IN PARTNERSHIP WITH PLYMOUTH UNIVERSITY

Name: **Group A 53**
Student Reference Number:

Module Code: **PUSL2024**	Module Name: **Software Engineering 2**

Coursework Title: **Green Supermarket Website Project Report**

Deadline Date: **31/12/2023**	Member of staff responsible for coursework: **Mr. Pramudya Thilakaratne**

Programme:

Please note that University Academic Regulations are available under Rules and Regulations on the University website www.plymouth.ac.uk/studenthandbook.

Group work: please list all names of all participants formally associated with this work and state whether the work was undertaken alone or as part of a team. Please note you may be required to identify individual responsibility for component parts.

Plymouth ID	Name (As appeared on DLE)	Contributed Section
10898536	Henaka Kumara	Introduction and Sample of development system with explanation of the functionality
10908162	Horagala Piyumani	Identified processes in ABC cinema
10898502	Shakya Jayathilaka	Use case diagram
10749144	Kaluthanthiri Patabadi	Class diagram and ER diagram
10898467	Tharushi Galappaththi	Sequence diagram
10898438	Jayasundara Dasumi	References

We confirm that we have read and understood the Plymouth University regulations relating to Assessment Offences and that we are aware of the possible penalties for any breach of these regulations. We confirm that this is the independent work of the group.
Signed on behalf of the group:

Individual assignment: ***I confirm that I have read and understood the Plymouth University regulations relating to Assessment Offences and that I am aware of the possible penalties for any breach of these regulations. I confirm that this is my own independent work.***
Signed :

Use of translation software: failure to declare that translation software or a similar writing aid has been used will be treated as an assessment offence.
I *have used/not used translation software.
If used, please state name of software……………………………………………………………………

Overall mark _____%   Assessors Initials _____   Date_____

*Please delete as appropriateSci/ps/d:/students/cwkfrontcover/2013/14

Table of Contents

a. Introduction to the Scenario

1.1. Overview

Green Mart has been a stalwart in the supermarket industry, renowned for its commitment to quality, expansive product offerings, and customer-centric approach. Over the years, its exponential growth has been a testament to its dedication to meeting consumer needs. However, the digital aspect of its operations, particularly the website, has lagged. This discrepancy has become increasingly apparent as consumer expectations evolve rapidly. With the website being a pivotal touchpoint for customers, its outdated state presents a substantial hurdle. The project aims to bridge this gap by orchestrating a comprehensive revitalization, infusing the website with modern functionalities essential for delivering a superior user experience and maintaining competitiveness in a dynamic market.

1.2. Background Study

A detailed retrospective analysis of Green Mart's journey from its inception to its current stature reveals a trajectory characterized by innovation and adaptability. Despite this, the digital landscape has undergone significant metamorphosis. Shifts in consumer behavior, the proliferation of e-commerce, and technological advancements have redefined customer expectations. Meanwhile, the existing website, designed in an earlier era, struggles to cater to contemporary demands for seamless online experiences. This discrepancy necessitates a meticulous examination of the website's limitations within the context of evolving consumer preferences, highlighting the urgency to realign it with modern standards.

1.3. Project Planning

At the core of this project lies the objective of modernizing Green Mart's online interface. The scope encompasses a multifaceted integration of advanced functionalities, including the introduction of online shopping capabilities, efficient handling of online payments, implementation of collision avoidance mechanisms

during online shopping sessions to enhance user experience, real-time visualization of customer feedback for informed decision-making, and the establishment of a robust notification system for purchases and cancellations. To accomplish this, the project strategically adopts Java Swing, JSP, and Servlet technologies for their adaptability, scalability, and seamless integration with existing systems. Resource allocation, including the deployment of skilled personnel, delineation of project timelines, and selection of appropriate tools, forms a crucial aspect of the meticulously crafted project plan, ensuring a successful execution within predefined parameters.

1.4. Purpose

This project assumes paramount significance in fortifying Green Mart's competitive edge within the industry. By rejuvenating the website and incorporating these advanced features, the supermarket endeavors to elevate customer satisfaction, streamline operational efficiencies, and fortify its market positioning. Furthermore, this initiative serves as an integral component of Green Mart's overarching strategic objectives, enabling the establishment of a resilient and adaptive framework that navigates and capitalizes on the ongoing digital transformations, thereby ensuring sustained growth and relevance amidst the rapidly evolving market dynamics.

b. Identified Processes in ABC Cinema

A green supermarket website must be created using a few procedures to guarantee efficiency, sustainability, and a satisfying user experience. The following are the primary steps in creating and managing a website for a green supermarket:

1. **Product Information Management:**
   To effectively update and manage product details, put in place a strong system for managing product information. Provide information on eco-friendly products, such as environmental effect and sustainability certifications, on labels and packaging.

2. **Online shopping Functionality:**
   Include effective and safe e-commerce features for online transactions. Offer a variety of payment choices, including ones that support sustainability principles like environmentally friendly payment options.

3. **Inventory Management:**
   To monitor and control product availability, put in place an inventory management system. Reduce waste and overstock by adjusting inventory levels in accordance with demand.

4. **User Account Management**:
   Provide a safe user account system that enables users to track orders, modify preferences, and build profiles. Urge customers to choose digital receipts and paperless transactions.

5. **Order Fulfillment and Delivery:** -
   Establish an environmentally friendly order fulfillment procedure that uses effective packaging and shipping techniques. Provide environmentally friendly delivery choices, such bike or electric car deliveries.

