing system and proposed system.

Chapter3: This chapter discusses the requirement specification for the project which includes the functional and nonfunctional requirements.

Chapter4: This chapter contains the design part of the project. It involves the architecture and the sequence, use case of the project.

Chapter5: This chapter discusses the testing phase of the project.

Chapter6: This chapter discusses the result of the project.

Chapter7: This chapter contains the conclusion and the scope of future work followed by some of the references and appendix.

Chapter 2 Existing System and Proposed System

2.1 Existing System

As per the current system, the internet has upgraded the vision of day-to-day shopping. Customers prefer to buy groceries through online stores like Big-basket, Amazon pantry, Flipkart groceries, etc. as they find it easy and more convenient. Many online stores have advanced their features to grab the customer base by keeping delivery time as the prime factor and achieved it by tying up with hypermarkets and supermarkets.

2.2 Advantages and Disadvantages

2.2.1 Advantages

- Customers can purchase items from the comfort of their own homes or workplace.
- Customers do not have to stand in queues at cash counters to pay for the products that have been purchased by them.
- In online stores, customers can get a variety of products and detailed information about the products.

2.2.2 Disadvantages

- The current system leads to the degradation of the business of retailers.
- Since the current system is third party applications, there is no proper communication between a customer and the shopkeeper

2.3 Proposed System

The proposed system is a web application that will collect information about the customers who wish to buy the items from the shops chosen by the customers from the given list.

The application is proposed to be an extension of the market to a customer who finds it difficult to visit the markets which are located in busy business areas of cities.

2.4 Advantages

- It helps the small shop owners by making them stand in the market in terms of business
- The system focuses on easing the shopping stress of most customers who have to hustle from place to place and also avoids social gathering in front of shops hence reduces the risks of COVID-19.

Chapter 3 Requirement Analysis

3.1 Functional Requirements

- **Order_ Place:** The application shall let a customer select a particular shop and place an order for one or more grocery items.
- **Order_ Item:** The application will display items for the customer from selected shops so that they can choose to order the items from a particular shop.
- **Order_ Units_ Item:** The application shall allow the customer to indicate the number of units of each grocery item he/she wishes to order.
- **Order_ Units_ Change:** If the customer wants to change the number of items ordered or cancel the order can be done within a given span of time.
- **Order_ Confirm_ Display:** When the customer is done with adding grocery items to the cart then **the** application shall display the items ordered, individual item price, and payment amount is calculated.
- **Order_ Confirm_ Prompt:** the application shall prompt the customer to confirm the order.
- **Order_ Confirm_ Not:** if the customer doesn't confirm the order the customer may edit or cancel **the** order.
- **Order_ Confirm_ Yes:** The application shall display the order confirmed and has been placed.

3.2 Non-Functional Requirements

- **Portability**: The application is designed for web portal.
- **Reliability**: The ability of the system to behave consistently in a user- friendly manner.
- **Availability**: The system should be available at all times
- **Maintainability**: A database is used to maintain the customer information and the order information.

- **Security**: The customer goes through the login authentication before using the website.

3.3 Software and Hardware Requirements

3.3.1 Software Requirements

Web Server: Firebase

Back end: Firebase and Java Script

Front end: HTML, CSS, JavaScript

3.3.2 Hardware Requirements

Operating System: Windows 7, Windows 8, Windows 10

RAM: 4 GB RAM

Chapter 4 Design

4.1 Architecture of Grocery Retailing Application

The project architecture is mainly composed of two components namely user-side and vendor-side. Users can select items from shop and place order whereas vendor will be able to visit those orders and process them accordingly. Let us have the in-depth detailed behavior of the two architectures.

4.1.1 User Side:

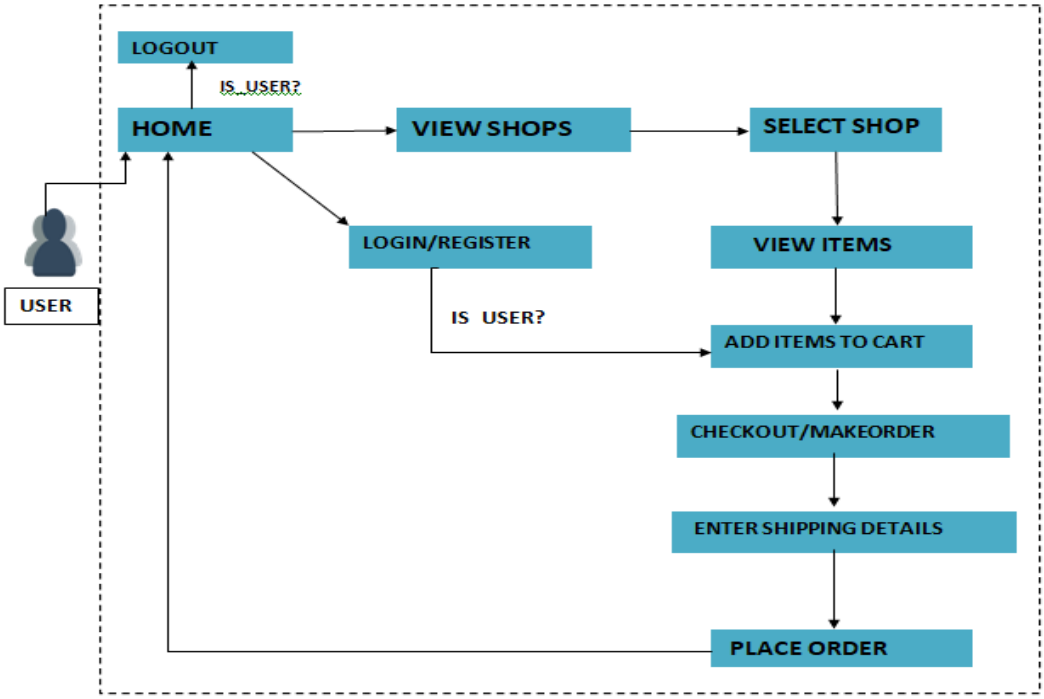


Figure 4.1.1 User side architecture of grocery retailing application

User-side Architecture: Users can visit our application dashboard and they can navigate to any shop from the list of shops. Users can navigate further in a shop selecting it from the shops list. Here, the items are categorized for user convince so that they can find the items easily. They can add the items to cart that they wish to buy. If the user is not logged in then he will be redirected to login upon clicking add to cart button. On clicking the cart icon, they will be able to proceed to checkout with the items in cart. User will be redirected to place order page, here user need to add the address details and place order directly. As soon as the order is placed the user will be redirected to home with proper display message.

4.1.2 VENDOR SIDE:

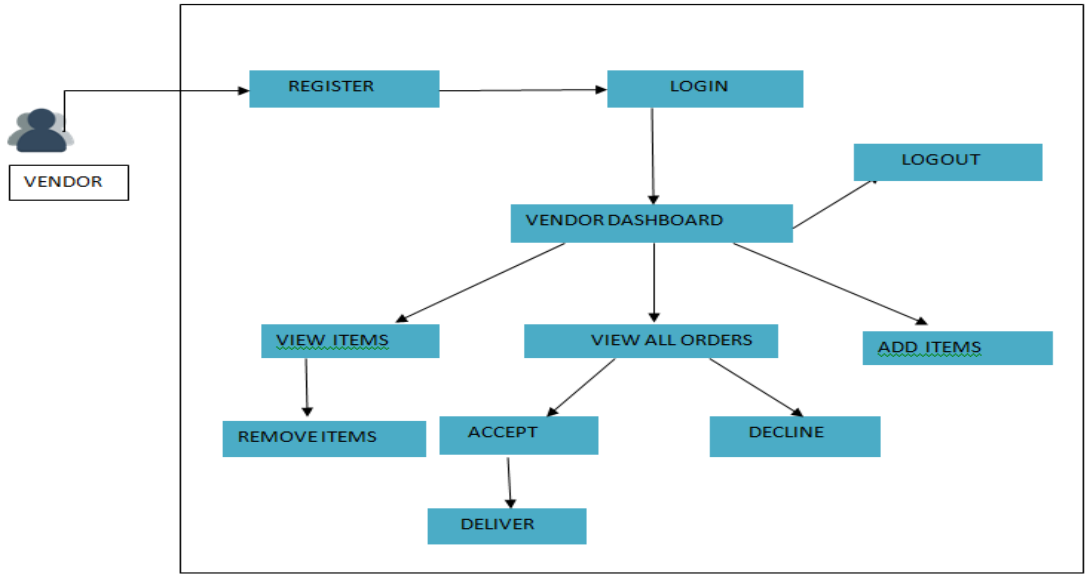


Figure 4.1.2 Vendor side architecture of grocery retailing application

Vendor-side Architecture: Vendors will be given separate portals to register their shops in the application. Upon registering, vendor will be provided with the login credentials over mail on registering. Then the users will be able to see the shop in the shop list. The vendors will have the privileges to add and remove items from the item-list that they wish to sell. They may also visit the user orders and accept/decline accordingly. Further, the accepted orders will be marked to deliver once the accepted orders are processed.

