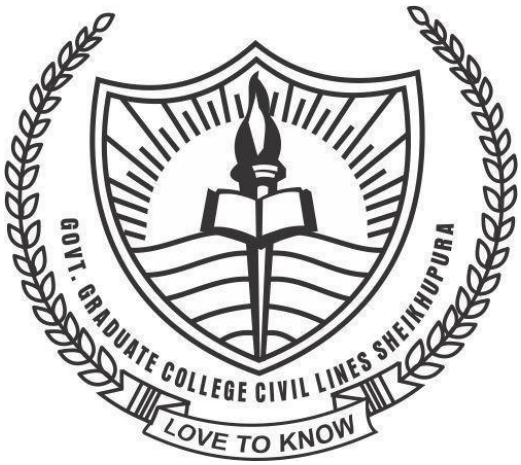
UNIVERSITY OF THE PUNJAB



SOFTWARE DESIGN DESCRIPTION

For

Vow Essential

"*Journey Begin with Trusted Selections and Endless Possibilities*"

Version 1.0

Project ID: 2021-----

By

Nabila Naz **068464 | 2021-KS-165**

Marwa Ali **068439 | 2021-KS-154**

Supervisor

Sir Muhammad Kamran

Bachelor of Science in INFORMATION TECHNOLOGY (2021-2025)

DECLARATION

The work reported in this project was carried under the supervision of Project Supervisor, **Sir Muhammad Kamran**, at Govt. Graduate College, Civil Lines, Sheikhupura.

We hereby declare that this project and the contents of the project are the product of our research and no part has been copied from any other written or published source (except the references, standard mathematical or genetics models/equation/formulas/protocol, etc.).

We further declare that this work has not been submitted for the award of any other degree diploma. The university may take action if the provided information is found inaccurate at any stage.

Student Name	**Registration No.**	**Signature**
Nabila Naz	2021-KS-165	_____
Marwa Ali	2021-KS-154	_____

STATEMENT OF SUBMISSION

This to certify that following student has completed the final year project named as: **Vow Essential** at **Govt. Graduate College, Civil Lines, Sheikhupura** to fulfill the partial requirement of the degree of Bachelors of Information Technology.

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PROOFREADING CERTIFICATE

This certifies that **Nabila Naz (PU Roll # 068464) and Marwa Ali (PU Roll # 068439)** have completed their project **"Vow Essential"** at the Department of **Information Technology at Government Graduate College, Civil Lines, Sheikhupura**, to fulfill the partial requirement for the degree of Bachelor of Sciences in Information Technology.

_____

Supervisor

Muhammad Kamran

Lecturer in Computer Science

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ACKNOWLEDGEMENTS

In the name of **ALMIGHTY ALLAH,** the most merciful, the most beneficent, Who is the Lord and Owner of all authorities and capabilities Who endowed His greatness on us. He is the entire source of knowledge of wisdom and Who blessed us with the ability to do work. We all grateful to the **Prophet Muhammad (PBUH)** who gave us the spirit to learn. No doubt in it because of **ALMIGHTY ALLAH** that today we are able to complete our project.

We are also thankful to our honorable Supervisor **Sir Muhammad Kamran**, Department of Computer Science of Govt. Graduate College, Civil Lines, Sheikhupura for his guidance, encouragement, support, and admirable help. He was always encouraging to come to the project work. In fact, without his efforts and guidance, it might not have been possible to complete the work.

We would like to thanks all the faculty of Information Technology of Govt. Graduate College, Civil Lines, Sheikhupura for this great support and help for the proper completion of our project work. We should feel it necessary to express our exclusive love and adoration in our parents and other family members for their support, encouragement, and tremendous contribution to our project completion.

May all they live, long to see our dreams being fulfilled. **Ameen!**

CERTIFICATE OF APPROVAL

It is to certify that the final year project of BS (IT) "**Vow Essential**" was developed by:

Student Name	**Registration No**	**Roll No**
Nabila Naz	**2021-KS-165**	**068464**
Marwa Ali	**2021-KS-154**	**068439**

Under the supervision of **"Sir Muhammad Kamran"** and that in our opinion; it is fully adequate, in scope and quality for the degree of Bachelors of Science in Information Technology.

_____

Supervisor

Muhammad Kamran

Govt. Graduate College, Civil Lines, Sheikhupura.

DATED: _____

_____

Head of Department

Muhammad Ali Waqas

Govt. Graduate College, Civil Lines, Sheikhupura.

DATED: _____

PROJECT INFORMATION

Project Title	**VowEssential**
Objective	A platform to help users easily buy furniture, electronics, and dowry items for weddings, making shopping simple and convenient.
Undertaken by	Nabila Naz Marwa Ali
Supervised by	Sir Muhammad Kamran
Starting Date	17/10/2024
Completion Date	06/07/2025
Tools Used	Java**,** Firebase, Android Studio, Draw.io

PREFACE

Thanks for your interest in this project report. This is a final year project report written by student of **Bachelor of Science in Information Technology** at the **University of the Punjab.** We are **Nabila Naz** and **Marwa Ali** studying in BS (Hons) of **Govt. Graduate College, Civil Lines, Sheikhupura**.

This is a technical report, we'll explain the idea of our project and the implementation process in detail and systematically. To enable you to understand this project more clearly. This report is divided into 20 topics; each topic with a specific focus. I hope this approach makes it easy for you to read our project report easily. Lastly, if you have any comment you are Welcome, feel free to contact us at:

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Marwa Ali mrwahali239@gmail.com

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ABSTRACT

The **VowEssential** application is about creating a simple and user-friendly app for dowry-related shopping. Shopkeepers can create their profiles, upload product details with images, prices and locations and manage their catalogs and orders. Customers can browse products, view details, chat with shopkeepers and place orders. Customers can also customize products according to their needs, making the shopping experience easy and personalized. This platform connects customers and shopkeepers in a convenient and efficient way.

1. INTRODUCTION

The **Vow Essential** application is created with the goal of offering customers the best products that meet their preferences and needs. Our platform allows customers to communicate directly with shopkeepers, inquire about product details, request customization and place orders according to their preferences, without the involvement of third parties. This platform allows customers to browse a variety of products, connect with shopkeepers, and make purchases with confidence. Vow Essential is dedicated to providing a hassle-free shopping experience, where customers can easily find exactly what they need for special life events like weddings, all while ensuring quality and satisfaction.

1.1 Scope

The Vow Essential focuses specifically on dowry shopping, where customers can browse products from shopkeepers' profiles, view product details, and make purchases. The key feature is that customers can customize these products according to their preferences, addressing the need for personalized dowry items. While online shopping is convenient, the platform also promotes the option for customers to visit the shop in person if desired, allowing them to interact with the shopkeeper directly. Vow Essentials aims to make wedding shopping more affordable, personalized, and convenient while supporting local businesses.

1.2 Purpose

The primary purpose of developing the Vow Essential is to design and develop a mobile app that simplifies the process of dowry-related shopping by providing a platform where shopkeepers and customers can connect. It aims to make the shopping process more convenient, efficient, and reliable.

1.3 Objectives

The objective of the system is to develop an easy-to-use app where shopkeepers can display their products with pictures, prices, and locations and manage their catalogs and orders. The app will allow

customers to browse products, chat with shopkeepers, place orders, and visit shops using live locations. It also provides customization options to ensure a personalized and seamless shopping experience for customers.

1.4 Project Justification

Our system is justified because it addresses the challenges of dowry-related shopping, which is often time-consuming and inconvenient. Customers face difficulties visiting multiple shops to find suitable products, while shopkeepers struggle to reach a wider audience and manage their business effectively.

By providing a digital platform, our system allows shopkeepers to showcase their products with images, prices, and locations and manage their orders efficiently. Customers can browse a wide range of options, chat with shopkeepers, customize products, and place orders easily. This simplifies the shopping process, saves time and effort, and creates a seamless experience for both customers and shopkeepers.

2. PROBLEM STATEMENT

In traditional dowry shopping, customers face several challenges, such as limited access to product options, time-consuming visits to multiple shops, lack of customization, and difficulties in comparing prices and quality. On the other hand, shopkeepers struggle to expand their customer base and manage orders and inquiries efficiently. Our system solves these problems by providing a platform where customers can directly communicate with shopkeepers, request customizations, and even visit the shop if desired. Customers can easily browse catalogs and make purchases, creating a more personalized and hassle-free shopping experience. This platform helps customers find exactly what they need for weddings, eliminating the need for intermediaries and making the shopping process more convenient and efficient.

2.1 Overall Description

The **Vow Essential** develops a mobile app that connects customers and shopkeepers for dowry-related shopping. Shopkeepers can manage their profiles, products, and orders, while customers can browse, chat, and place orders. The app features live shop locations and customization options, offering a personalized and efficient shopping experience. It eliminates the need for intermediaries, making it easier for customers to find what they need for weddings and helping shopkeepers reach a wider audience.

2.2 Product Perspective

The **Vow Essential** is a digital marketplace connecting customers and shopkeepers for dowry-related shopping. Shopkeepers can showcase products, manage orders, and interact with customers. Customers can browse, customize, and purchase items directly through the app. With live location sharing and personalization options, the app simplifies the shopping process, offering a convenient and efficient experience for both parties.

2.3 Challenges in Dowry Shopping Experience

Dowry Shopping Experience in Traditional Setups Faces Several Challenges:

1. **Limited Product Options**: Customers often face a lack of variety in dowry-related products, making it difficult to find suitable items.
2. **Time-Consuming Process**: Visiting multiple shops to compare prices and quality is exhausting and inefficient for customers.
3. **Lack of Customization**: Many shops do not offer customization options, limiting the ability to personalize products according to customer needs.
4. **Inefficient Communication**: Slow or unclear communication between customers and shopkeepers leads to delays and misunderstandings.