6. **Sustainability Tracking**:
   Include instruments, such as carbon footprint estimates, to quantify and monitor the supermarket's environmental effect. Post your website's sustainability objectives and accomplishments to draw visitors.

7. **Marketing and Communication:**
   Create a content strategy that emphasizes the supermarket's dedication to sustainability. Make use of the website as a venue to inform consumers about environmentally responsible behaviors and to advertise eco-friendly goods.

8. **Feedback and Enhancement:**
   Establish a mechanism for collecting client feedback and recommendations. Make use of user feedback to boost sustainability initiatives, adjust to changing client preferences, and continuously improve the website.

9. **Energy Efficiency and Hosting:**
   Select a hosting company that places a high value on renewable energy sources and energy efficiency. Improve website efficiency to use less energy when users are interacting with it.
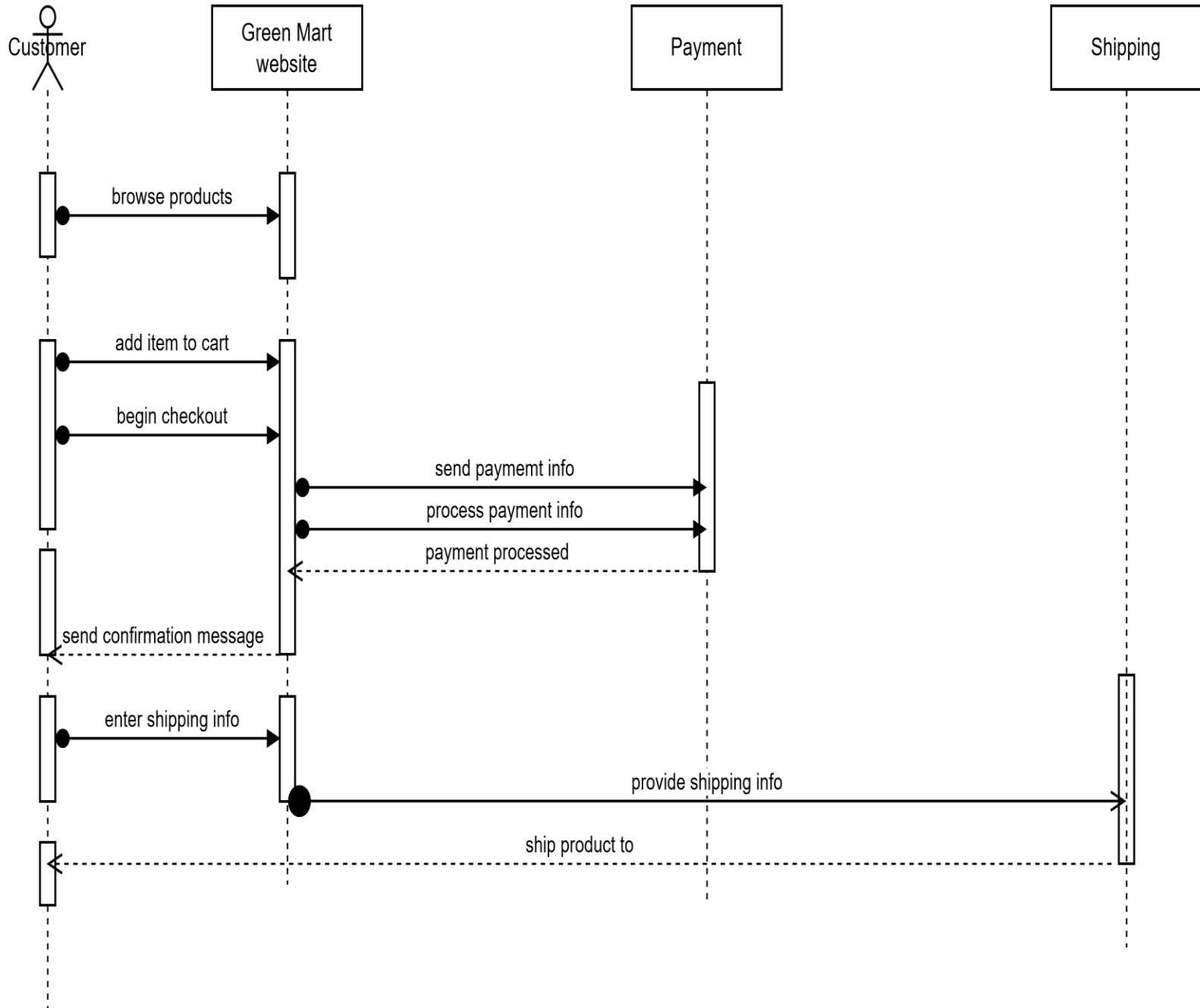
c. Use Case Diagram