4.2 Use Case Diagram

4.2.1 User Side:

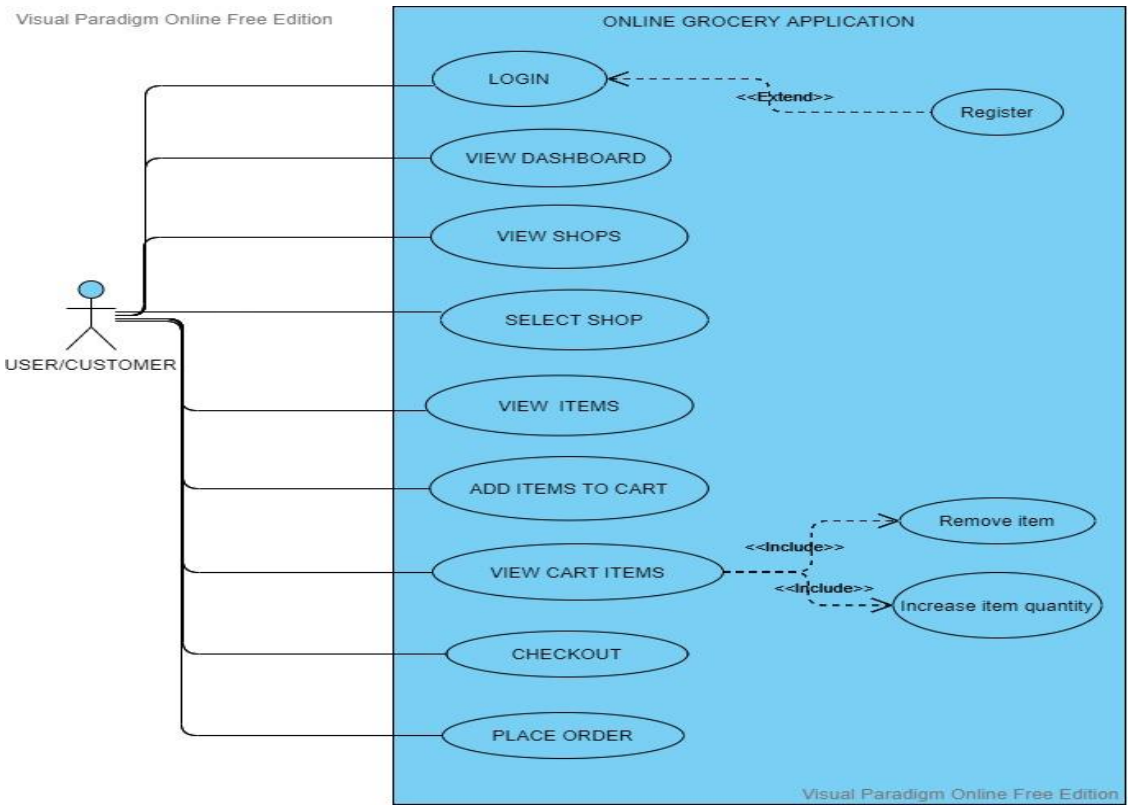


Figure 4.2.1 User side use-case diagram of grocery retailing application

4.2.2 VENDOR SIDE:

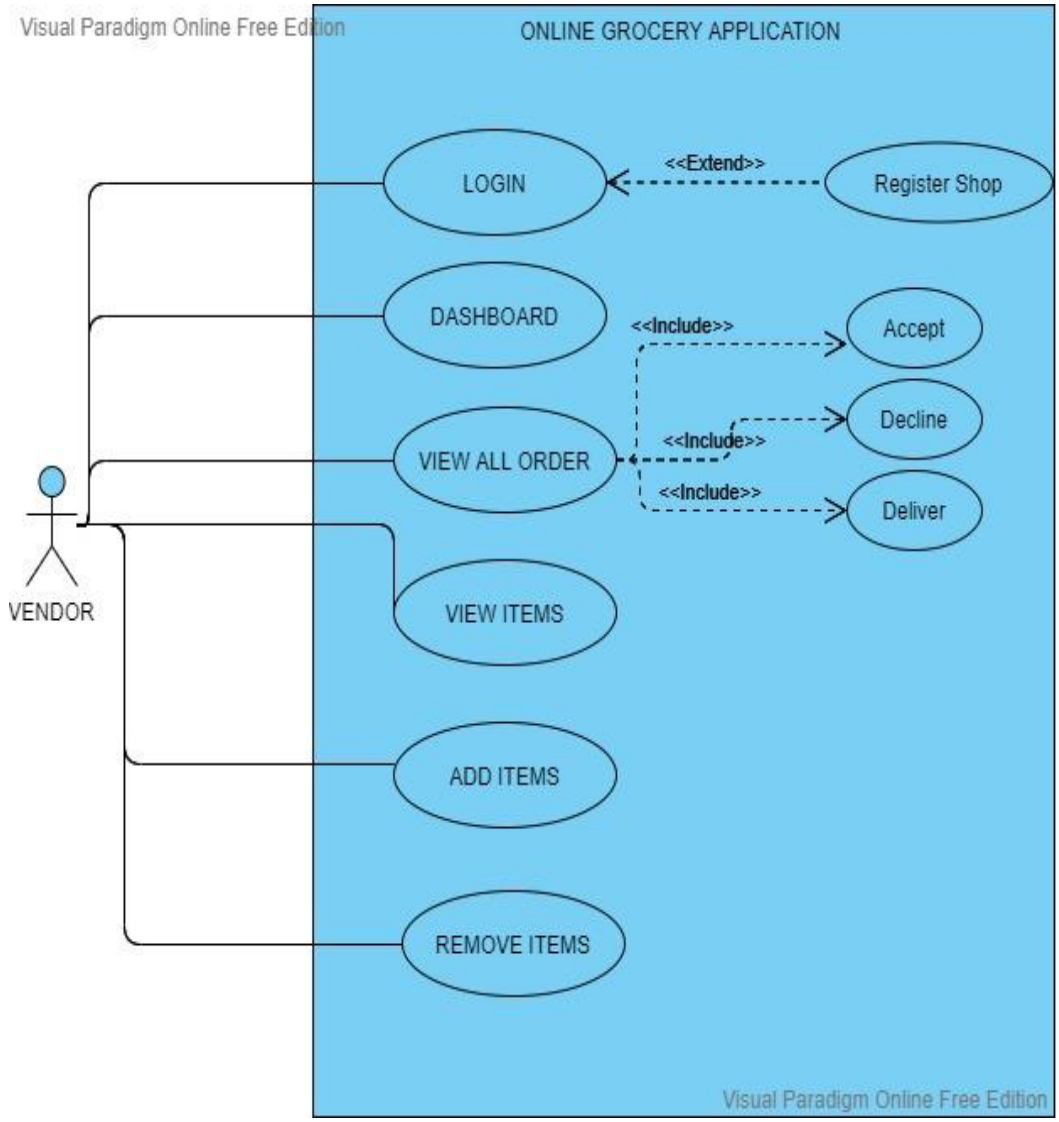


Figure 4.1.2 Vendor Side Use-Case Diagram of Grocery Retailing Application

Description

A use case diagram is the view of user interaction with the system. Use case diagrams are well preferred for high level requirement analysis of system and to capture the functionalities. After the functionalities the second important thing which is relevant to the use cases are the actors. Actors can be defined as entity that interacts with the system; in most cases they can be human user. As shown in use case diagram there are two actors i.e. user and vendor.

User logs in into the app and select items that he/she wishes to buy and then push the items to cart to place order. User has the privileges to view his cart items and can alter the item count of each item in cart. User can also remove the item from the cart.

On the other hand, vendor gets these orders and then vendor processes the orders by accepting or declining them, further the accepted orders once completed are marked as delivered. Vendors also have the access to the shop items so that they can add or remove items from the shop's item list.

4.3 Sequence Diagram of Grocery Retailing Application

4.3.1 User Side:

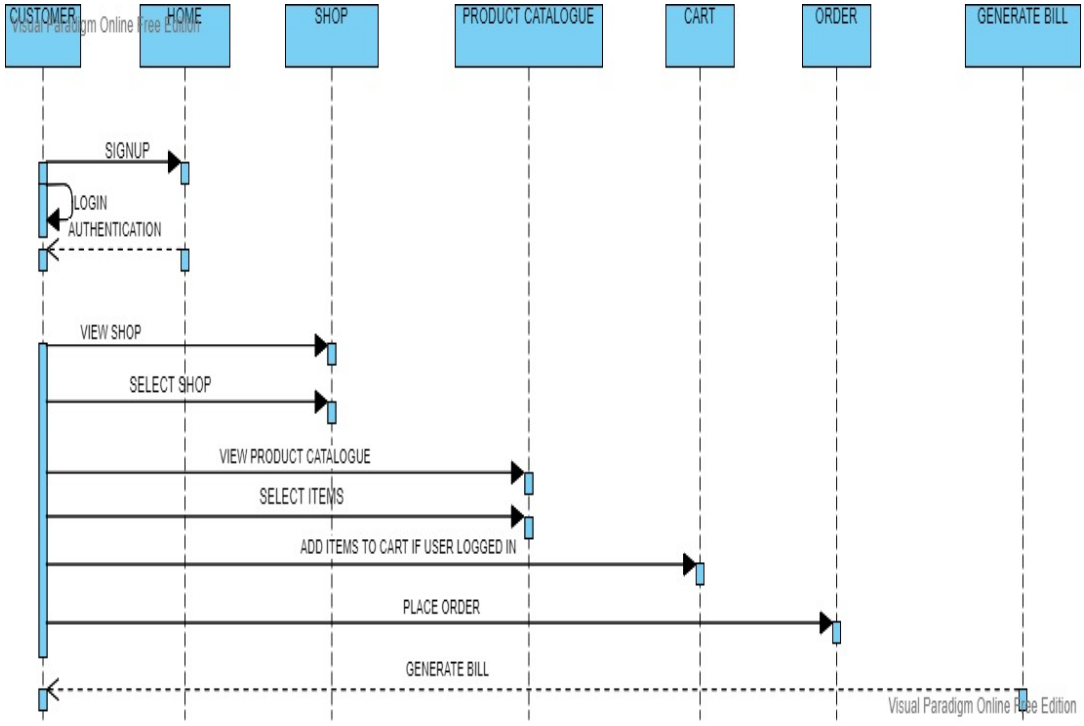


Figure 4.3.1 User Side Sequence Diagram of Grocery Retailing Application

4.3.2 Vendor Side

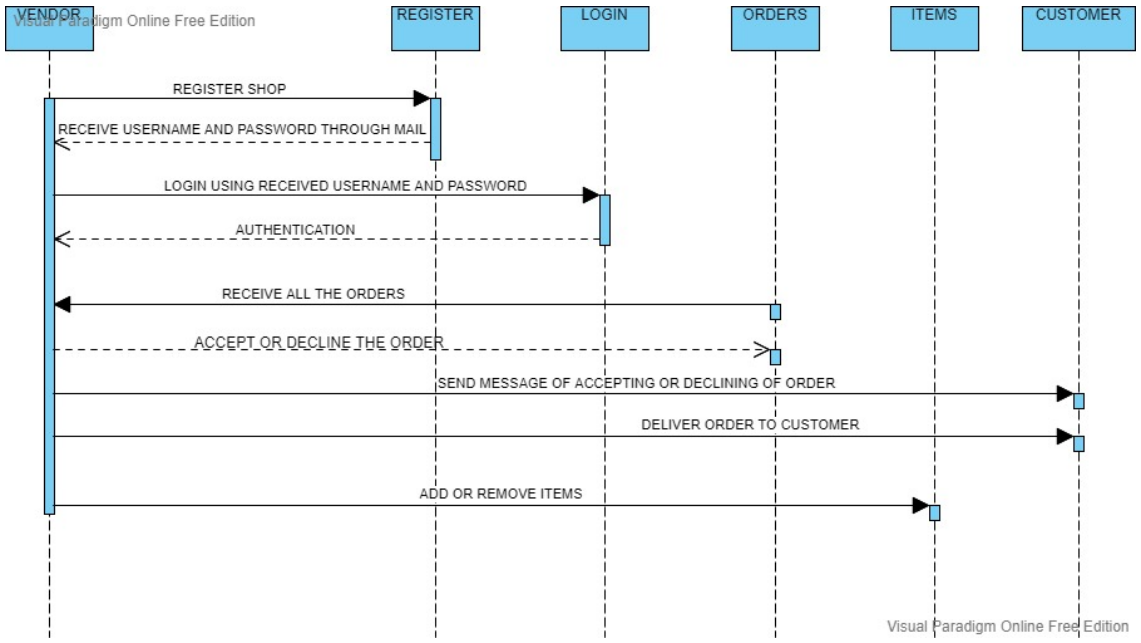


Figure 4.1.2 Vendor side sequence diagram of grocery retailing application

Description

Sequence Diagram is an interaction diagram that details how operations are carried out what messages are sent and when. Sequence diagrams are organized according to time. The time progresses as you go down the page. The objects involved in the operation are listed from left to right according to when they take part in the message sequence. Here, we have separate sequence diagrams for both user and vendor.

User or customer is the main actor. User can login and signup for the application using the application dashboard. Further, from the dashboard he can access the shop list. On selecting the shop from the shop list, user can see the items lists that are being sold by that shop. User will need to select the items and add then to cart in order to check out the cart to place an order.

Vendor is another actor in the scene. Vendor will need to register for his shop in order to access the other privileges. Upon registering, vendor may login the application to go to dashboard. Vendor can add new items into items list and also can remove some item if necessary. Vendor will have access to orders which he can accept or decline. Proper

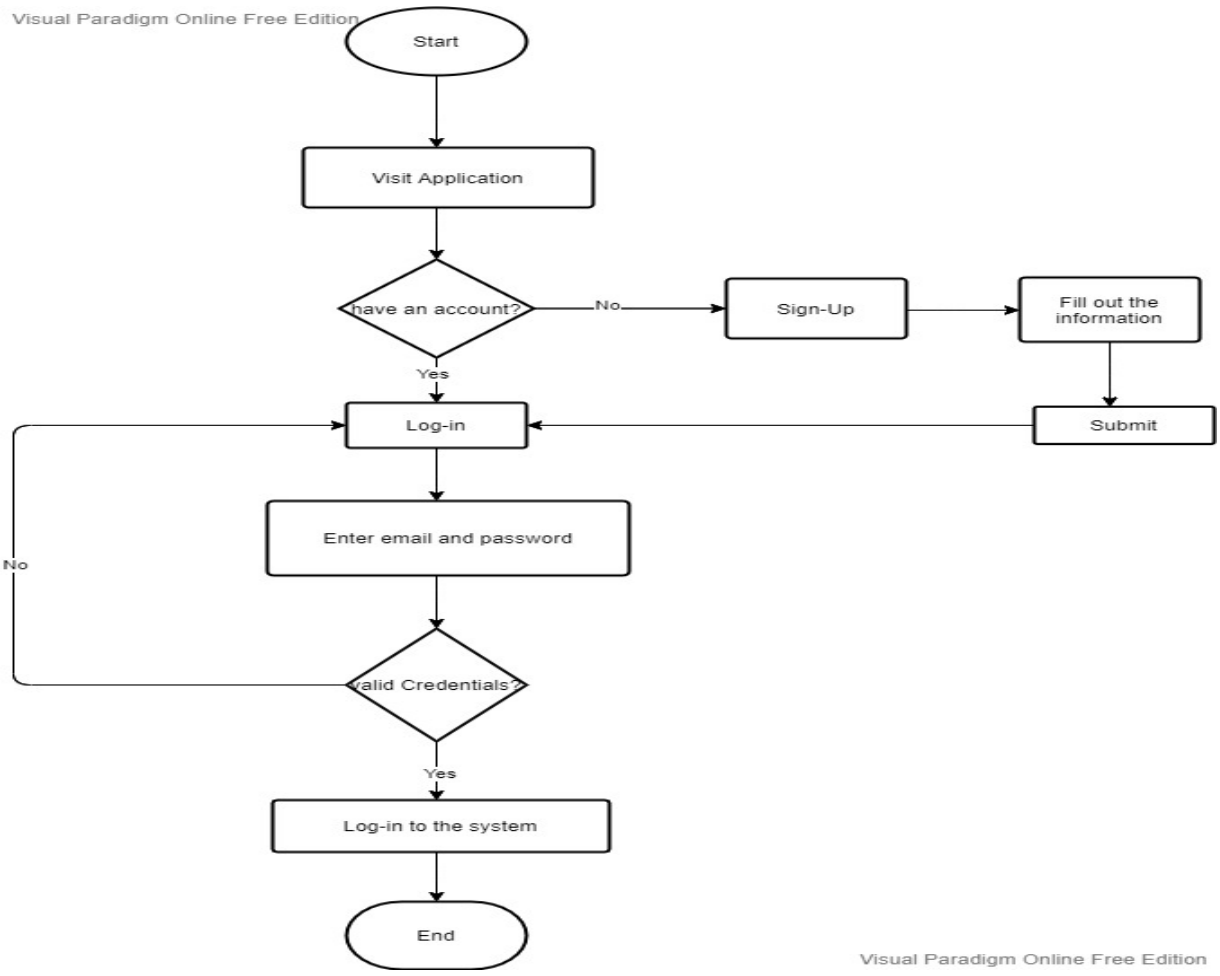
message will be conveyed to the user based on vendor's action. Further, accepted orders will be marked to deliver once the order processing is completed and hence the delivery message will be updated to that particular user.