2.4 Proposed Solution

The proposed solution is the **Vow Essential** app, a modern and efficient platform designed to address the challenges of traditional dowry shopping. It provides a seamless experience for both customers and shopkeepers by offering an easy-to-use, digital marketplace. The app includes key features to enhance the shopping process:

1. **Wide Product Variety**: Customers can browse a wide range of dowry-related products with detailed information, images, prices, and locations.
2. **Customization Options**: Allows customers to customize products based on their preferences, providing a personalized shopping experience.
3. **Real-Time Communication**: Enables direct chat between customers and shopkeepers for quick inquiries, orders, and product adjustments.
4. **Live Location Sharing**: Customers can easily find and visit shops using real-time location updates, making the shopping process more convenient.

3. SYSTEM ANALYSIS

3.1 Proposed System

The proposed **Vow Essential** application is a digital platform designed to make dowry shopping easier by connecting customers and shopkeepers on a single platform. Shopkeepers can upload product details, including images, prices, and shop locations, while efficiently managing their orders and inventory. Customers can explore a variety of products, communicate directly with shopkeepers, request customizations, and place orders. The app also includes a live location feature, allowing customers to visit shops if needed. This system provides a user-friendly, efficient, and personalized shopping experience for both customers and shopkeepers.

3.2 Operating Environment

The Vow Essential application will operate in a client-server environment, ensuring compatibility with existing infrastructure and requiring minimal additional resources for implementation. The app will be developed using Java and XML for the front-end design, while Firebase will serve as the backend for data storage, real-time database operations, and authentication. The system will be accessible on Android mobile devices, providing flexibility and convenience for both customers and shopkeepers. The operating environment will ensure the application is secure, reliable, and capable of efficiently handling data processing, including product uploads, orders, and communication between users.

3.3 Design and Implementation Constraints

The development of the Vow Essential app will face several design and implementation constraints. One major constraint is the dependence on Firebase for backend services, which requires a stable internet connection for smooth operation, potentially limiting functionality in areas with poor connectivity. Additionally, the app must ensure data security, especially when handling sensitive

user information such as personal details and transaction data. The app's design must also be scalable to allow future additions, such as new product categories or features. Other constraints include ensuring compatibility with different Android devices, maintaining a user-friendly interface, and following privacy regulations. These factors will guide the design and development process to ensure the app's reliability and functionality.

3.4 System Requirement

- **Functional Requirements:**

1. The system shall allow customers and shopkeepers to register and create their profiles.
2. The system shall enable shopkeepers to upload product details, including images, prices, and descriptions.
3. The system shall allow customers to browse, search, and filter products by category, price, and customization options.
4. The system shall enable customers to request customizations for products based on their preferences.
5. The system shall provide a chat feature for direct communication between customers and shopkeepers.
6. The system shall allow customers to place orders for selected products and manage their order history.
7. The system shall allow shopkeepers to manage and track orders, including status updates and delivery information.
8. The system shall provide a live location-sharing feature to help customers find and visit shopkeepers' locations.
9. The system shall provide secure login and access for customers and shopkeepers to view and manage their profiles.

- **Non-Functional Requirements:**

1. The system shall keep user data safe and private, following privacy rules and guidelines.
2. The system shall be able to grow and add new features in the future.
3. The system shall have an easy-to-use interface for both customers and shopkeepers.
4. The system shall be reliable, with minimal downtime and fast processing.
5. The system shall provide a user-friendly interface accessible from mobile devices.

4. REQUIREMENT IDENTIFYING TECHNIQUES

4.1 Admin's Scenarios:

List of possible use cases of **Admin:**

- UC_AdminLogin
- UC_ViewUsers
- UC_BlockUsers
- UC_Logout

Use Case Discussed

Below is the use case descriptions for all of the use cases mentioned above in admin's scenarios.

(r, n.d.)

4.1.1 Admin Use Case Diagram

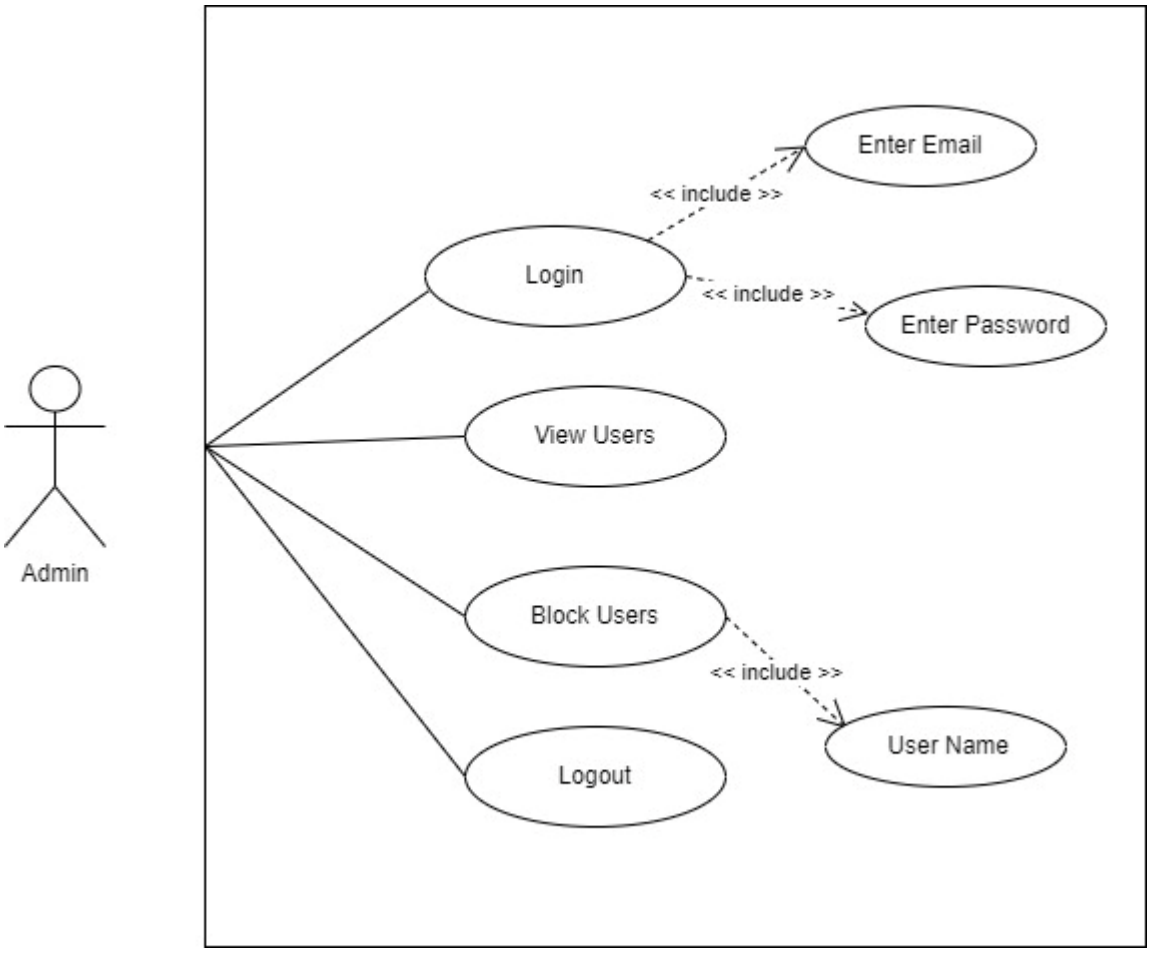

Figure 1: Admin UCD

4.1.2 UC_AdminLogin

Use case ID: UC_01

Primary Actor: Admin

Use Case Name:	UC_ Admin Login

Description:	In this use case, Admin logs into the system to manage users and system settings.
Actor:	Administrator
Preconditions:	Admin must be registered in the system. The system must be working and available.
Basic Flows:	• Admin navigates to the login screen. • Admin enters their registered email. • Admin enters their password. • Admin clicks on the Login button. • The system validates the login credentials. • Upon successful validation, the system grants access to the admin dashboard. • Admin is redirected to the admin dashboard.
Exceptional Flows:	Invalid Credentials. Account Not Found. Forgot Password.
Postconditions:	Admin is successfully logged into the system. Admin can now manage users.

4.1.3 UC_ViewUsers

Use case ID: UC_02

Primary Actor: Admin

Use Case Name:	UC_View Users
Description:	In this use case, Admin views the list of all registered users in the system.
Actor:	Administrator
Preconditions:	Admin must be logged into the system. The system must be working and available.
Basic Flows:	• Admin navigates to the "View Users" option on the dashboard. • The system retrieves the list of registered users. • The list is displayed with user details (e.g., name, email, status). • Admin can sort or filter the list if needed.
Exceptional Flows:	No registered users available.

Postconditions:	The list of registered users is successfully displayed to the admin.

4.1.4 UC_BlockUsers

Use case ID: UC_03

Primary Actor: Admin

Use Case Name:	UC_BlockUsers
Description:	In this use case, Admin blocks or unblocks a user using their username.
Actor:	Administrator
Preconditions:	Admin must be logged into the system. User to be blocked/unblocked must exist in the system.
Basic Flows:	• Admin navigates to the "View Users" section. • Admin searches for the user by their username. • Admin selects the user to block or unblock. • Admin clicks the "Block" or "Unblock" button. • The system updates the user's status accordingly.

Exceptional Flows:	User does not exist.
Postconditions:	The user's status is successfully updated to "Blocked" or "Active."

4.1.5 UC_Logout

Use case ID: UC_04

Primary Actor: Admin

Use Case Name:	UC_Logout
Description:	In this use case, Admin logs out of the system.
Actor:	Administrator
Preconditions:	Admin must be logged into the system.
Basic Flows:	• Admin clicks on the "Logout" button in the dashboard.

	• The system logs out the admin and ends their session. • Admin is redirected to the login page.
Exceptional Flows:	Not logout due to network issue.
Postconditions:	Admin is logged out successfully.