Green Mart

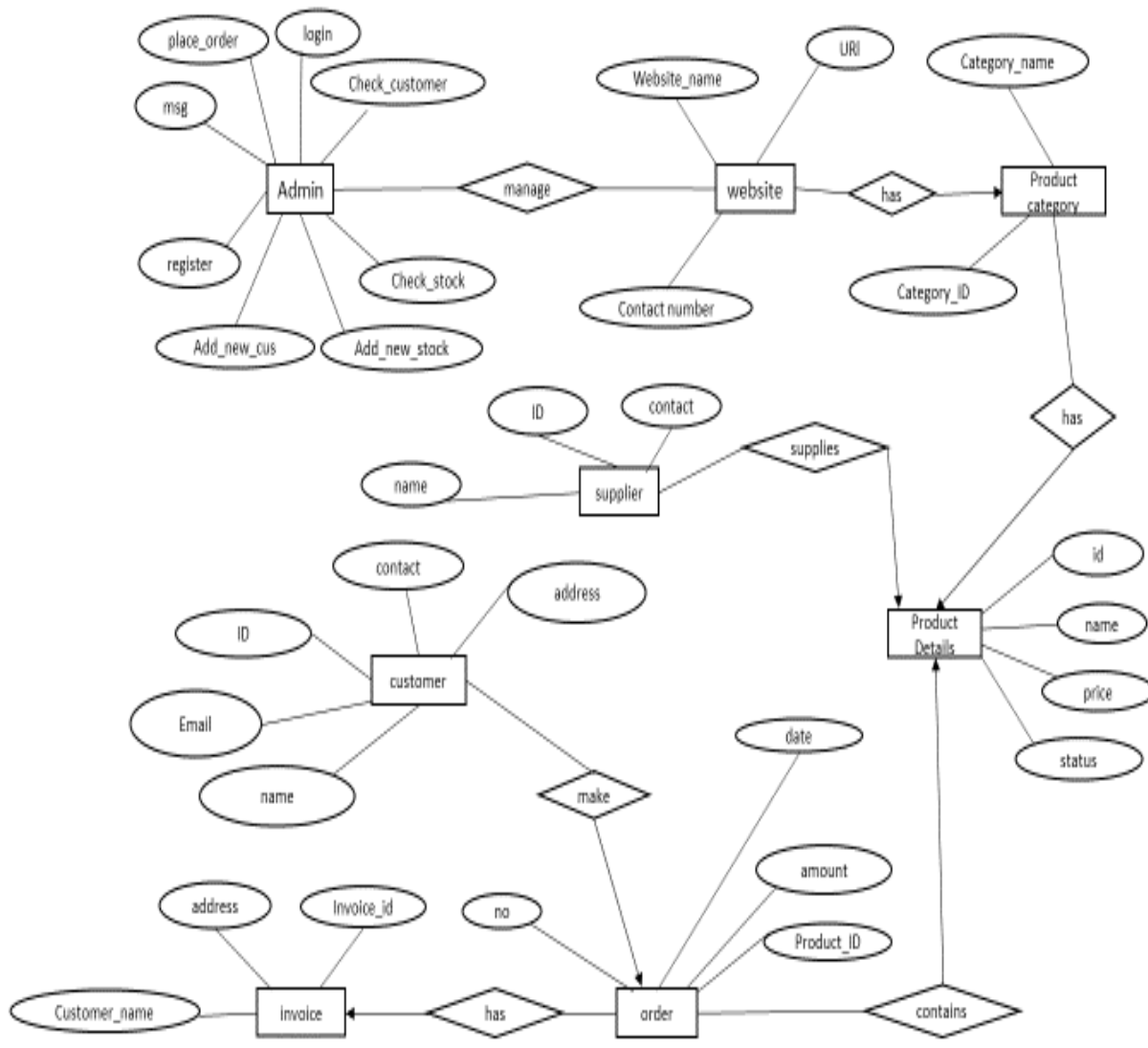Register --Include--> Successful

Register --Extend--> Failed

Login --Include--> Successful

Login --Extend--> failed

Customer

Admin

Add product

View product

Select product

Make payment

Preparing invoice

Notification

Feedback

d. Class Diagram

User

- UserId
- UserName
- DOB
- UsermobileNo
- UserPassword
- UserAddress
- USerEmail

- + Register( )
- + Login( )
- + Browseproducts( )
- + Addtocart( )
- + Checkout( )

product

- productid
- name
- price

cart

- cartId
- items
- totalamount

+ Display info ( )

payment

- paymentID
- amount
- paymentstatus

- + processpayment( )

Notification

+ Sendmail ( )

Admin

- adminid
- username
- password

- + addproduct( )
- + removeproduct( )
- + vieworders( )
- + genarateReport( )
- + UpdateItems( )

Order

- orderId
- orderdate
- status
- totalamount
- customer
- products

- + calculatetotal( )
- + addItem( )
- + removeItem( )
- + placeorder( )

invoice

- invoiceID
- issucedata
- duedata
- amountdue
- order

- + genarateinvoice( )
- + sendinvoice( )