Chapter 5 Implementation

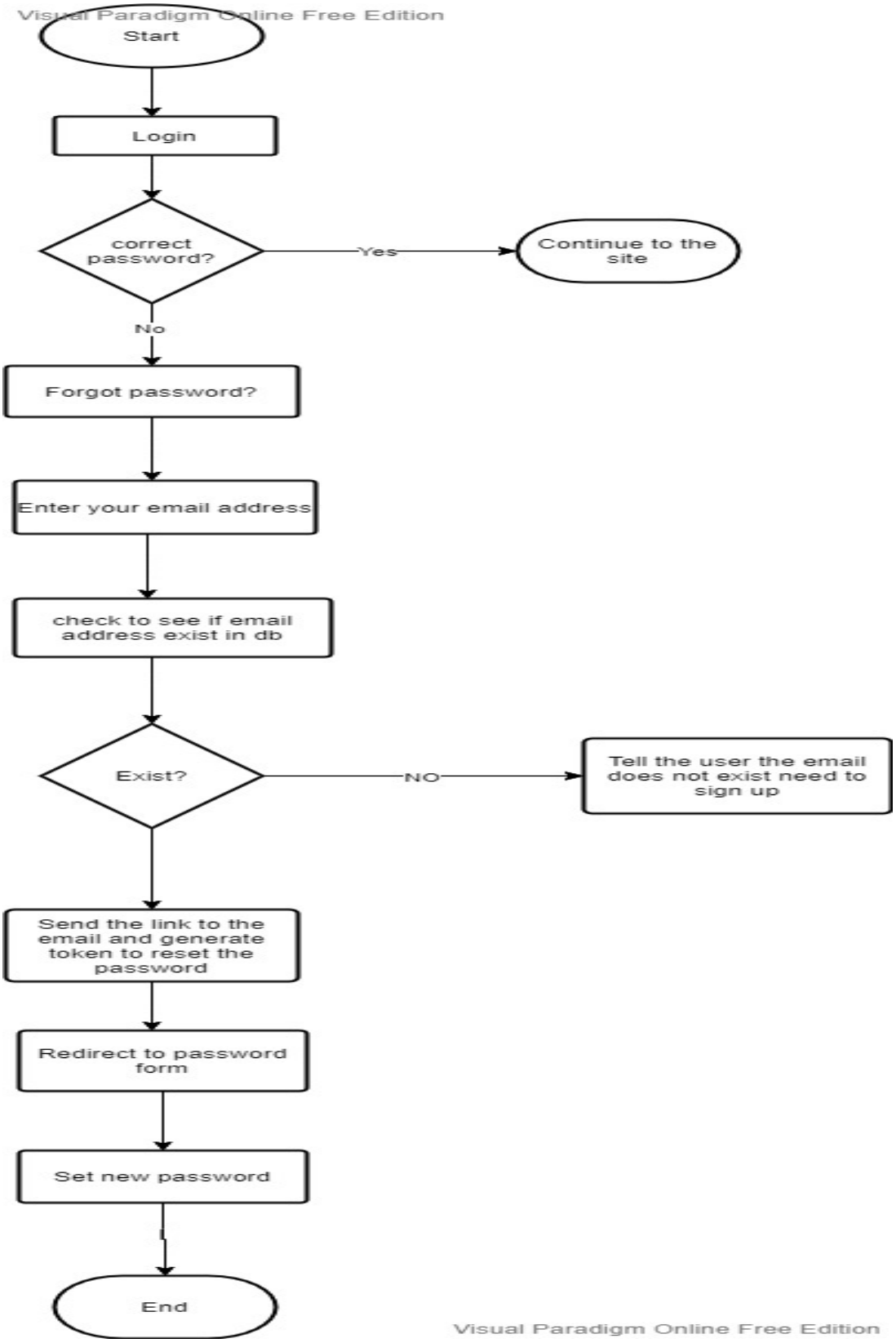
The project Grocery Retailing Application consist of two main modules namely- user module and vendor module. The user module consists of the login authentication module, forgot password module and place order module. The vendor module consists of shop registration module and login module and vendor Dashboard module.

5.1 User Module:

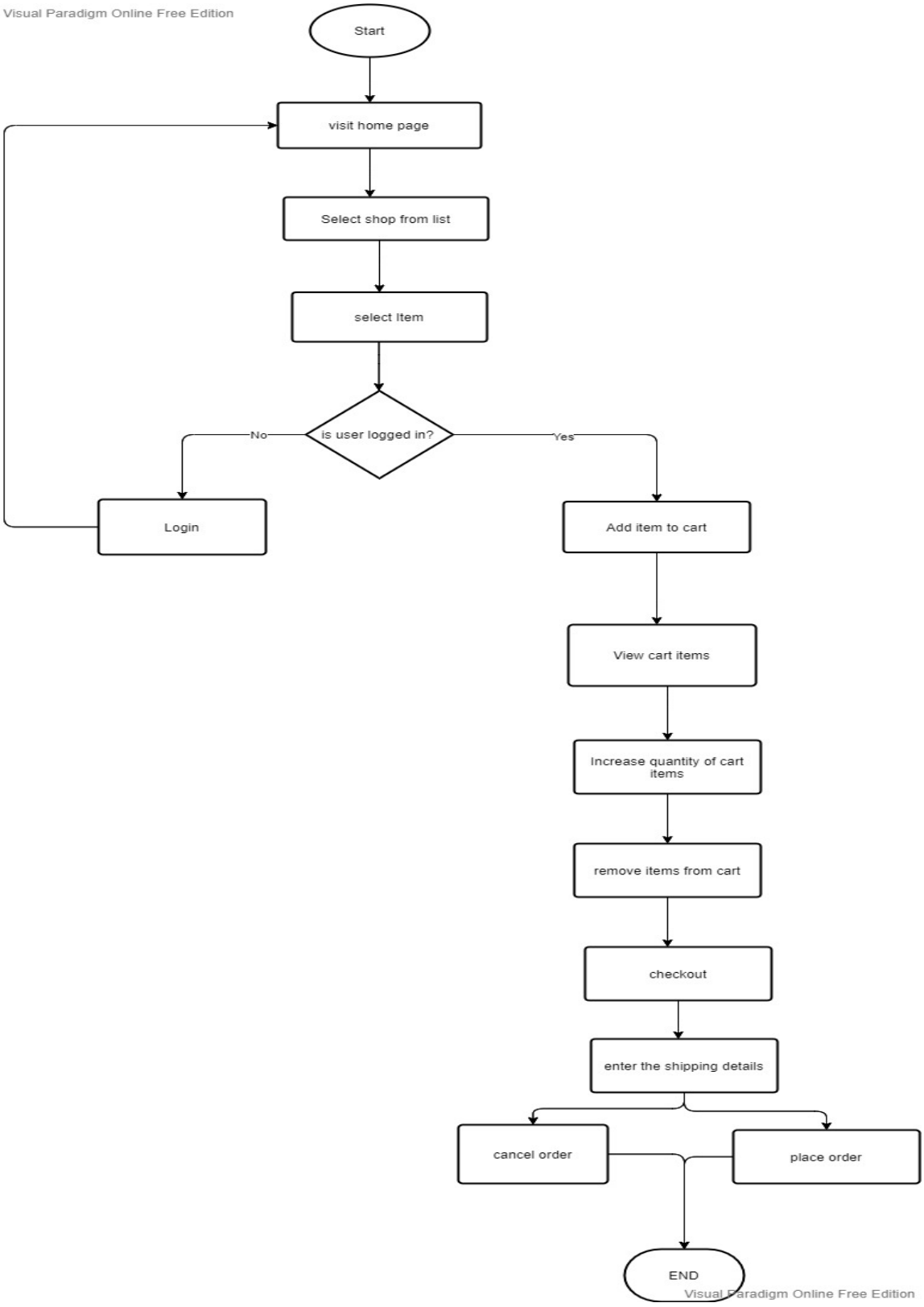
5.1.1 Login Authentication Module:



5.1.2 Forgot Password Module:

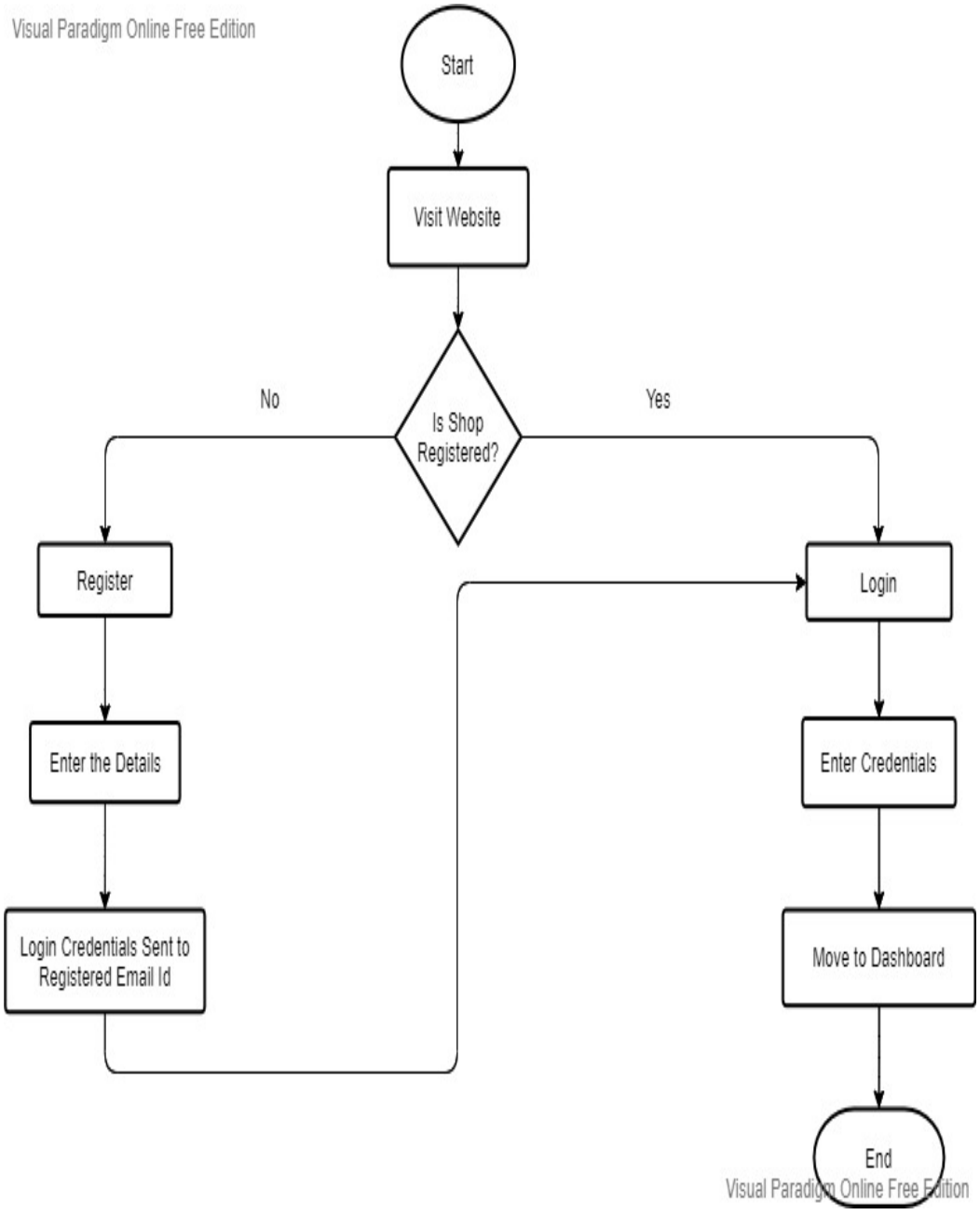


5.1.2 Place Order Module:

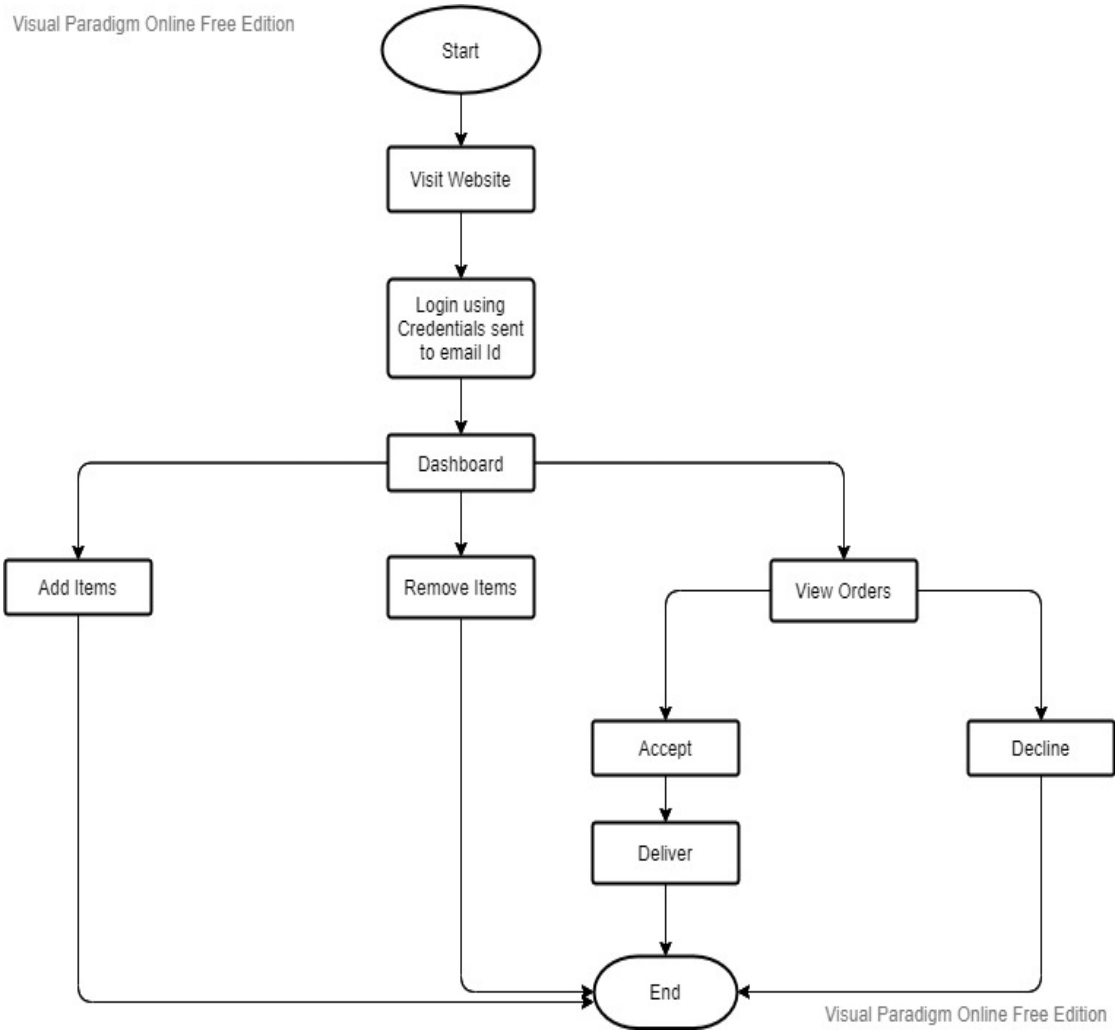


5.2 Vendor Module:

5.2.1 Shop Registration and Login Module:



5.2.2 Vendor Dashboard Module:



Chapter 6 Testing

6.1 Testing Environment

The primary goal of testing is to determine if software is as desired, that is it conforms to the requirement. Testing focuses on semantic errors also known as faults that cause the program under test to behave incorrectly. Testing is vital to the success of the system. Software testing makes a logical assumption whether all parts of the system are correct & whether the goal is successfully achieved. The candidate system is subjected to variety of test online. A series of test are performed before the system is ready for user acceptance.

6.2 Types of Testing

Unit testing

During unit testing we tested all the modules individually and tested their working conditions and they work appropriately.

Integration testing

We combined the user module and vendor module i.e., integrated each module with another to see that will they work properly or not**.**

Functional testing

We tested whether all the functions of device are working in a correct manner or not, also tested the system is working properly with all functions like vendor receiving the orders, and sending the mail related to order etc.

System testing

System testing is done with all implementation of the project that everything is working properly or not.

6.3 Test Cases

Tc no	Test Case Module	Test Case Description	Expected Result	Actual Result	Status
1	User Registration	Enter registration details.	Login page shall be displayed	Login page is displayed	Pass
2	User Login	Enter login details [Example-Email and password]	Home page is loaded which is an interface for the user	Home page is displayed	Pass
3	Load the list of shops	Click on “Shops”	List of shops is displayed	List of shops is displayed	Pass
4	addToCart()	Click on “Add”	Items added success-fully alert is displayed	Items added success-fully alert is displayed	Pass
5	List of items in cart	Click on “cart”	List of items added to cart shall be displayed	List of items added to cart is displayed	Pass
6	proceedToOrder()	Click on “check out”	Delivery details is asked	Delivery details is asked	Pass
7	placeOrder()	Click on “place order”	Order placed successfully alert shall be displayed	Order placed successfully alert is displayed	Pass
8	CancelOrder()	Click on “cancel”	Your order has been cancelled alert shall be displayed	Your order has been cancelled alert will be displayed	Pass

9	MyOrders()	Click on "My orders"	My orders page shall be displayed	My orders page is displayed	Pass
10	Admin Registration	Enter the registration details	Admin login shall be displayed	Admin login is displayed	Pass
11	Admin login	Enter login details	List of received orders shall be displayed	List of received orders will be displayed	Pass
12	addItems()	Click on "Add Items"	Add Item page shall be loaded	Item page will be displayed	Pass
13	myItems()	Click on "MyItems"	MyItems page is loaded	MyItems page is displayed	Pass
14	Orders ()	Click on "AllOrders"	List of orders delivered is displayed	List of orders delivered is displayed	Pass
15	Admin Sign Out	Click on "sign out"	LogOut current shop details from the page and an Admin login page is displayed	Logs Out current details of shop and admin login page is displayed.	Pass
16	User Sign Out	Click on "sign out"	LogOut active user from the page and home page is displayed	Logs Out active user from the page and home page is displayed	Pass

Chapter 7 Results

Snapshots Of Grocery Retailing Application

This section gives the results with the snapshots of the grocery retailing application.