4.2 Shopkeeper's Scenarios:

List of possible use cases of **Shopkeeper:**

- UC_Signup
- UC_Login
- UC_ForgotPassword
- UC_AddProducts
- UC_UpdateProducts
- UC_RemoveProducts
- UC_Logout

Use Case Discussed

Below is the use case descriptions for all of the use cases mentioned above in shopkeeper's scenarios.

(r, n.d.)

4.2.1 Shopkeeper Use Case Diagram

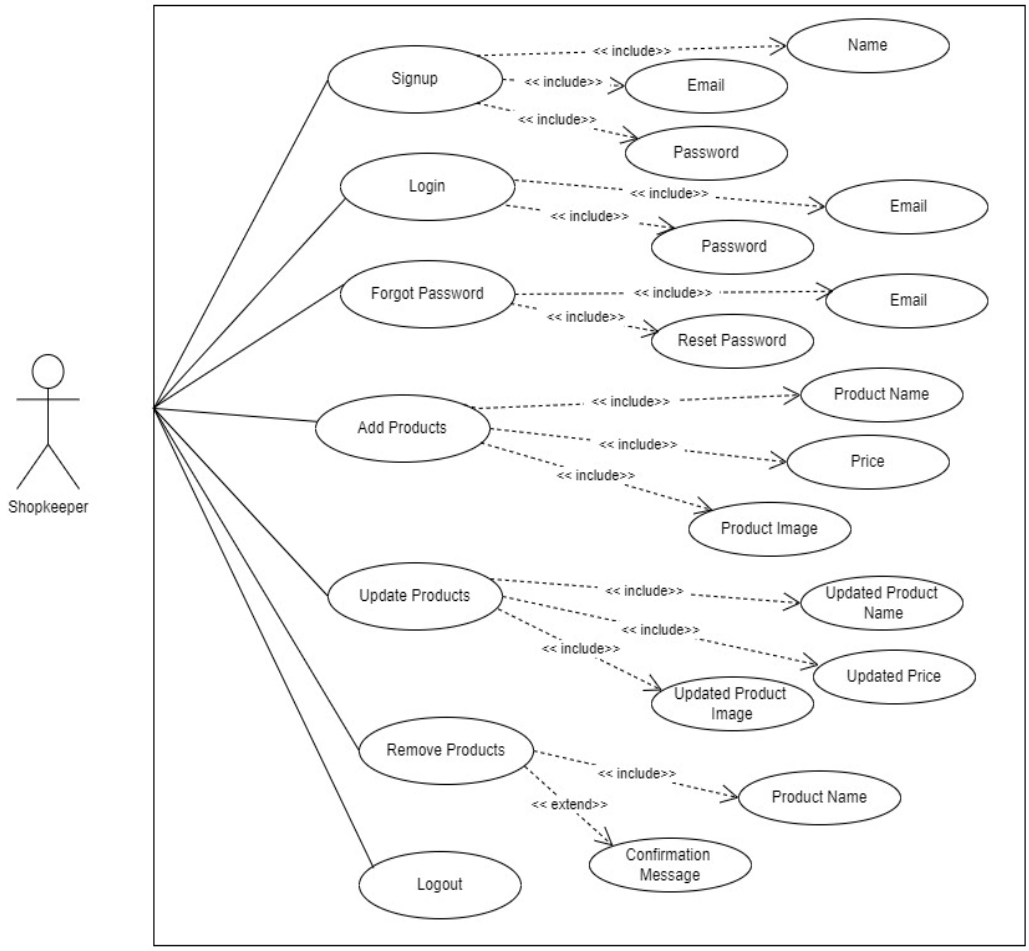

Figure 2: Shopkeeper UCD

4.2.2 UC_Signup

Use case ID: UC_01

Primary Actor: Shopkeeper

Use Case Name:	UC_Signup
Description:	In this use case, Customer registers an account in the system.
Actor:	Customer
Preconditions:	The customer must have access to the registration page. The system must be working and available.
Basic Flows:	• Customer navigates to the signup page. • Customer enters their name, email, and password. • Customer clicks the Signup button. • The system validates the input and creates a new account. • Customer receives a success message.
Exceptional Flows:	Email Already Registered. Duplicate Email.
Postconditions:	The customer account is successfully created.

	The customer can now log in to the system and access its features.

4.2.3 UC_Login

Use case ID: UC_02

Primary Actor: Shopkeeper

Use Case Name:	UC_Login
Description:	In this use case, Shopkeeper logs into the system.
Actor:	Shopkeeper
Preconditions:	Shopkeeper must have a registered account. The system must be working and available.
Basic Flows:	• Shopkeeper navigates to the login page. • Shopkeeper enters their registered email and password. • Shopkeeper clicks the Login button. • System validates the login credentials. • Upon successful validation, system redirects the shopkeeper to their dashboard.

Exceptional Flows:	Incorrect email or password. Account Not Found. Forgot Password.
Postconditions:	Shopkeeper is successfully logged in and redirected to the dashboard.

4.2.4 UC_ForgotPassword

Use case ID: UC_03

Primary Actor: Shopkeeper

Use Case Name:	UC_ForgotPassword
Description:	In this use case, Shopkeeper recovers their password.
Actor:	Shopkeeper
Preconditions:	Shopkeeper must have a registered email.

Basic Flows:	• Shopkeeper clicks on "Forgot Password" on the login page. • Shopkeeper enters their registered email. • System sends a password reset link to the email. • Shopkeeper clicks the link and resets the password. • Shopkeeper receives confirmation of the password change.
Exceptional Flows:	Email not registered. Failed to send reset link.
Postconditions:	Shopkeeper 's password is updated successfully.

4.2.5 UC_AddProducts

Use case ID: UC_04

Primary Actor: Shopkeeper

Use Case Name:	UC_AddProducts
Description:	In this use case, Shopkeeper adds new products to their catalog for customers to view.

Actor:	Shopkeeper
Preconditions:	The shopkeeper must be logged into the system.
Basic Flows:	• Shopkeeper navigates to the Add Product page. • Shopkeeper enters product details (e.g., name, price, image). • Shopkeeper clicks the Add Product button. • System validates and saves the product details. • System displays a success message.
Exceptional Flows:	Missing Information. Invalid Price or Image.
Postconditions:	Product is successfully added.

4.2.6 UC_UpdateProducts

Use case ID: UC_05

Primary Actor: Shopkeeper

Use Case Name:	UC_UpdateProducts
Description:	In this use case, Shopkeeper updates product details (name, price, image).
Actor:	Shopkeeper
Preconditions:	Product must exist in the shopkeeper's inventory. The shopkeeper must be logged into the system.
Basic Flows:	• Shopkeeper navigates to the product list. • Shopkeeper selects a product to update. • Shopkeeper modifies the product details (e.g., name, price, image). • Shopkeeper clicks the Update Product button. • System validates and updates the product details. • System displays a success message.
Exceptional Flows:	Missing Information. Product does not exist.

Postconditions:	Product details are successfully updated.

4.2.7 UC_RemoveProducts

Use case ID: UC_06

Primary Actor: Shopkeeper

Use Case Name:	UC_RemoveProducts
Description:	In this use case, Shopkeeper removes products with confirmation.
Actor:	Shopkeeper
Preconditions:	Product must exist in the shopkeeper's inventory. The shopkeeper must be logged into the system.
Basic Flows:	• Shopkeeper navigates to the product list. • Shopkeeper selects a product to remove. • Shopkeeper clicks the Remove Product button. • System asks for confirmation.

	• Shopkeeper confirms the removal. • System removes the product from the inventory. • System displays a success message.
Exceptional Flows:	Product does not exist. Removal Failure.
Postconditions:	Product is successfully removed.

4.2.8 UC_Logout

Use case ID: UC_07

Primary Actor: Shopkeeper

Use Case Name:	UC_Logout
Description:	In this use case, Shopkeeper logs out of the system.
Actor:	Shopkeeper

Preconditions:	The shopkeeper must be logged into the system.
Basic Flows:	• Shopkeeper clicks on the Logout button. • System ends the customer's session. • Shopkeeper is redirected to the login page.
Exceptional Flows:	Not logout due to network issue.
Postconditions:	Logout out successfully.

4.3 Customer's Scenarios:

List of possible use cases of **Customer:**

- UC_Signup
- UC_Login
- UC_ForgotPassword
- UC_BrowseProducts
- UC_AddToCart
- UC_PlaceOrder
- UC_ProvideFeedback

- UC_Logout

Use Case Discussed

Below is the use case descriptions for all of the use cases mentioned above in customer's scenarios. **(r, n.d.)**