e. Sequence Diagram

Customer   Green Mart website   Payment   Shipping

browse products

add item to cart

begin checkout

send paymemt info

process payment info

payment processed

send confirmation message

enter shipping info

provide shipping info

ship product to

f. ER Diagram

g. Samples of Development System

7.1. First Impression

The first appearance of Green Mart website is as below. Here the user can first see categories, about us, contact us, Search Product, Forget Password, Register, Login and all the Product here.
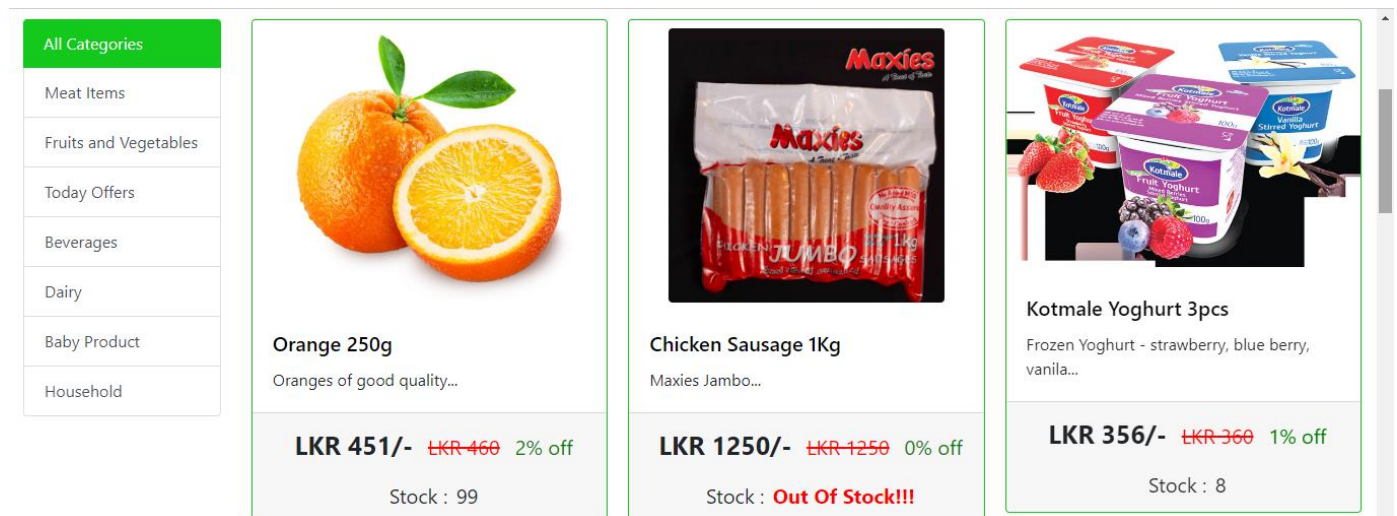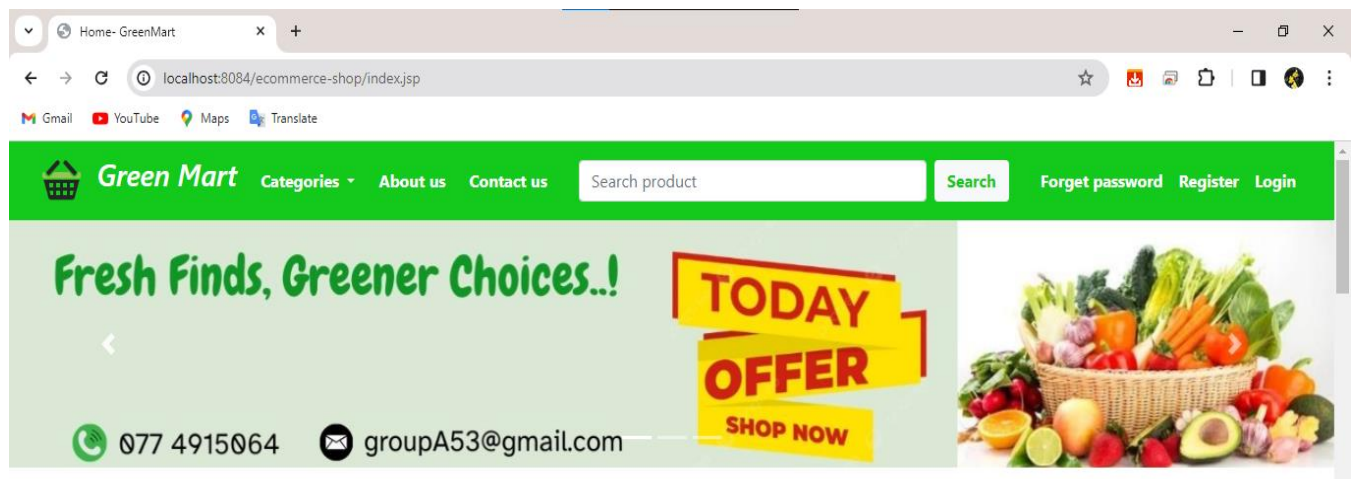
Leeks 1Kg

Fresh Vegetable...

LKR 431/- ~~LKR 440~~ 2% off

Stock : 12

Highland Milk 250ml

Sterilized Flavored Milk...

LKR 198/- ~~LKR 225~~ 12% off

Stock : 18

Anchor 400g

Milk Powder...

LKR 1026/- ~~LKR 1080~~ 5% off

Stock : **Out Of Stock!!!**

Stock : 58

Stock : 40

Carrot 1Kg

Fresh and eat...

LKR 451/- ~~LKR 480~~ 6% off

Stock : 50

Speed Water bottle 500ml

speed is winning brand in sri lanka...

LKR 115/- ~~LKR 115~~ 0% off

Stock : 100

Sunlight 2in1 1Kg

Lavender Fragrance...

LKR 323/- ~~LKR 430~~ 25% off

Stock : 97

7.2. Register page

Users can click on the register button on the home page and fill in the form and register.