7.1 User Side

7.1.1 User Home:

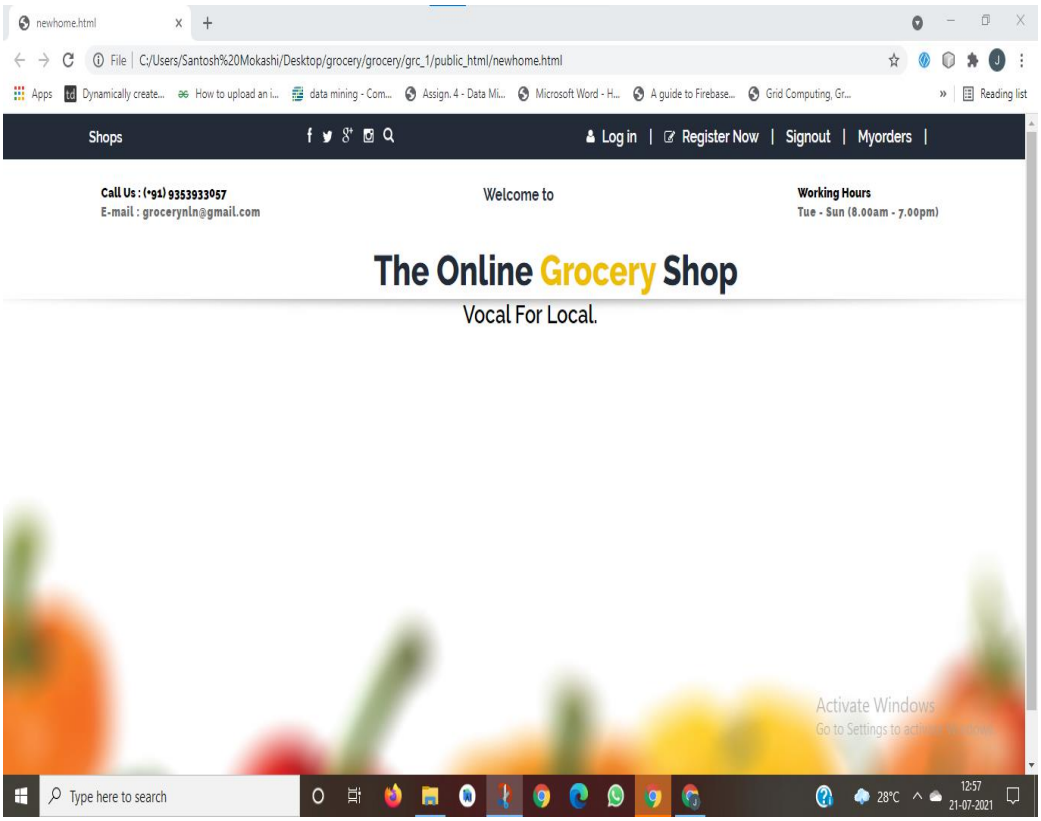


Figure 7.1.1 User Home Before Login

7.1.2 User Login Page:

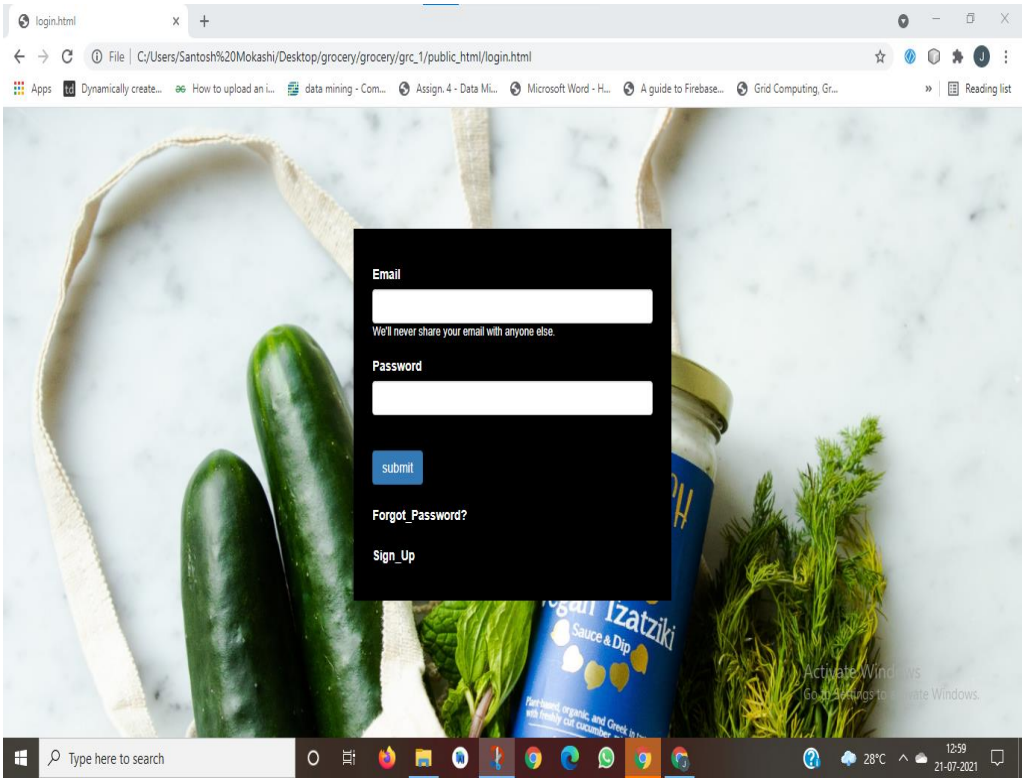


Figure 7.1.2 Login Page

7.1.3 User Signup Page:

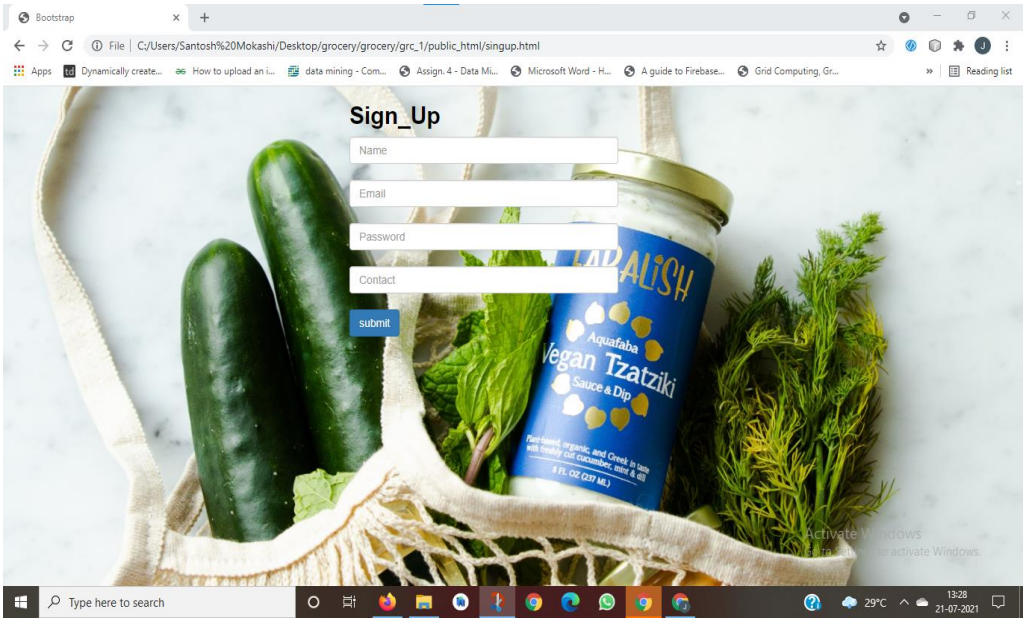


Figure 7.1.3 Signup Page

7.1.4 User Home Page After Login:

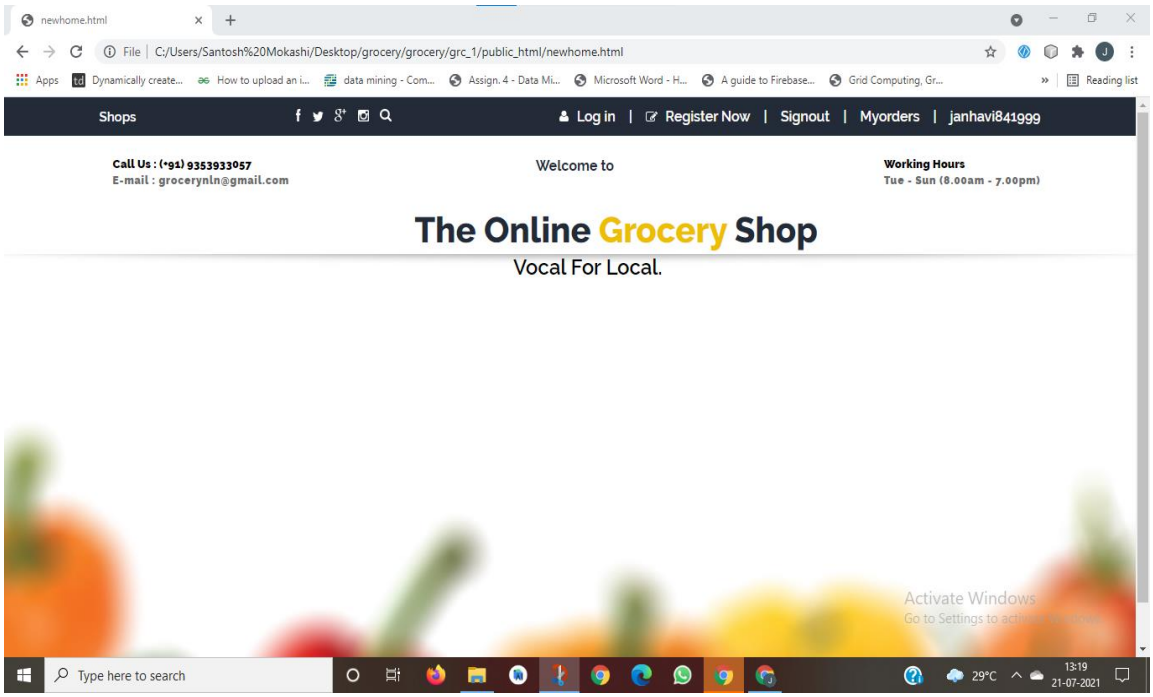


Figure 7.1.4 Home page after login

7.1.5 Shops:

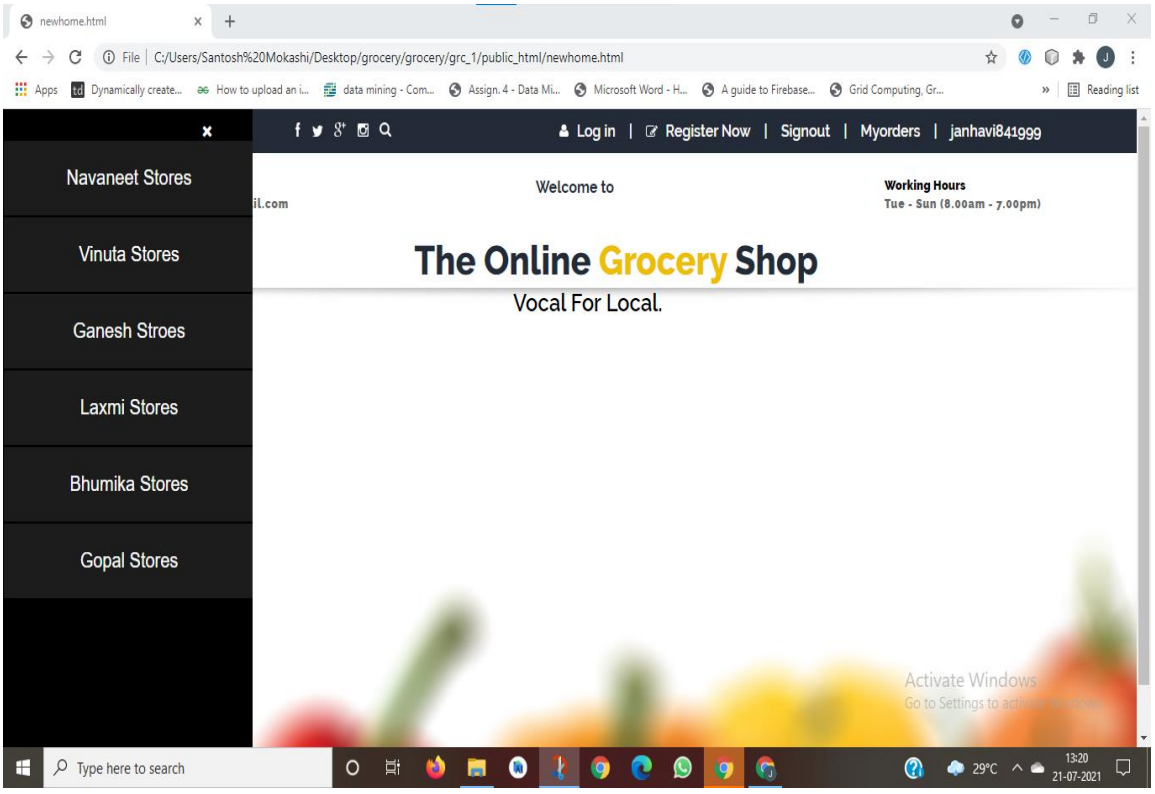


Figure 7.1.6 Shop list

7.1.6 Store Items:

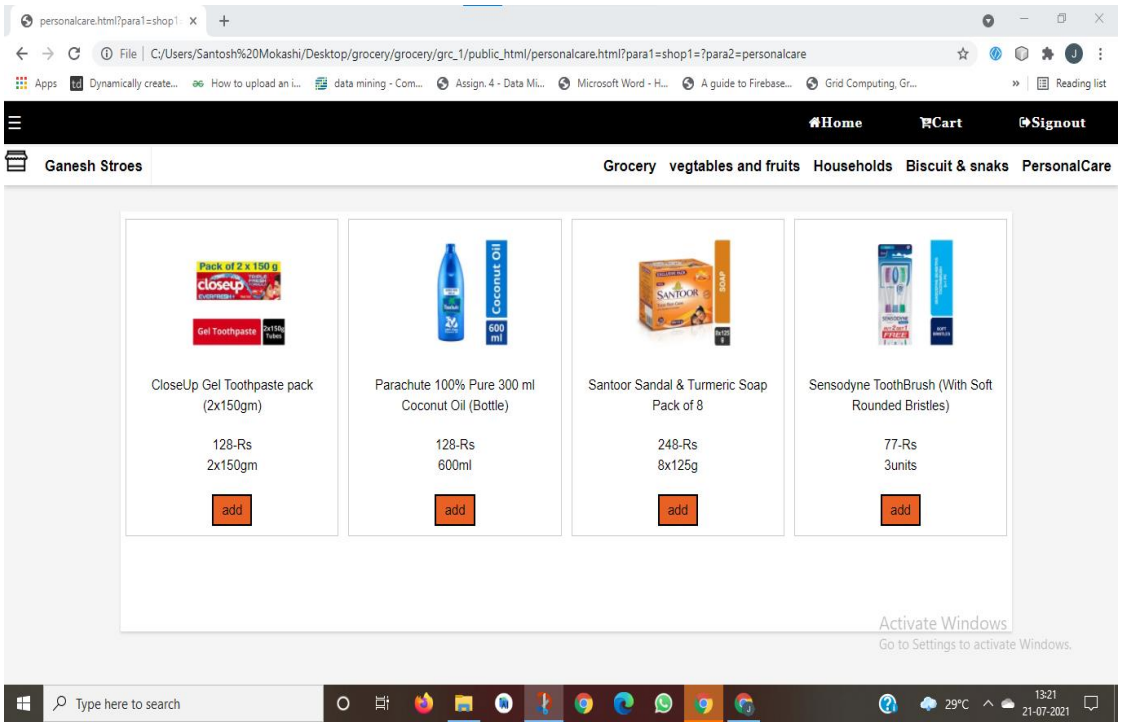


Figure 7.1.6 Items in store

7.1.7 Cart Items:

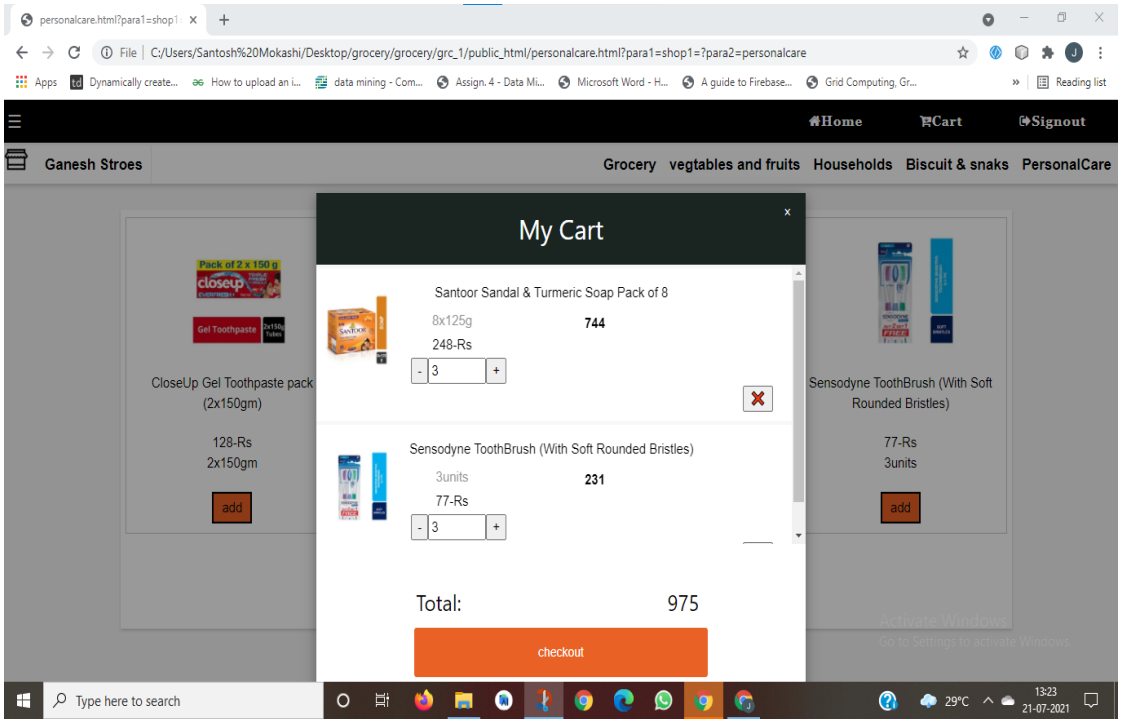


Figure 7.1.7 Cart items

7.1.8 Place or Cancel Order:

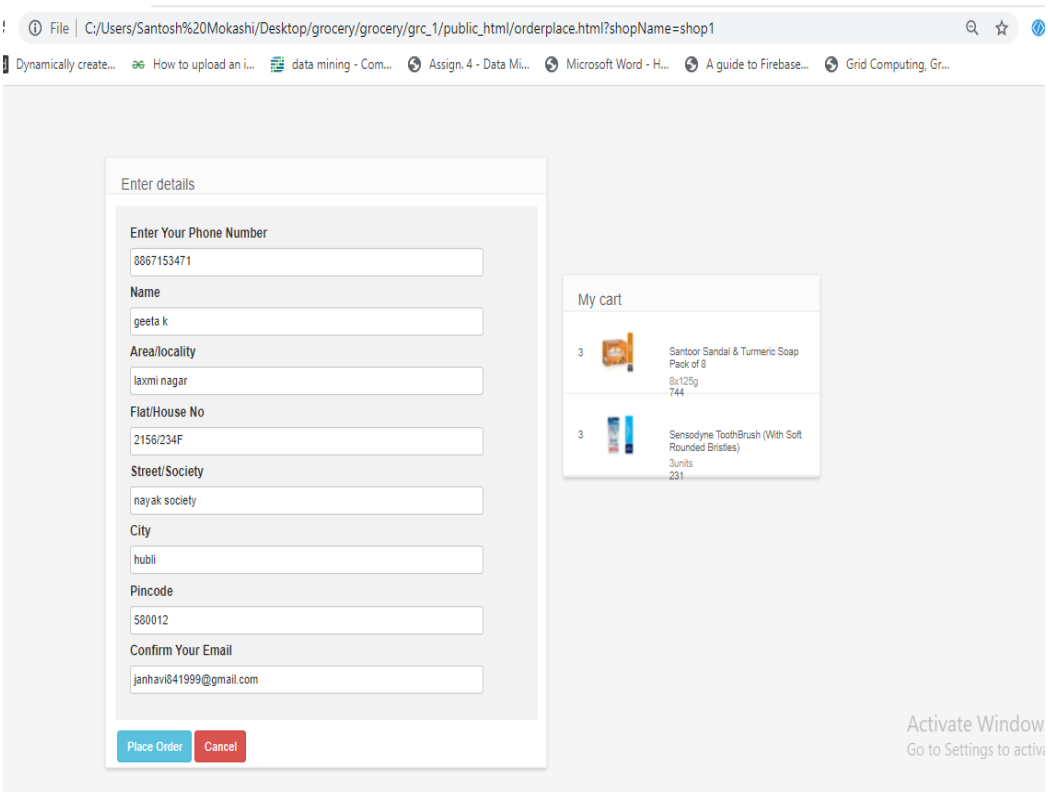