4.3.1 Customer Use Case Diagram

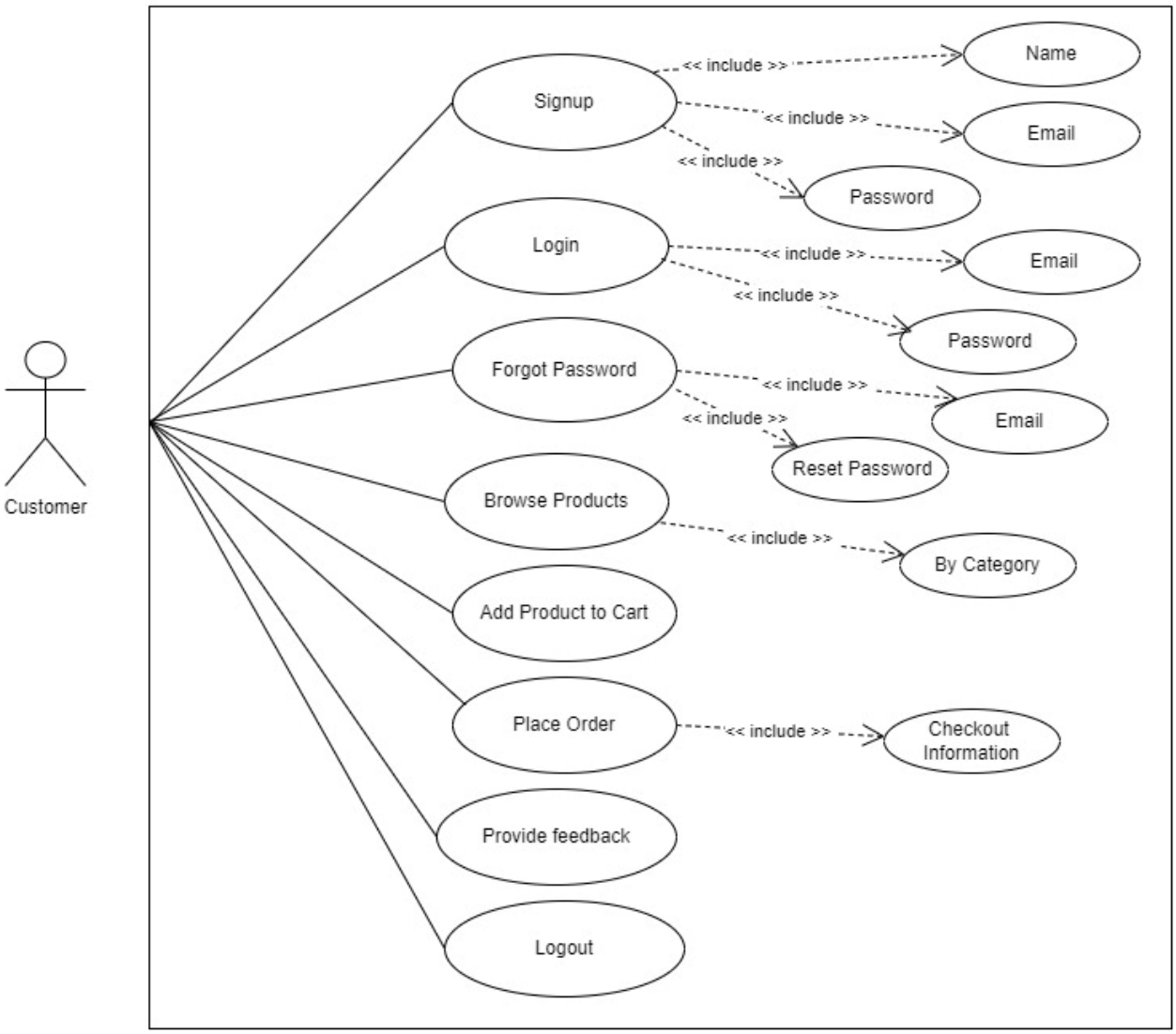

Figure 3: Customer UCD

4.3.2 UC_Signup

Use case ID: UC_01

Primary Actor: Customer

Use Case Name:	UC_ Signup
Description:	In this use case, Customer registers an account in the system.
Actor:	Customer
Preconditions:	The customer must have access to the registration page. The system must be working and available.
Basic Flows:	• Customer navigates to the signup page. • Customer enters their name, email, and password. • Customer clicks the Signup button. • The system validates the input and creates a new account. • Customer receives a success message.

Exceptional Flows:	Email Already Registered. Duplicate Email.
Postconditions:	The customer account is successfully created. The customer can now log in to the system and access its features.

4.3.3 UC_Login

Use case ID: UC_02

Primary Actor: Customer

Use Case Name:	UC_ Login
Description:	In this use case, Customer logs into the system to access their account and available features.
Actor:	Customer
Preconditions:	The customer must already have a registered account. The system must be working and available.

Basic Flows:	• Customer navigates to the login page. • Customer enters their registered email and password. • Customer clicks the Login button. • The system validates the credentials. • Upon success, customer is redirected to their dashboard.
Exceptional Flows:	Incorrect email or password. Account Not Found. Forgot Password.
Postconditions:	Customer is successfully logged in and can access the system's features.

4.3.4 UC_ForgotPassword

Use case ID: UC_03

Primary Actor: Customer

Use Case Name:	UC_ForgotPassword

Description:	In this use case, Customer recovers their password.
Actor:	Customer
Preconditions:	Customer must have a registered email.
Basic Flows:	• Customer clicks on "Forgot Password" on the login page. • Customer enters their registered email. • System sends a password reset link to the email. • Customer clicks the link and resets the password. • Customer receives confirmation of the password change.
Exceptional Flows:	Email not registered. Failed to send reset link.
Postconditions:	Customer's password is updated successfully.

4.3.5 UC_BrowseProducts

Use case ID: UC_04

Primary Actor: Customer

Use Case Name:	UC_BrowseProducts
Description:	In this use case, Customer views a list of available products in the system.
Actor:	Customer
Preconditions:	The customer must be logged into the system. The system must have products listed and available.
Basic Flows:	• The customer navigates to the Products page. • The system displays a list of available products with details such as name, price, and image. • The customer scrolls through the list or uses filters to find specific products. • The customer clicks on a product to view detailed information.
Exceptional Flows:	No Products Available

Postconditions:	The customer can proceed to add products to the cart or continue browsing.

4.3.6 UC_AddToCart

Use case ID: UC_05

Primary Actor: Customer

Use Case Name:	UC_AddToCart
Description:	In this use case, Customer adds a product to their shopping cart.
Actor:	Customer
Preconditions:	The customer must be logged into the system. The selected product must be available in stock.
Basic Flows:	• Customer selects a product from the product list. • Customer clicks the Add to Cart button. • System adds the product to the customer's cart.

	• System displays a success message.
Exceptional Flows:	The product is out of stock.
Postconditions:	Product is successfully added to the customer's cart.

4.3.7 UC_PlaceOrder

Use case ID: UC_06

Primary Actor: Customer

Use Case Name:	UC_PlaceOrder
Description:	In this use case, Customer places an order for the products in their cart.
Actor:	Customer

Preconditions:	Customer must have items in their cart.
Basic Flows:	• Customer navigates to the cart. • Customer clicks the Checkout button. • Customer enters payment and delivery information. • Customer confirms the order. • System processes the payment and confirms the order placement. • Customer receives an order confirmation.
Exceptional Flows:	Payment processing failed. Invalid Details.
Postconditions:	Order is successfully placed and saved in the system.

4.3.8 UC_ProvideFeedback

Use case ID: UC_07

Primary Actor: Customer

Use Case Name:	UC_ProvideFeedback

Description:	In this use case, Customer submits feedback about their experience.
Actor:	Customer
Preconditions:	The customer must be logged into the system.
Basic Flows:	• The customer navigates to the feedback section of a product or service. • The customer writes their feedback in the provided text box. • The customer clicks the Submit Feedback button.
Exceptional Flows:	Please complete all required fields.
Postconditions:	The feedback is successfully saved in the system.

4.3.9 UC_Logout

Use case ID: UC_08

Primary Actor: Customer

Use Case Name:	UC_Logout
Description:	In this use case, Customer logs out of the system.
Actor:	Customer
Preconditions:	The customer must be logged into the system.
Basic Flows:	• Customer clicks on the Logout button. • System ends the customer's session. • Customer is redirected to the login page.
Exceptional Flows:	Not logout due to network issue.
Postconditions:	Logout out successfully.

5. SPECIFIC REQUIREMENTS

5.1 Application Features

5.1.1 Shopkeeper Registration

The system allows shopkeepers to register by entering their details, including shop name, owner name, email, password, phone number, and shop location.

5.1.2 Customer Registration and Login

Customers can securely create accounts and log in to the system using their email and password.

5.1.3 Product Management

Shopkeepers can upload product details, including images, descriptions, prices, and available stock, and manage their catalogs easily.

5.1.4 Product Browsing and Search

Customers can browse products by categories, search for specific items, and view detailed descriptions.

5.1.5 Communication

The system allows customers to directly chat with shopkeepers for inquiries and order details.

5.1.6 Order Placement and Tracking

Customers can place orders through the app and track their order status until delivery or pickup.

5.1.7 Location Integration

The system integrates a live location feature, enabling customers to locate and visit the shop if desired.

5.1.8 Secure Payment Options

The system provides secure payment methods to complete transactions within the app.

5.1.9 User-Friendly Interface

The application ensures an intuitive interface that is easy to navigate for both shopkeepers and customers.

5.1.10 Data Security and Privacy

The system securely stores all user data, including customer and shopkeeper information, following privacy and security standards.

5.1.11 Logout

Both customers and shopkeepers can securely log out of the system to ensure data safety and end their sessions properly.

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6. QUALITY ATTRIBUTES

6.1 Usability

The app is designed to be simple and easy to use, allowing shopkeepers and customers to perform tasks without difficulty or extra help.

6.2 Performance

The app processes tasks like browsing, searching, and placing orders quickly, ensuring a smooth and efficient user experience.

6.3 User-Friendly Interface

The interface is well-designed and straightforward, making it easy for both shopkeepers and customers to navigate and use the app.

6.4 Security

The app protects sensitive data, including user details and shop information, ensuring it is safe and only accessible by authorized users.

6.5 Data Accuracy

The system ensures accurate product and order information, reducing errors and providing reliable data for users.

6.6 Responsiveness

The app responds quickly to user actions, providing a seamless experience on all supported Android devices.

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7. EXTERNAL INTERFACE REQUIREMENTS

7.1 User Interfaces

The user interface is implemented as a mobile application using Java and XML. It is designed to be easy to use and visually attractive, ensuring a smooth experience for both shopkeepers and customers. The UI is built with XML layouts, while Java handles core functionalities. This design ensures the app remains user-friendly and responsive across various Android devices.

7.2 Software Interfaces

The project utilizes several software tools:

- **Java and XML:** Used for developing the Android-based application and designing the user interface.
- **Firebase:** Serves as the backend for data storage and management, providing real-time data synchronization to keep product and order information up-to-date.
- **Android Studio:** Used as the integrated development environment (IDE) for building and testing the application on Android devices.