7.3. Login page

7.4. Categories Display page
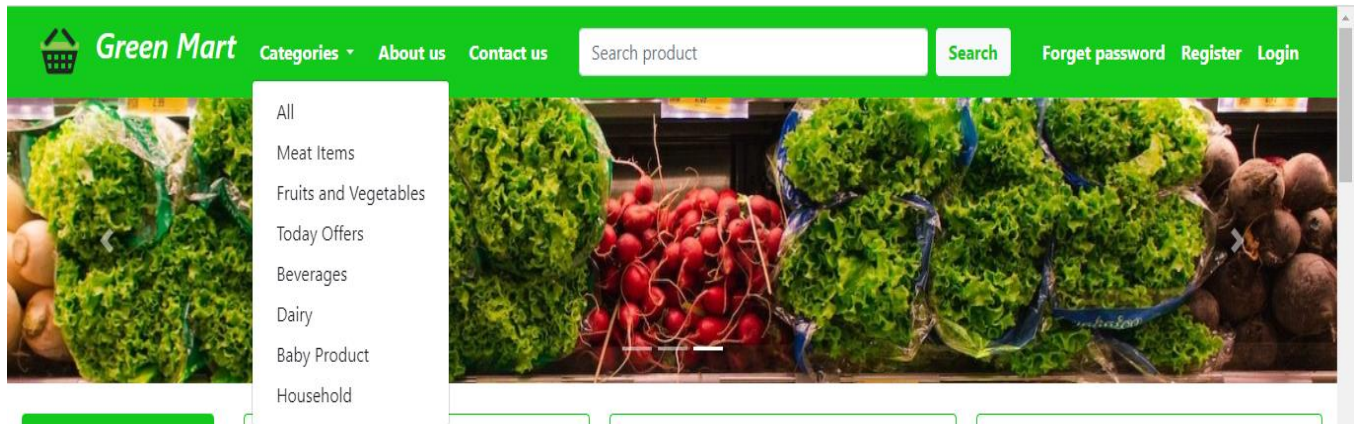
7.5. About us page
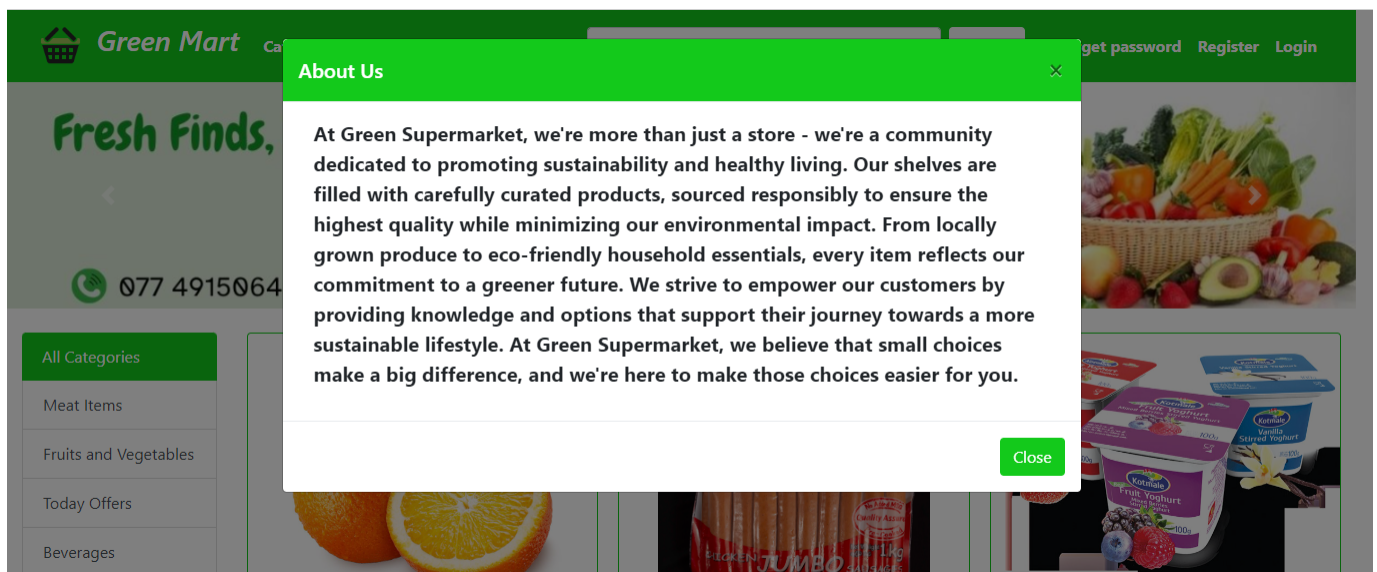
7.6. Contact us page
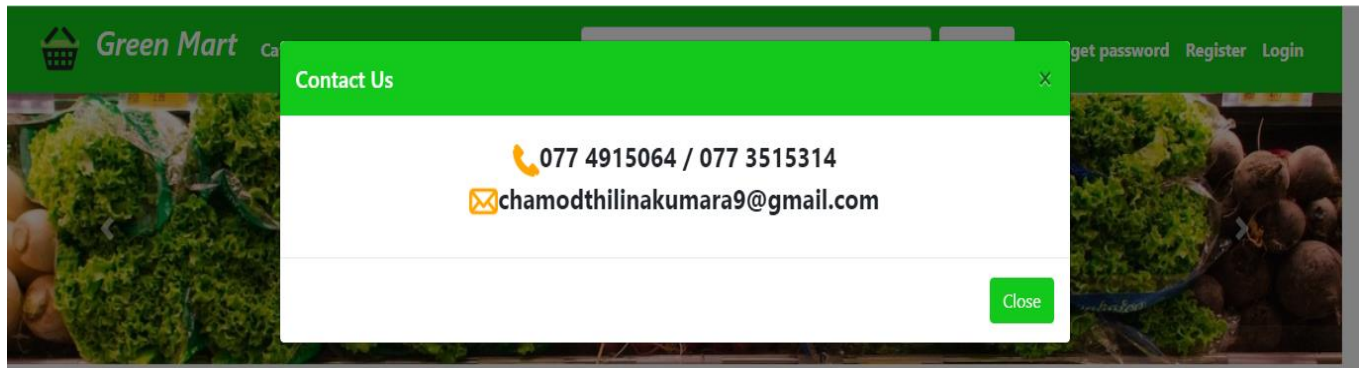
7.7. Forget Password