Figure 7.1.7 Place/Cancel order

7.1.8 Order Confirmation:

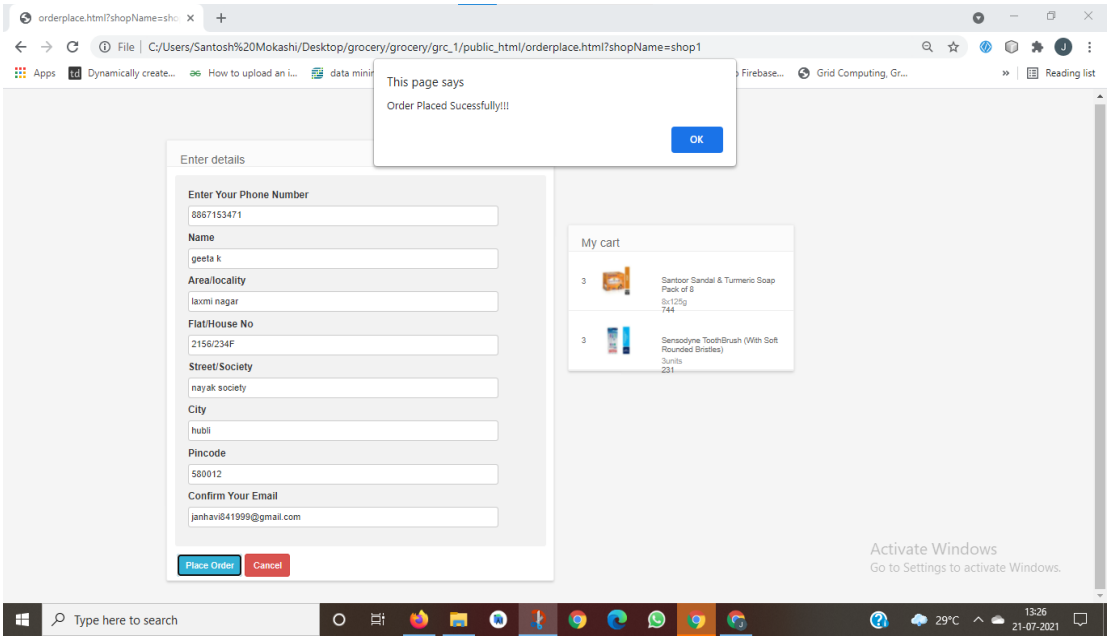


Figure 7.1.8 order confirmation

7.1.9 User All Orders:

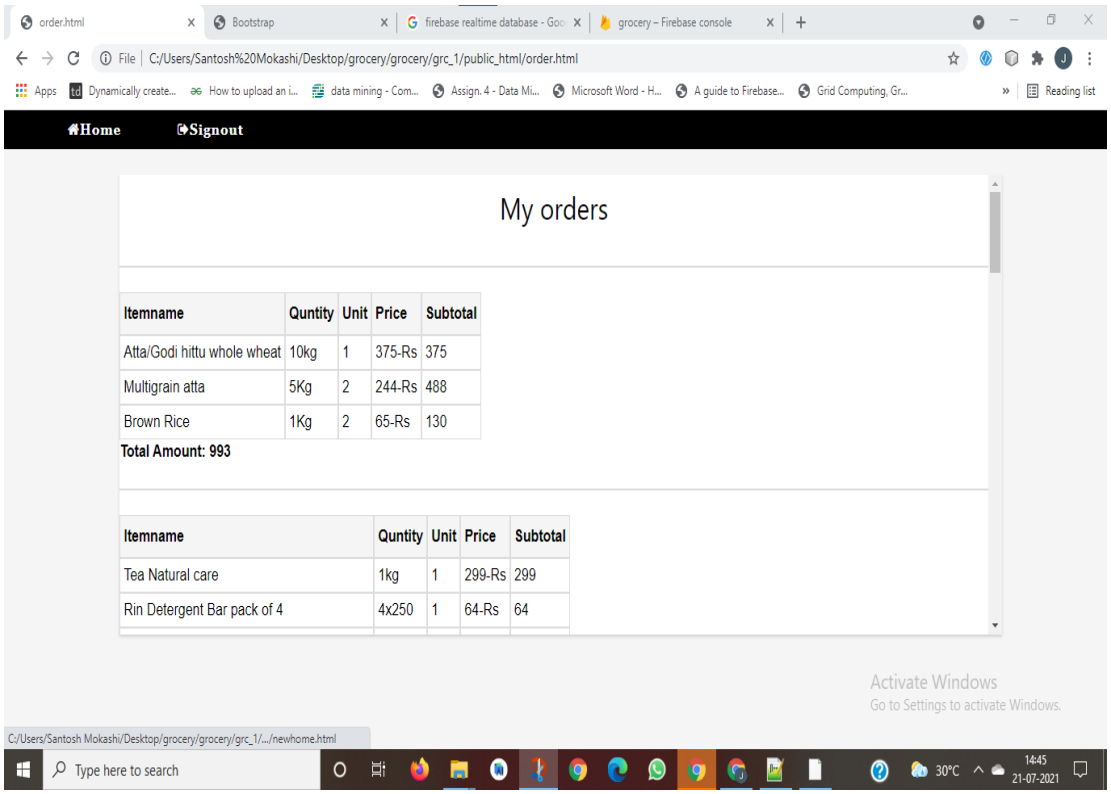


Figure 7.1.9 order confirmation

7.1.10 User Sign out:

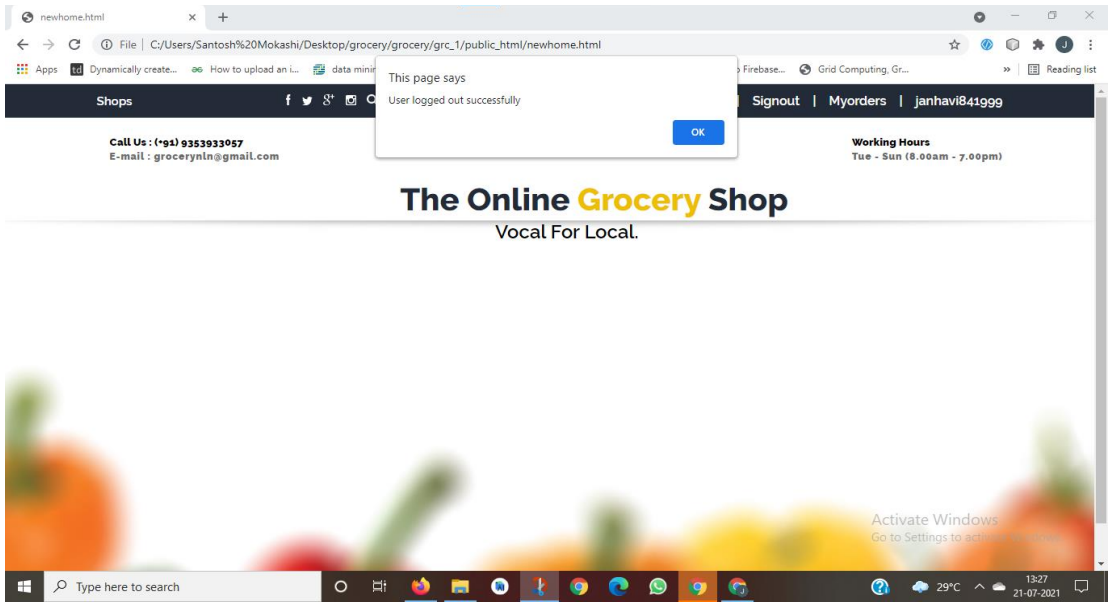
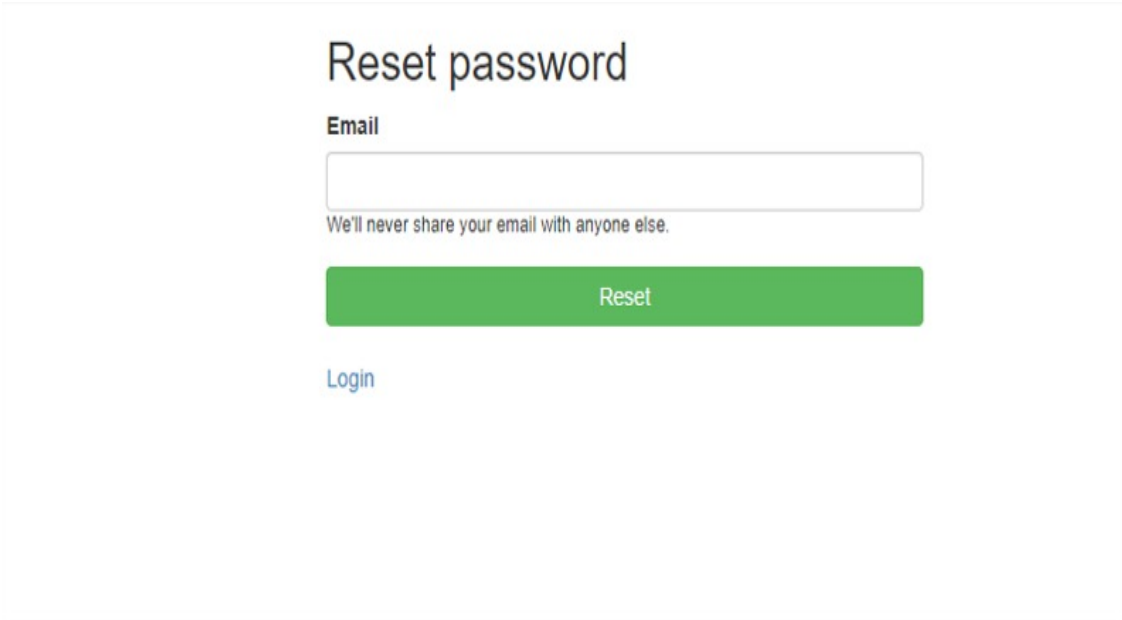
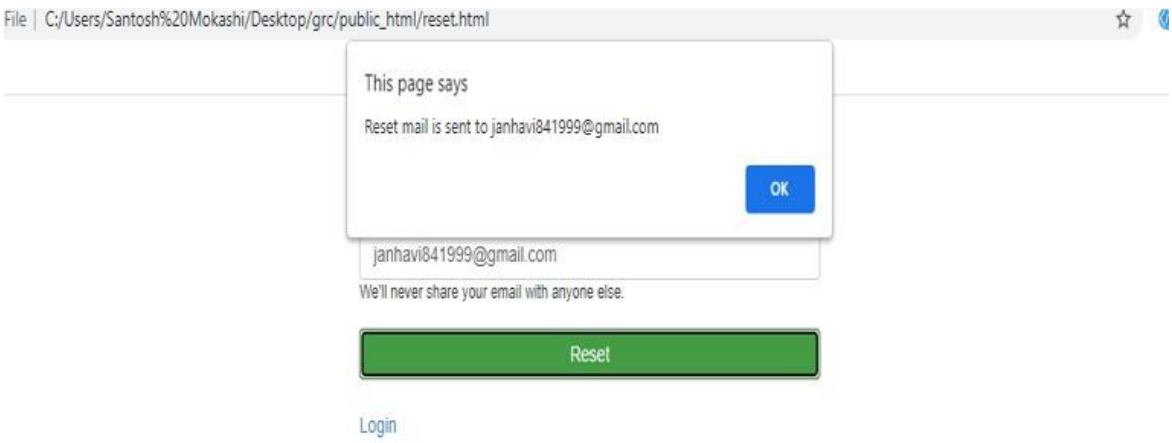


Figure 7.1.9 Order Confirmation

7.1.11 Forgot Password:


Reset password
Email
We'll never share your email with anyone else.
Reset
Login


File | C:/Users/Santosh%20Mokashi/Desktop/grc/public_html/reset.html
This page says
Reset mail is sent to janhavi841999@gmail.com
OK
janhavi841999@gmail.com
We'll never share your email with anyone else.
Reset
Login