7.3 Hardware Interfaces

As the app is Android-based, the following minimum hardware specifications are recommended for smooth operation:

- **Operating System:** Android 7.0 or higher.
- **RAM:** 3 GB or more.
- **Processor:** 1.2 GHz quad-core processor or better.
- **Display:** 5.00-inch display or larger for better usability.

8. DESIGN METHODOLOGY

The VowEssential system is developed using the **Waterfall Model,** which provides a structured and sequential approach to the development process. This methodology was chosen for its clarity and well-defined stages, which allow for careful planning and execution of each phase before progressing to the next. The project begins with a comprehensive requirements analysis, where the needs of the users, functional requirements, and system constraints are thoroughly gathered and documented.
This stage ensures that all necessary functionalities are identified and understood.

Following the requirements **analysis**, the system design is crafted, focusing on the overall architecture and the detailed design of individual components. The design phase ensures that all parts of the system are planned out to integrate seamlessly, setting a clear path for development.

During the implementation phase, the system is developed using java for the mobile application and Firebase for data management. Each component is coded according to the **design** specifications.

Once the **implementation** is complete, the system

undergoes extensive testing, including unit testing, integration testing, and system testing. This ensures that all components work correctly and meet the specified requirements.

After successful **testing**, the system is deployed. This involves configuring the application for release, optimizing it for performance, and making it available on the appropriate platforms.

Following **deployment**, the system enters the maintenance phase, where it is monitored to ensure continued functionality. Any arising issues are addressed, and updates are made as needed to improve performance or add new features, ensuring the system remains secure and effective.
We are using Water Fall method techniques in our projects.

1. Analysis
2. Design
3. Implementation
4. Testing
5. Deployment

8.1 Waterfall Model Diagram

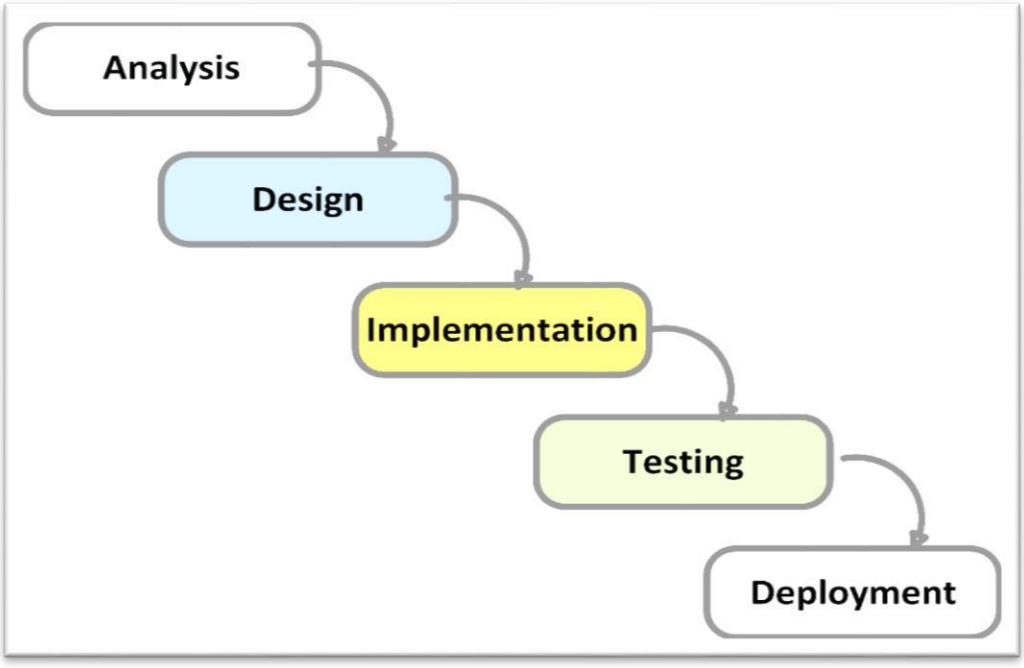
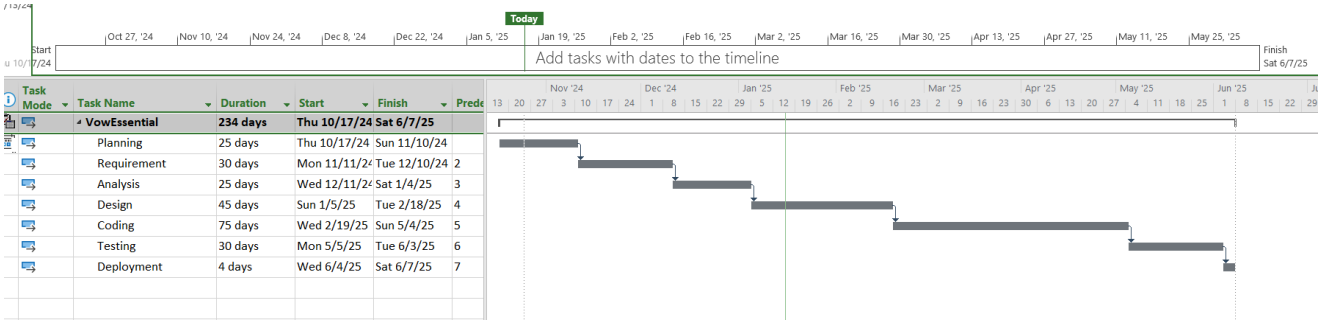


Figure 4: Waterfall Model

9. PROJECT GANTT CHART



Task Mode	Task Name	Duration	Start	Finish	Prede
	VowEssential	**234 days**	**Thu 10/17/24**	**Sat 6/7/25**	
	Planning	25 days	Thu 10/17/24	Sun 11/10/24	
	Requirement	30 days	Mon 11/11/24	Tue 12/10/24	2
	Analysis	25 days	Wed 12/11/24	Sat 1/4/25	3
	Design	45 days	Sun 1/5/25	Tue 2/18/25	4
	Coding	75 days	Wed 2/19/25	Sun 5/4/25	5
	Testing	30 days	Mon 5/5/25	Tue 6/3/25	6
	Deployment	4 days	Wed 6/4/25	Sat 6/7/25	7

Figure 5: Gantt Chart

10. DESIGN MODELS

The data model is a subset of the implementation model, which describes the logical and physical representation of persistent data in the system.