If a registered user forgets his password, he can go to the forget password option and create a password by entering his mail.
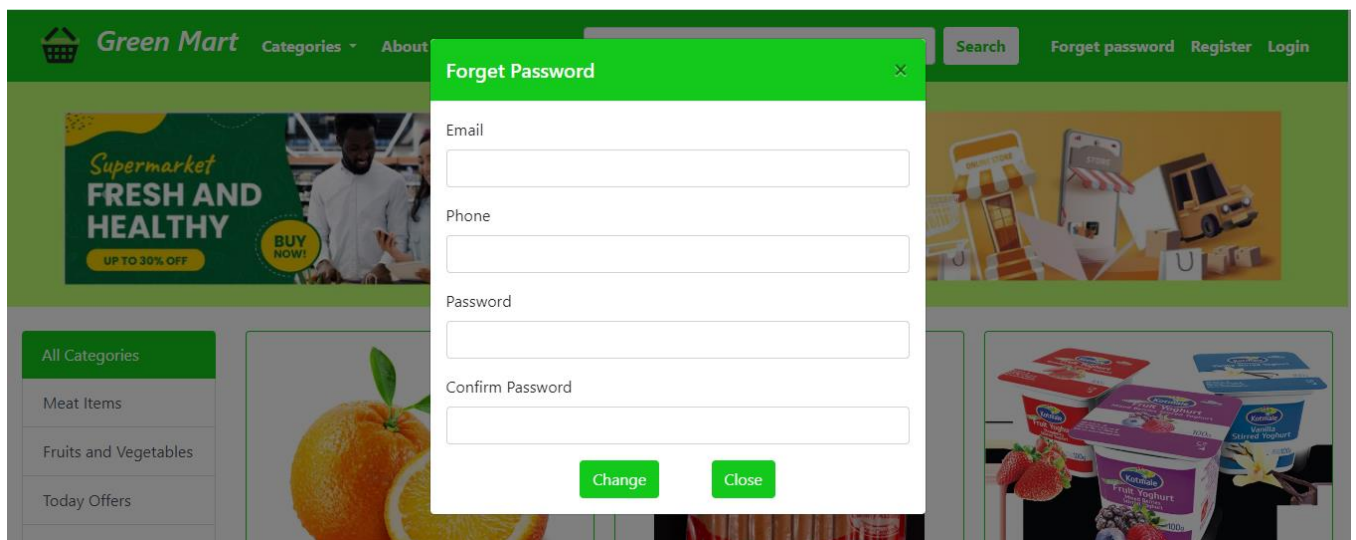
7.8. User Dashboard

When a user logs into the site, a dashboard will display to him as mentioned below.

7.9. User Profile

By clicking his name on the dashboard, the user can view his profile.
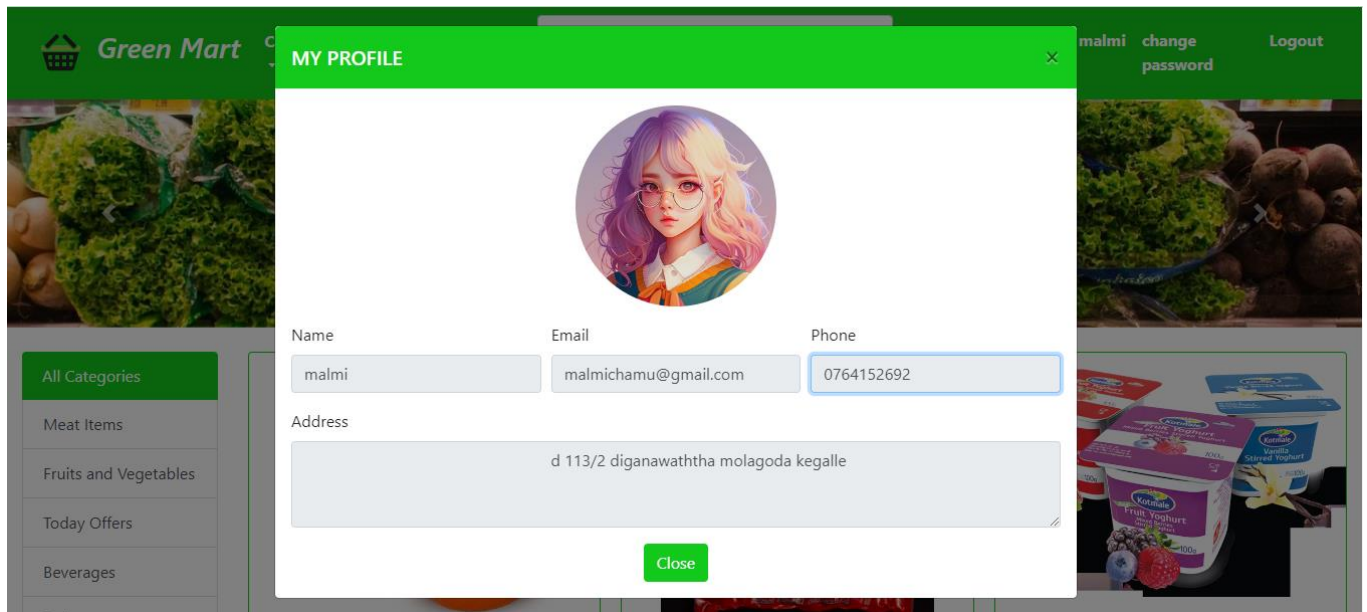
7.10. How does a customer purchase items ??