7.2 Vendor Side

7.2.1 Vendor Shop Registration:

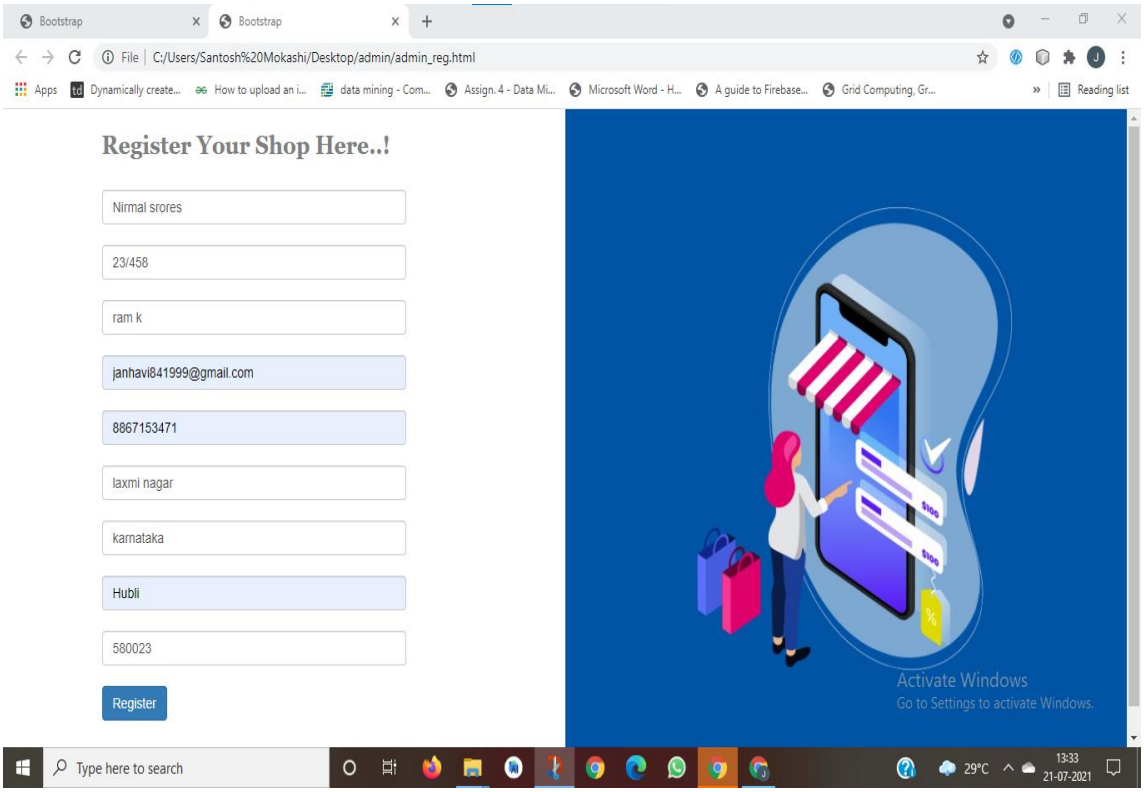
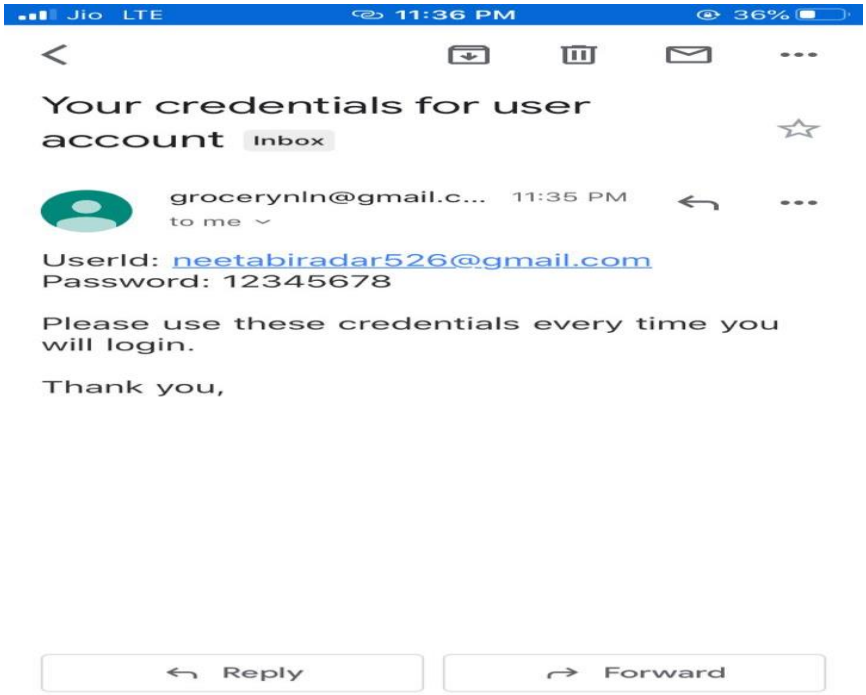


Figure 7.2.1 Shop Registration

7.2.2 User Id and Password Sent to Mail:



7.2.3 Vendor Login:

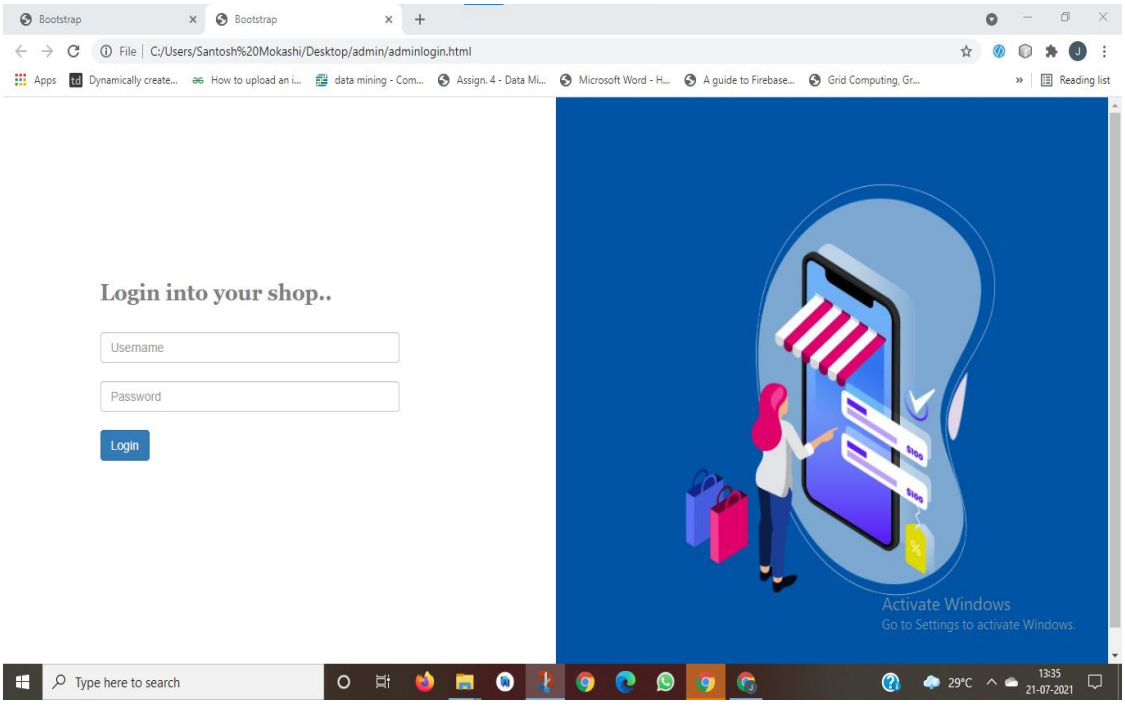


Figure 7.2.3 Shop Login

7.2.4 Vendor Dashboard:

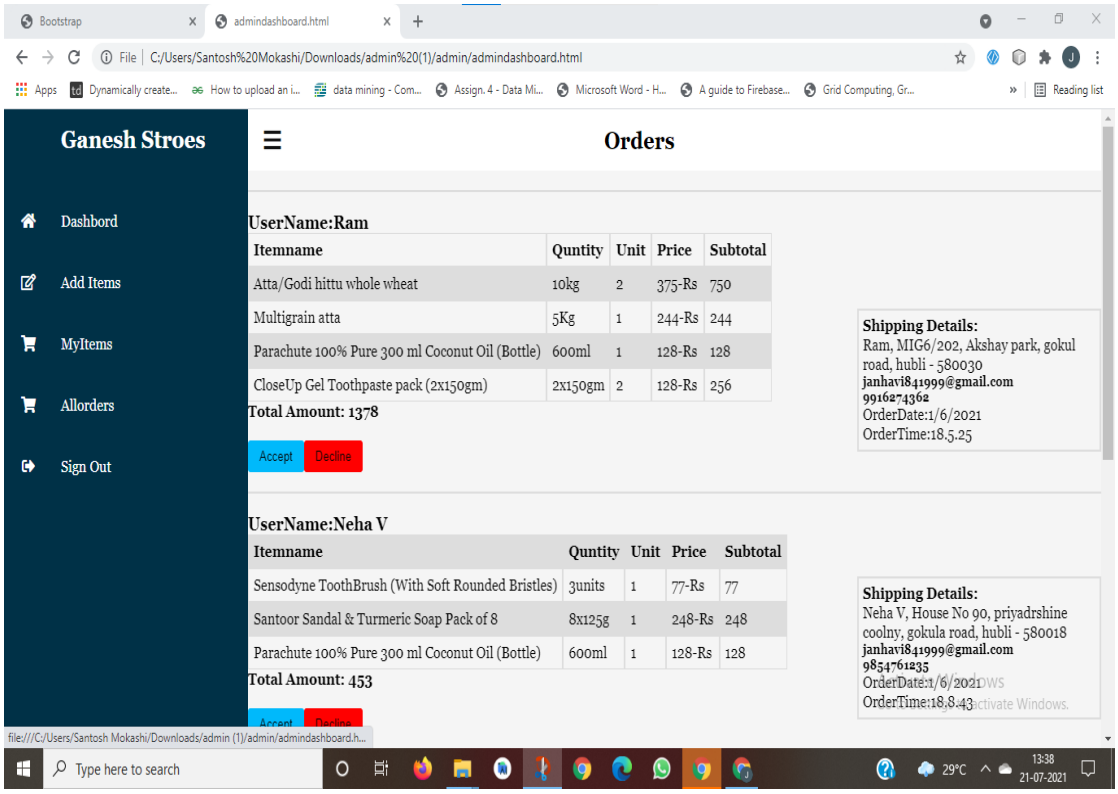
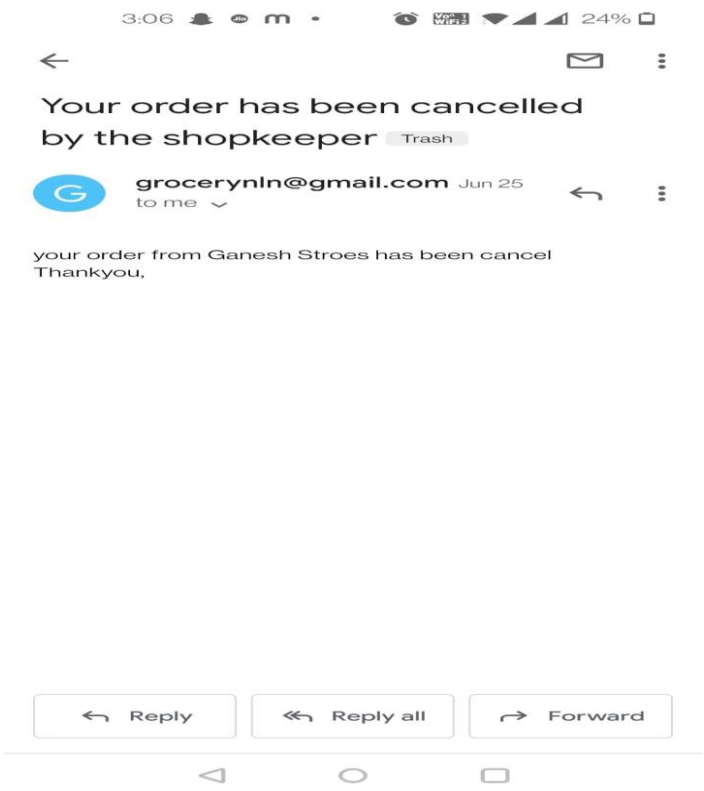
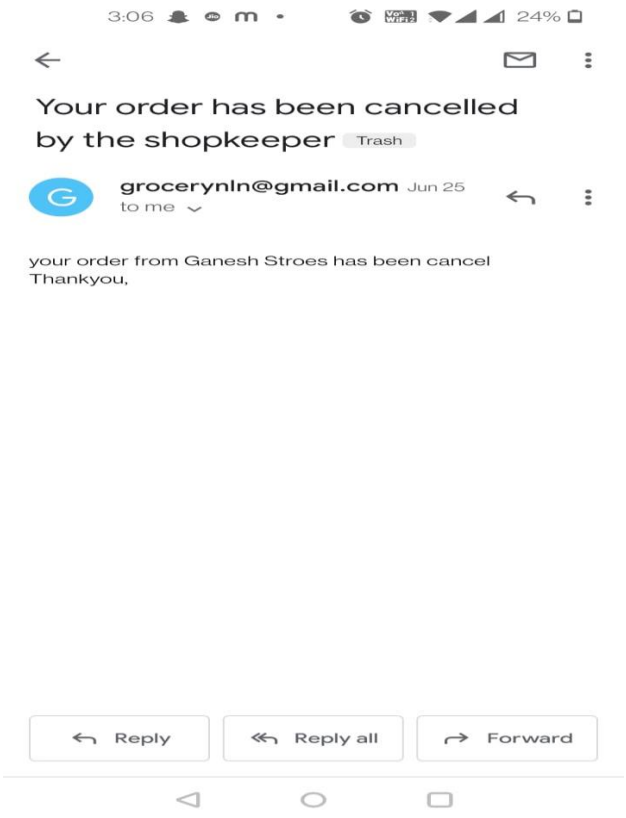