10.1 Class Diagram

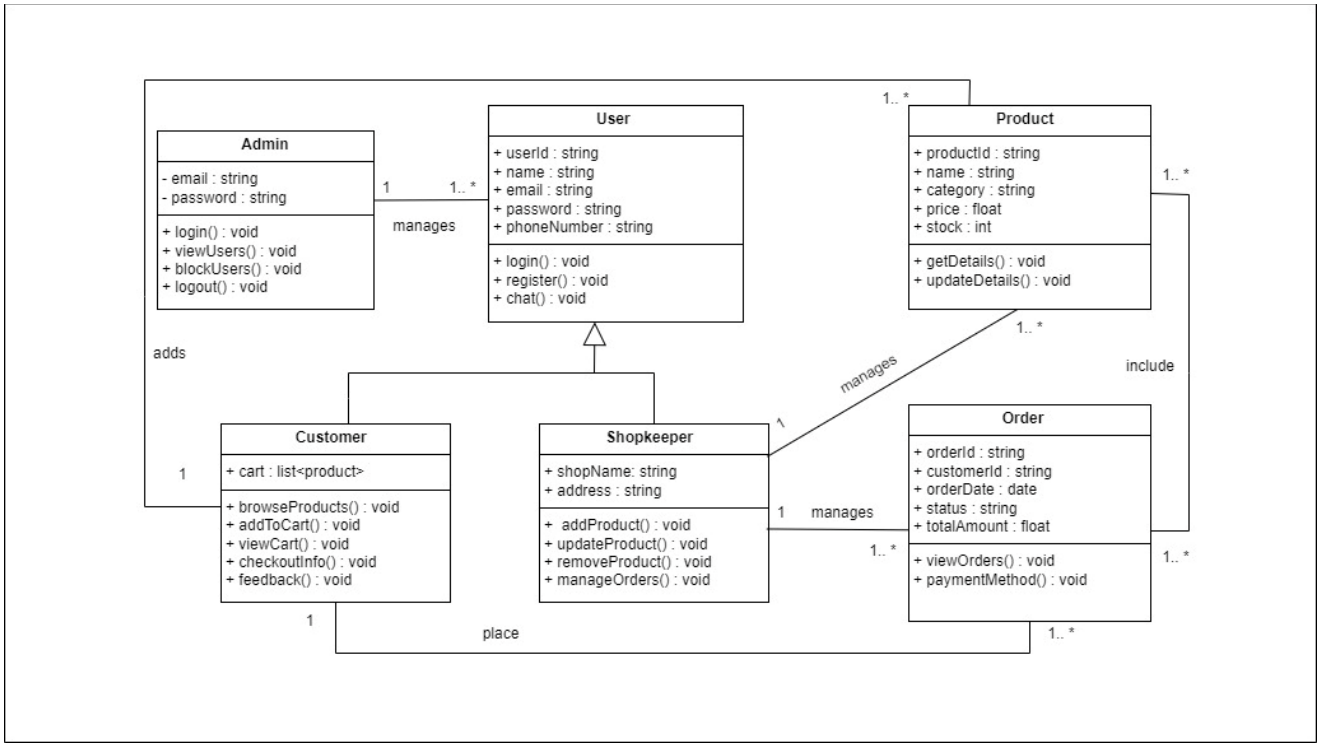


Figure 6: Class Diagram

10.2 Activity Diagram

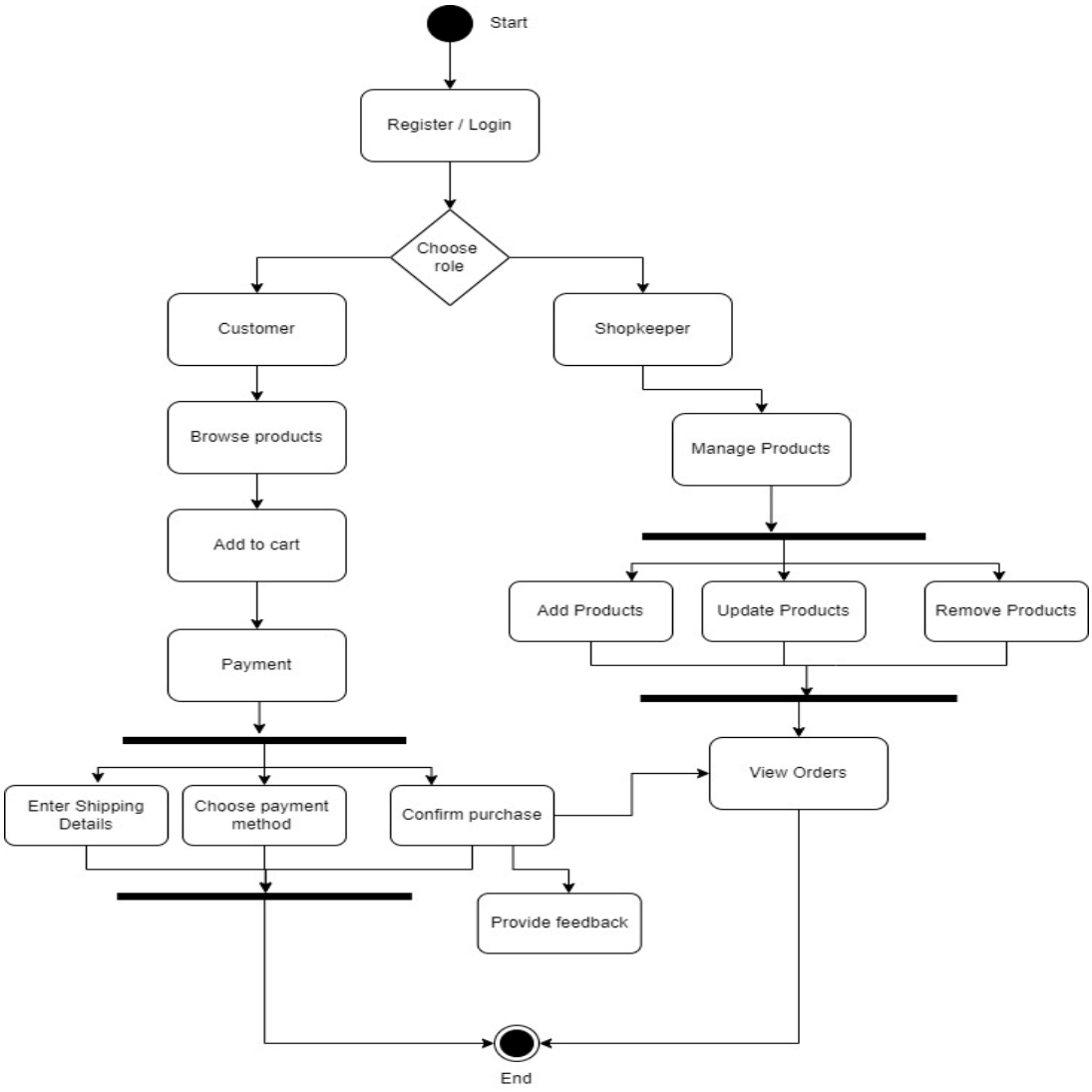


Figure 7: Activity Diagram of Shopkeeper And Customer

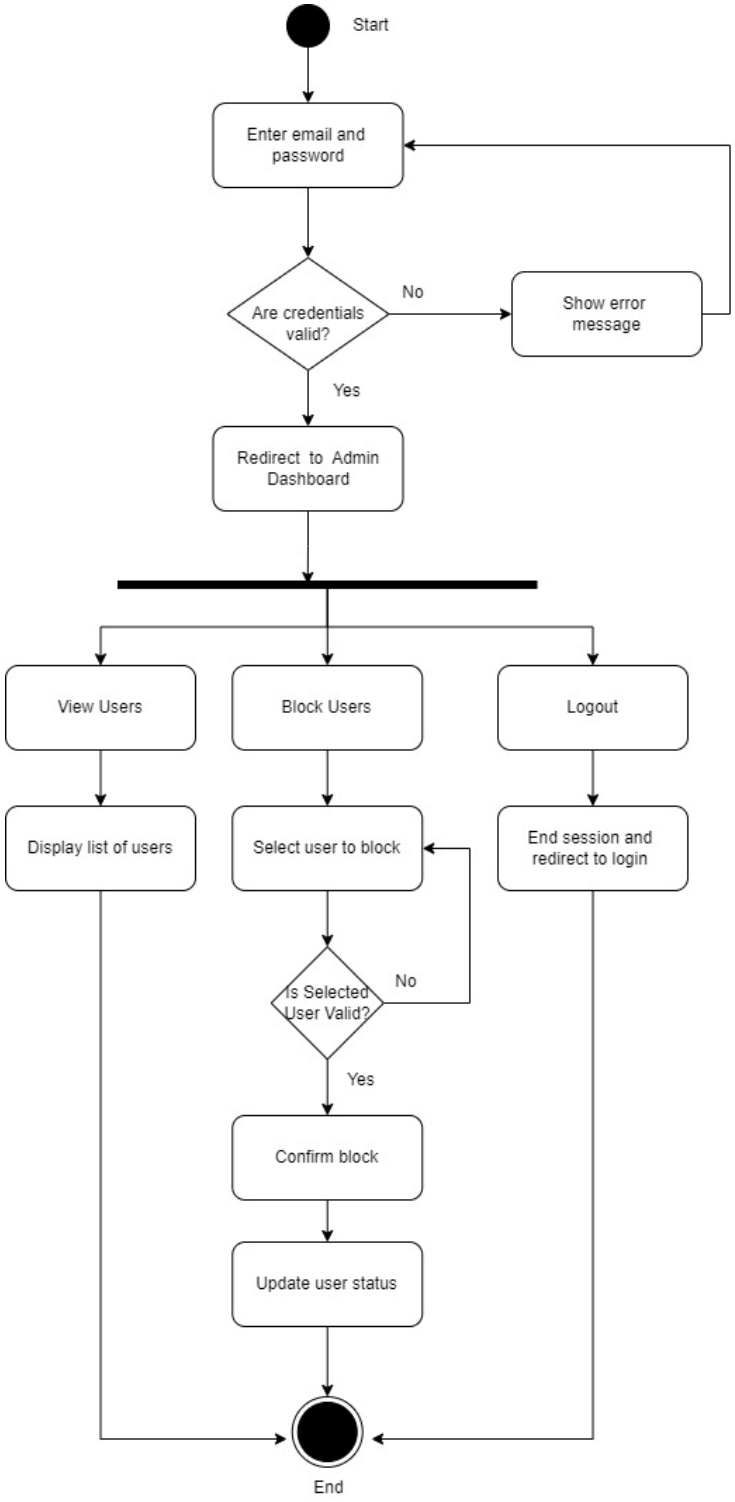


Figure 8: Activity Diagram of Admin

10.3 Sequence Diagram