- First, the customer must select the Item to purchase and click on it.
- Then select the required quantity and click the " Add To Cart " button.

- After that, when the user goes to the cart, the item has been added to the cart. And you have to click the "Oder" button there.

- Now you will be redirected to the payment page. Then select your payment method from there and click "continue to review order"

- Then check your details and click the "pay now" button.

Please Review Before Paying

Transaction Details:

Description:	Ecommerce
Subtotal:	1096.00USD
Shipping:	40.00USD
Tax:	10.00USD
Total:	1146.00USD

Payer Information:

First Name:	thasila
Last Name:	nimesha
Email:	thasila@gmail.com

Shipping Address:

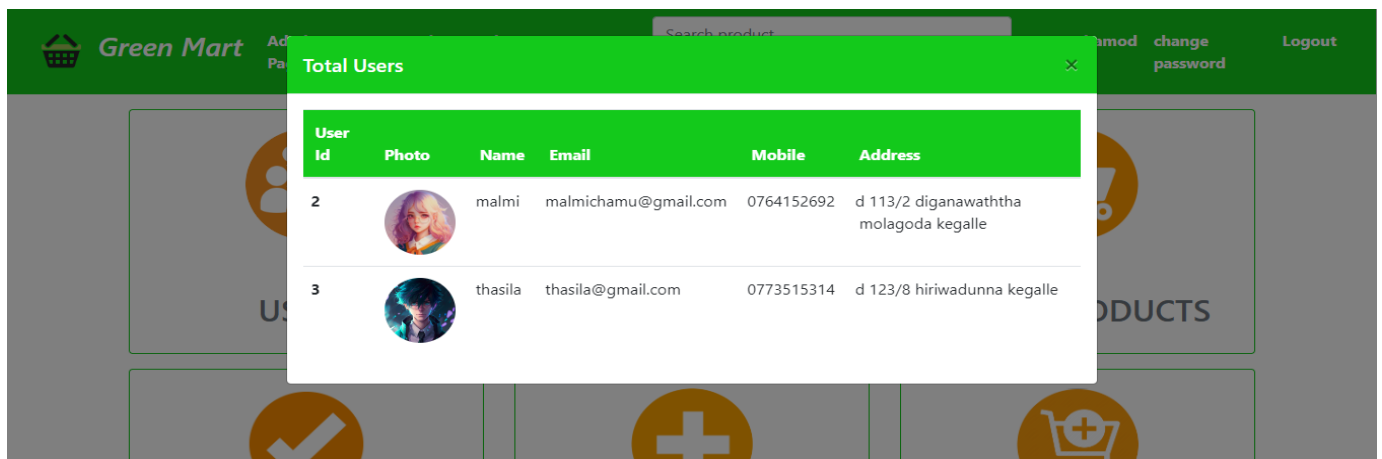|	
Recipient Name:	thasila nimesha
Address:	1 Main St
City:	San Jose
State:	CA
Country Code:	US
Postal Code:	95131

Pay Now

- After following these steps, you will be successful in buying your items.

7.11. Admin page

- Admin page has a few unique options.