Figure 7.2.4 Dashboard

7.2.5 Accept and Decline Mail Sent To Customer:





7.2.6 Add Items to Shop:

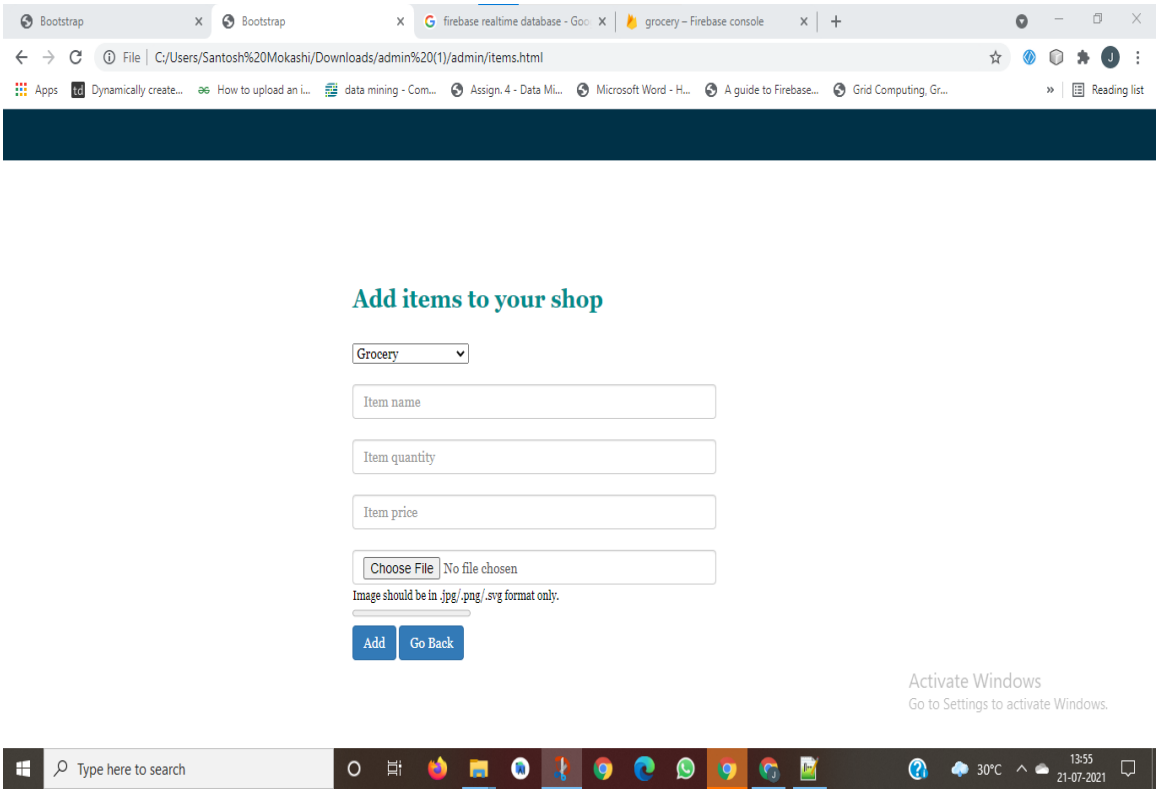


Figure 7.2.6 Add Items to Shop

7.2.7 All Order:

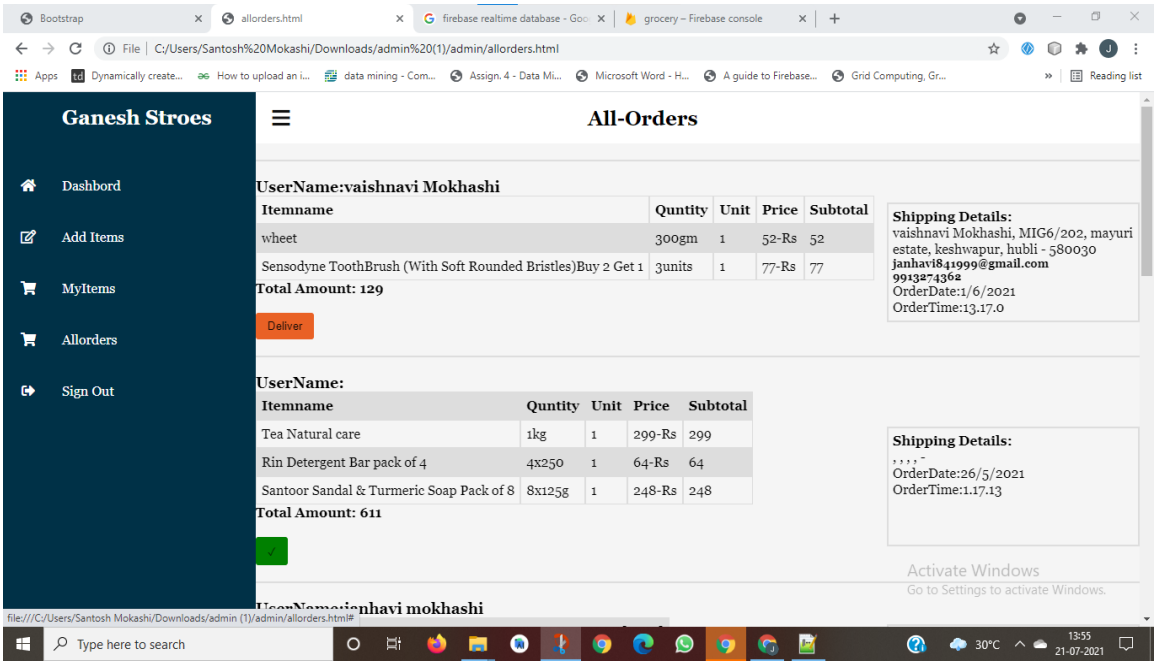
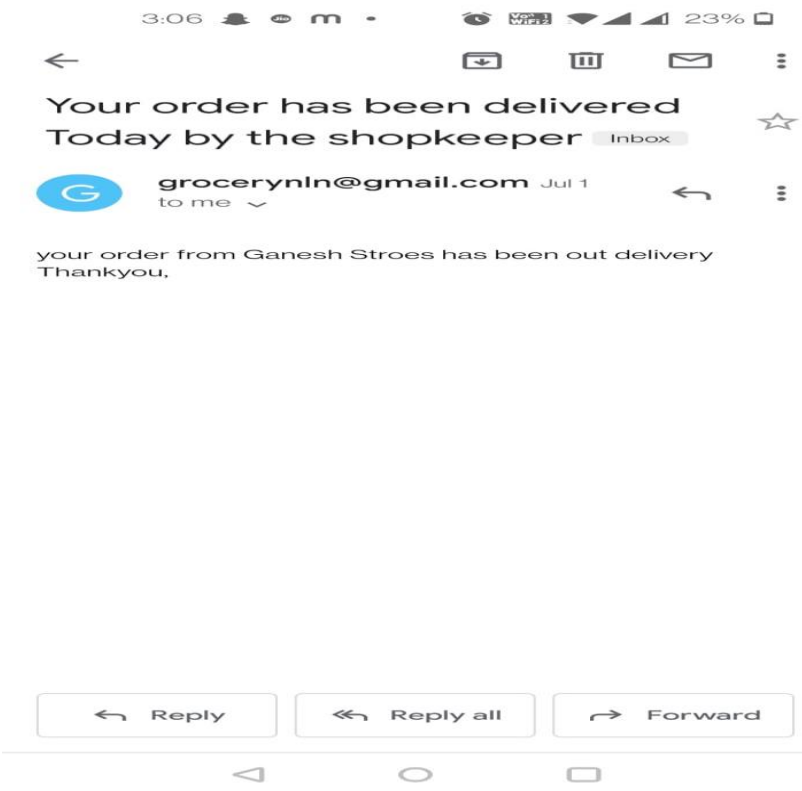


Figure 7.2.7 All Orders

7.2.9 Out for Delivery Mail Sent to Customer:



7.2.9 Sign-out:

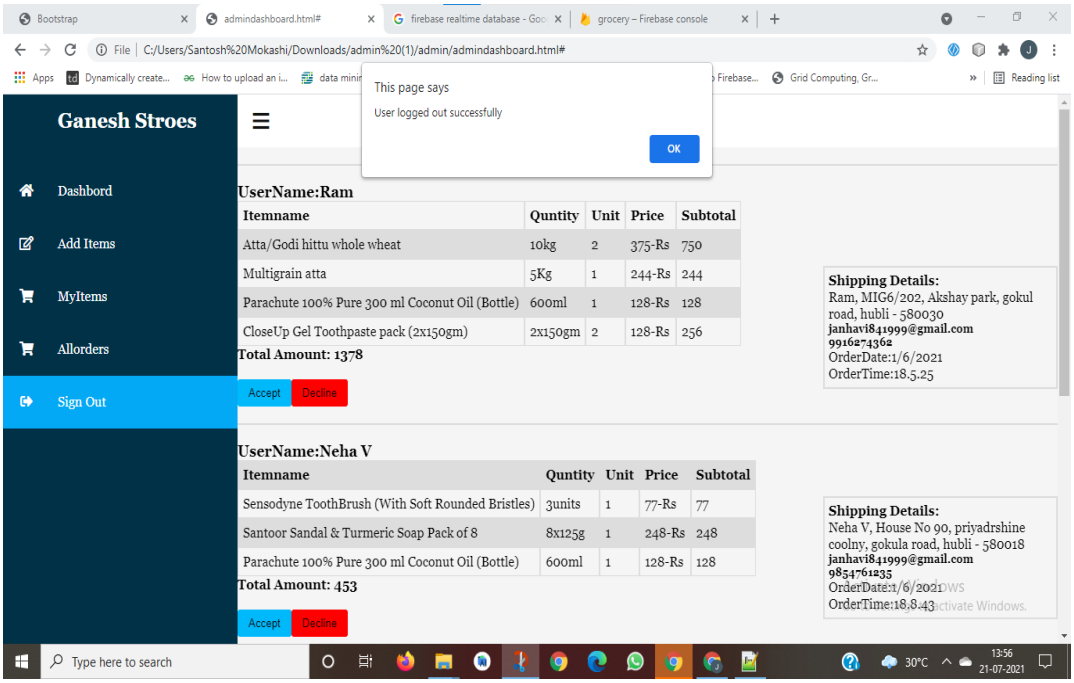


Figure 7.2.9 Sign-out

Chapter 8 Conclusion and Scope for Future Work

8.1 Conclusion

The Grocery Retailing Application is web portal which provides platform for small-scale retail shops to improve their business by registering their shops in the application and receive orders from the customers. In this busy day to day life, customers can't visit shops to buy grocery, so Grocery Retailing Application makes it easy for such customers by reducing the overhead of going to shop and also avoiding the crowd and social gathering in this covid pandemic situation. This application would also help in maintaining the order summary and customer details for a longer period of time. It will be also helpful for small shop owners by elevating their grounds in the market in terms of business, helping them to tackle any uncertain situations.

8.2 Scope for Future Work

In future, the application can be developed using Android and iOS and can be extended to entire district by covering all small vendors.

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Appendices

Software Tools Used

Firebase Real-time Database

The Firebase Real-time Database is a cloud-hosted database. Store and sync data with our No-SQL cloud database. Data is stored as JSON and synchronized in real-time to every connected client. Data is synced across all clients in real-time, and remains available when your app goes offline. The Firebase Real-time Database lets you build rich, collaborative applications by allowing secure access to the database directly from client-side code. Data is persisted locally, and even while offline, real-time events continue to fire, giving the end user a responsive experience. When the device regains connection, the Real-time Database synchronizes the local data changes with the remote updates that occurred while the client was offline, merging any conflicts automatically.

Microsoft Visual Studio

Microsoft Visual Studio is an integrated development environment from Microsoft. It is used to develop computer programs, as well as websites, web apps, web services and mobile apps.

Net-Beans IDE

Net-Beans IDE is a free and open-source integrated development environment for application development on Windows, Mac, Linux, and Solaris operating systems. The IDE simplifies the development of web, enterprise, desktop, and mobile applications that **use** the Java and HTML5 platforms.

JavaScript

JavaScript is a lightweight, interpreted **programming** language. It is designed for creating network-centric applications. It is complimentary to and integrated with Java. **JavaScript** is very easy to implement because it is integrated with HTML. It is open and cross-platform.