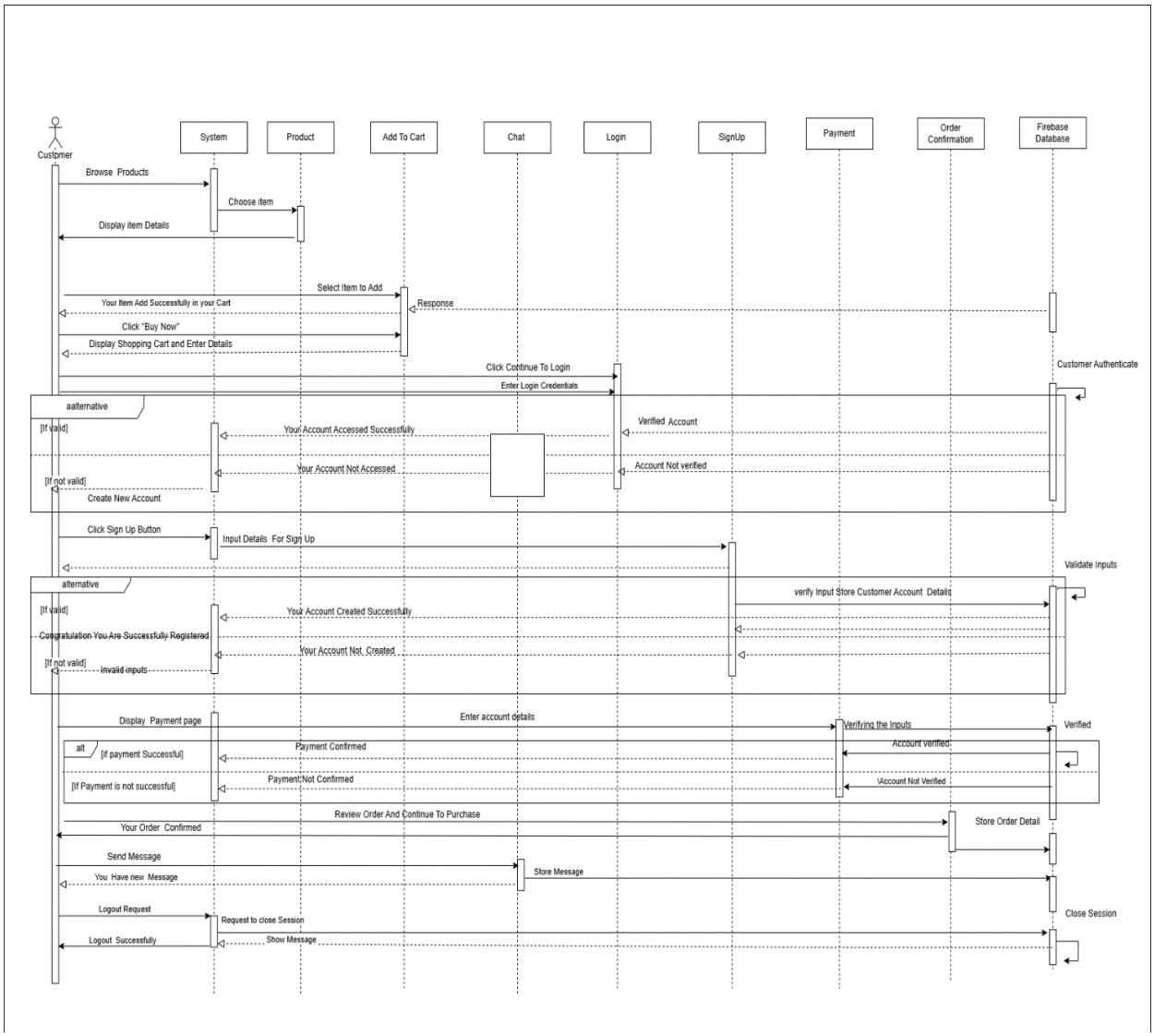


Figure 9: Sequence Diagram Of Customer

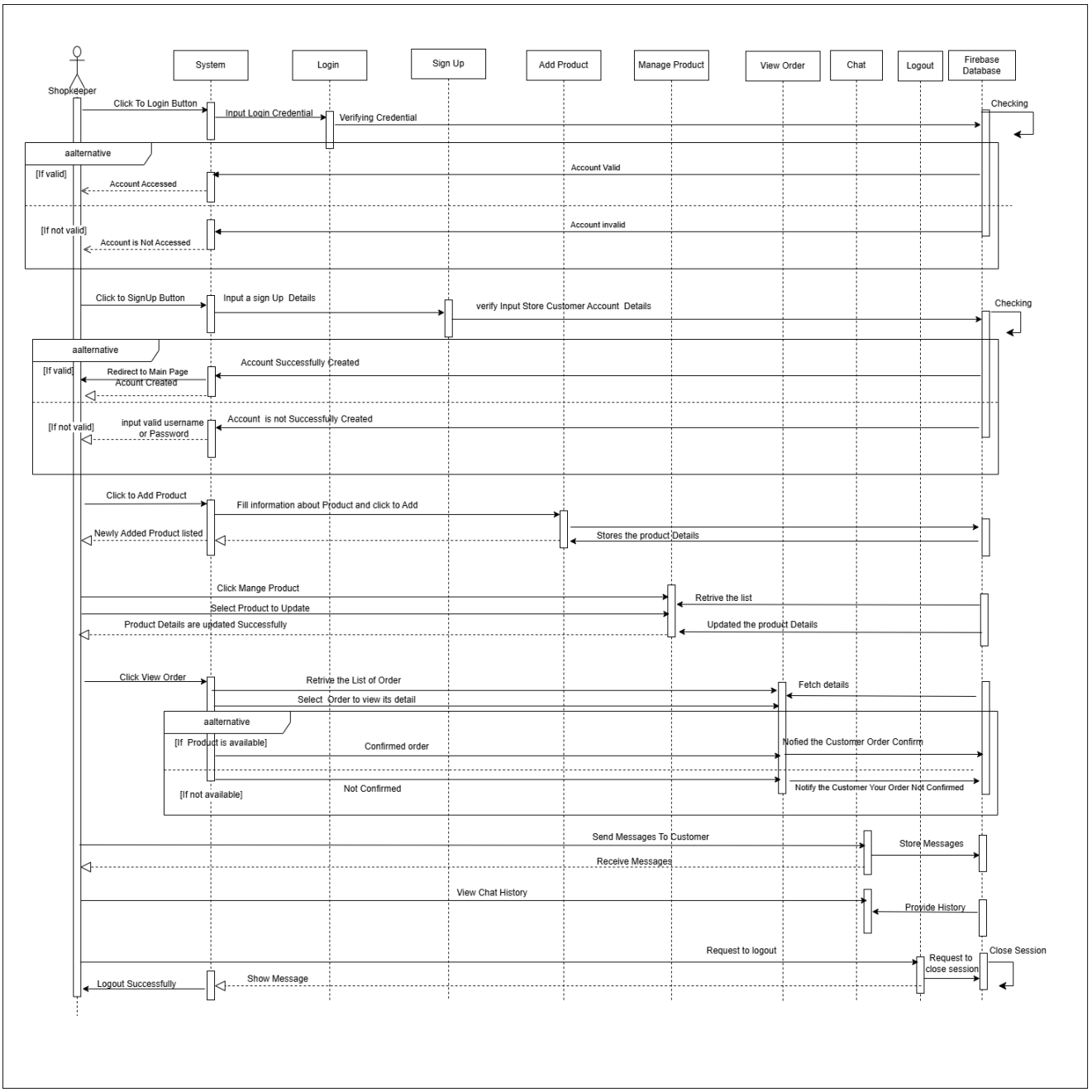


Figure 10: Sequence Diagram Of Shopkeeper

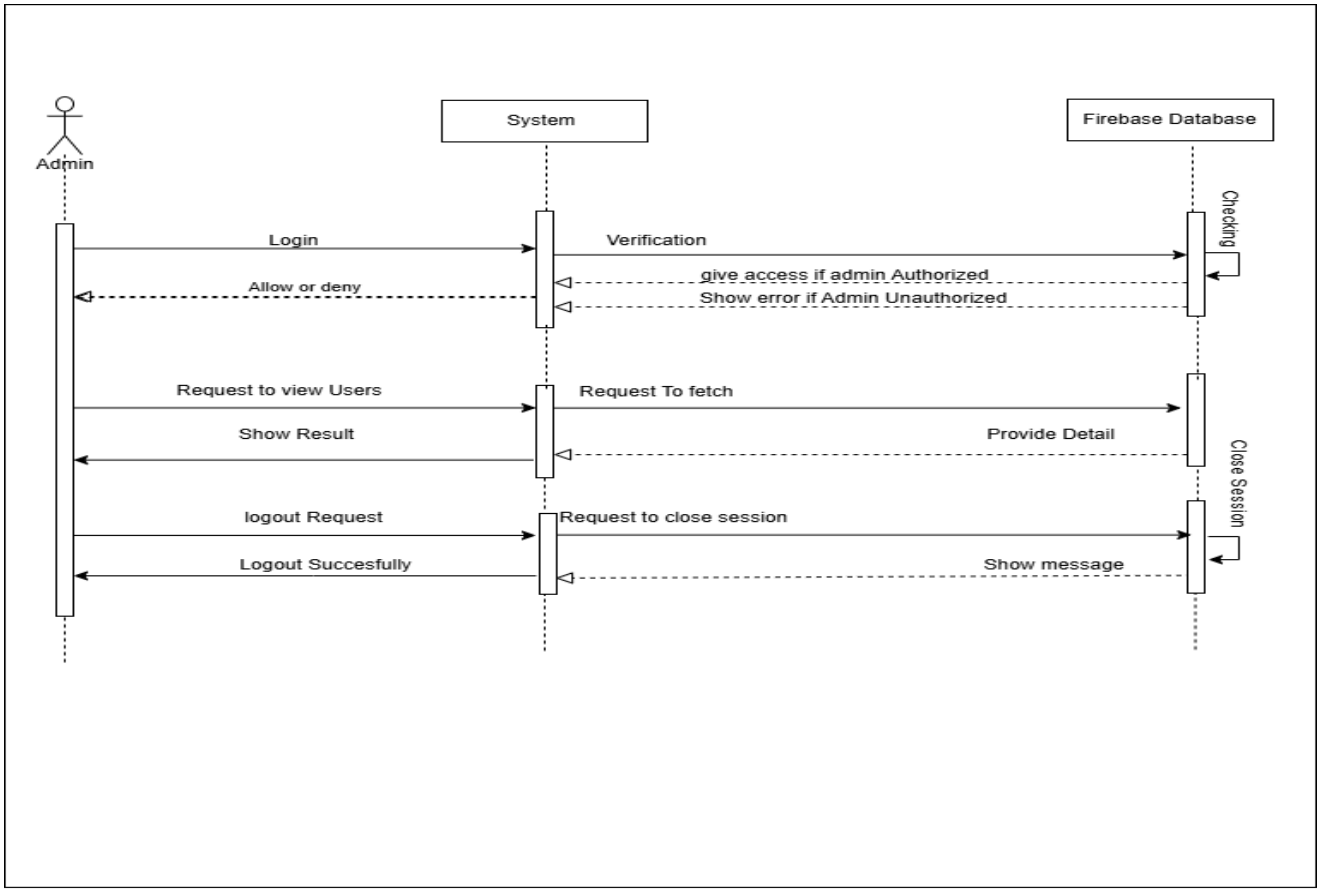


Figure 11: Sequence Diagram Of Admin

10.4 ER Diagram

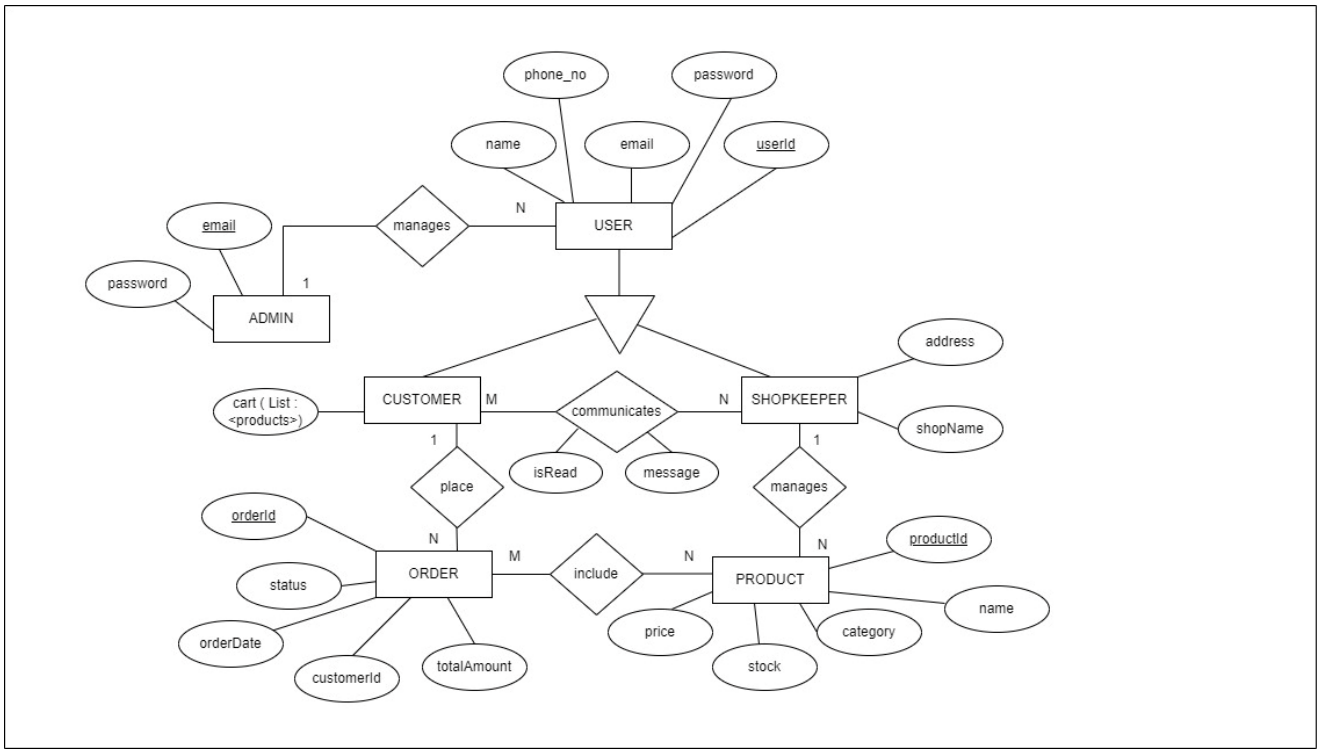