    Ex;- 1. View users

    2. Total category and total product

    3. Total Orders

    4. Add Category and Add Products
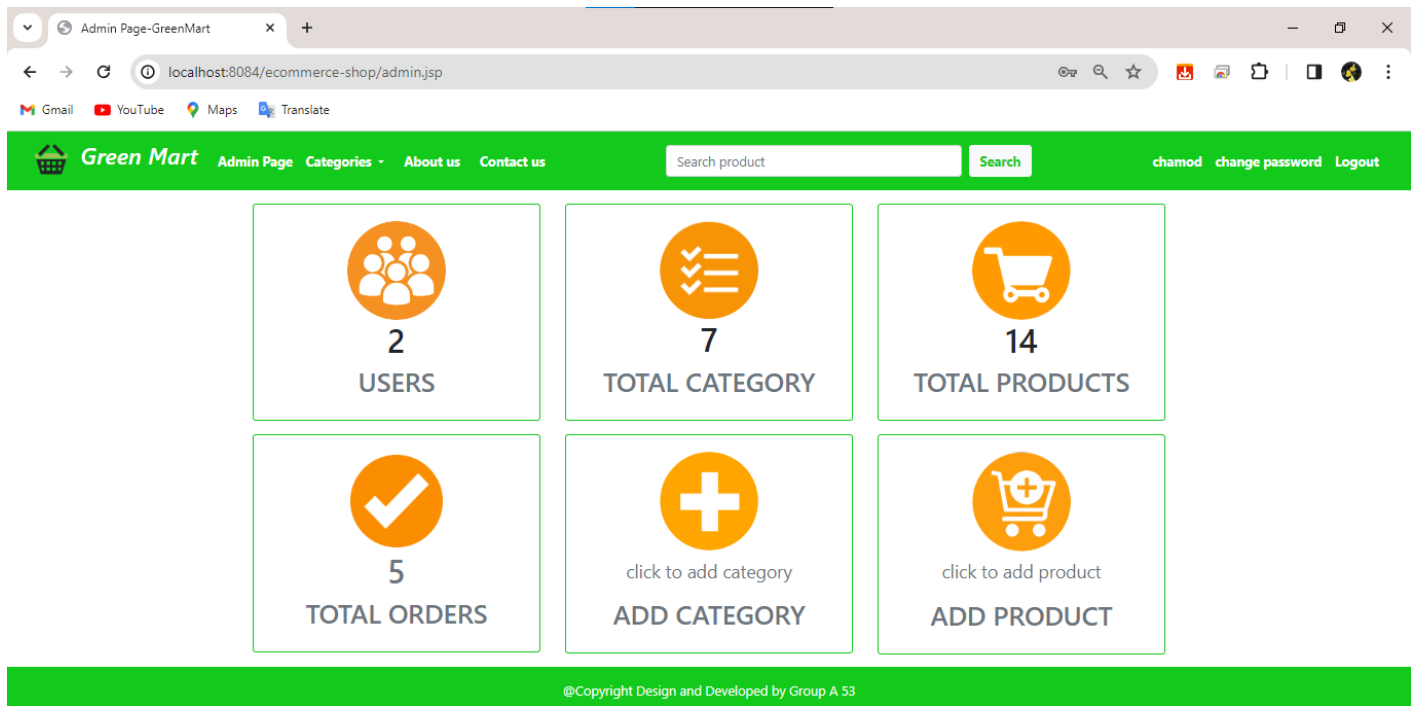
- View Users

- Total Category

- Total Products

- Total Orders

User Id	User Name	User Email	User Phone	Product Image	Product Title	Qnty	Price	Ord. date	Del. date	Set Delivery date
3	thasila	thasila@gmail.com	0773515314		Orange 250g	1	451	2023-12-22	2023-12-28	Delivery / Set
3	thasila	thasila@gmail.com	0773515314		Coca-Cola 2L	2	720	2023-12-22	2023-12-28	Delivery / Set
2	malmi	malmichamu@gmail.com	0764152692		Sunlight 2in1 1Kg	3	969	2023-12-22	2023-12-28	Delivery / Set

- Admin can add new Category and remove existing category.

Fill category details.

Enter Category Title here

Enter Category Description here

Add Category   Close

US   DUCTS

product

TOTAL ORDERS   ADD CATEGORY   ADD PRODUCT

- Admin can add product by clicking add product in admin dashboard, enter the details and click "add product".

Add Product details.   ✕

Enter Product Title here

Enter Product Description here

Enter Product Price here

Enter Product Quantity here

Enter Product Discount in (%)

Select Category

Select Product Pic

Choose File No file chosen

Add Product Close

- Finally, Admin can delete and update the products on the site.

Green Mart Admin Page Categories About us Contact us Search product Search chamod change password Logout

All Categories

Meat Items

Fruits and Vegetables

Today Offers

Beverages

Dairy

Baby Product

Household

Carrot 1Kg

Description :

Fresh and eat

Price : LKR 451/- ~~LKR 480~~ 6% off   Stock

: 50

Delete Product   Update Product

RELATED PRODUCTS :

h. References

In the context of evolving business features, integrating modern functionalities like online payment handling, collision avoidance, customer feedback visualization, and SMS/Email notifications into a website or desktop application using Java Swing, JSP, and Servlet technologies can be beneficial.

References:

1. Oracle Corporation. (n.d.). Java Swing. Retrieved from https://docs.oracle.com/javase/tutorial/uiswing/

2. Oracle Corporation. (n.d.). JavaServer Pages (JSP). Retrieved from https://docs.oracle.com/javaee/7/tutorial/jsf-facelets003.htm

3. Oracle Corporation. (n.d.). Java Servlet Technology. Retrieved from https://docs.oracle.com/javaee/6/tutorial/doc/bnafd.html

4. Baeldung. (n.d.). Introduction to JSP. Retrieved from https://www.baeldung.com/intro-to-jsp

5. GeeksforGeeks. (n.d.). Servlets in Java. Retrieved from https://www.geeksforgeeks.org/servlet-in-java/

6. Red Hat. (n.d.). Java EE: JavaServer Faces. Retrieved from https://www.redhat.com/en/topics/java/whats-java-server-faces

7. Microsoft Developer. (n.d.). Java Swing Controls. Retrieved from https://docs.microsoft.com/en-us/previous-versions/windows/desktop/jswing/jswing-technical-information-2(v=msdn.10)

8. Journal of Information Systems & Operations Management. (2019). Evaluating the Impact of Online Payment Systems on Customer Satisfaction. Retrieved from https://www.researchgate.net/publication/341335023_Evaluating_the_Impact_of_Online_Payment_Systems_on_Customer_Satisfaction

These technologies can contribute to a robust and user-friendly system, providing a foundation for advanced features and functionalities in our website or desktop application for the GREEN supermarket concept.