Figure 12: ER diagram

10.5 State Transition Diagram

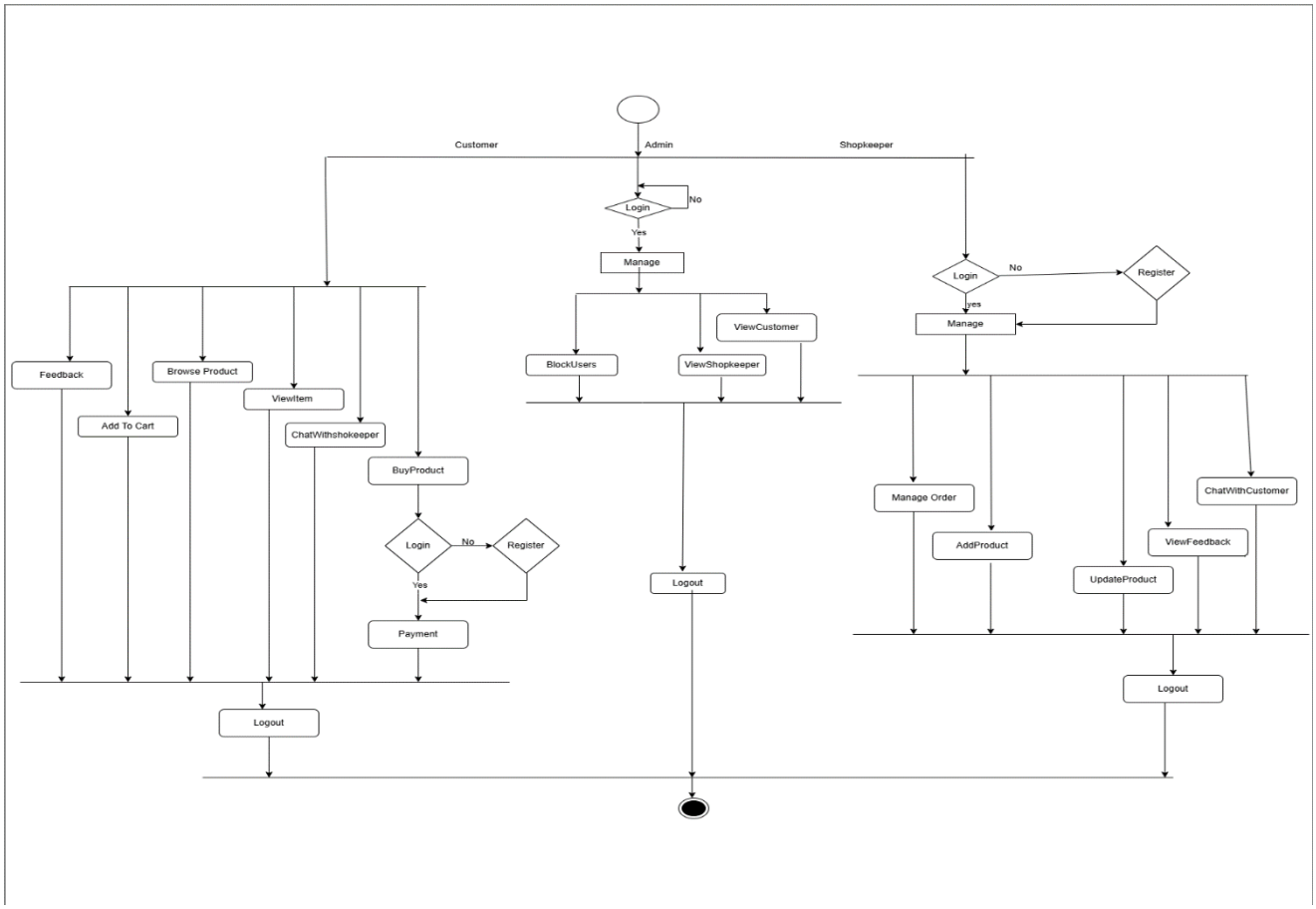


Figure 13 : State transition Diagram Of Admin ,Shopkeeper And Customer

10.6 Context Diagram

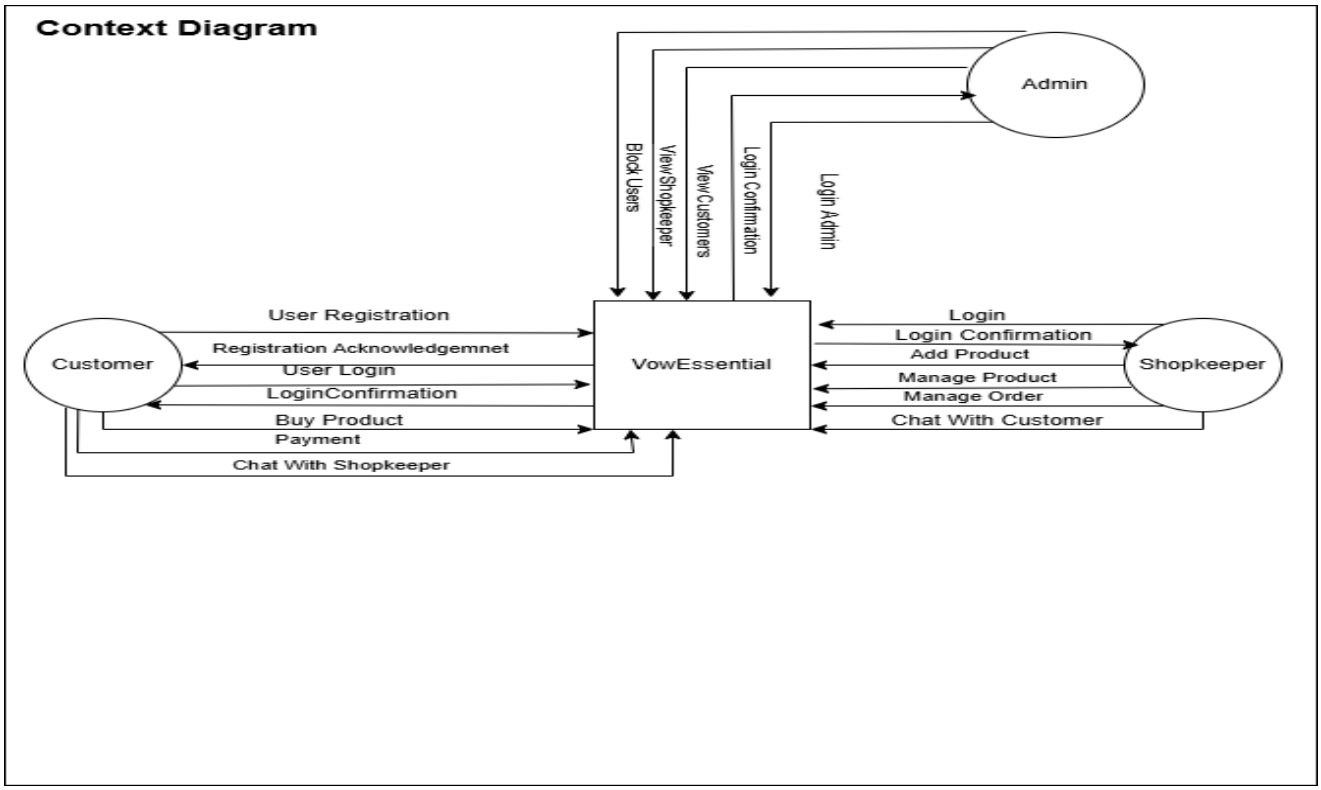


Figure 14 : Context Diagram

10.7 Data Flow Diagram

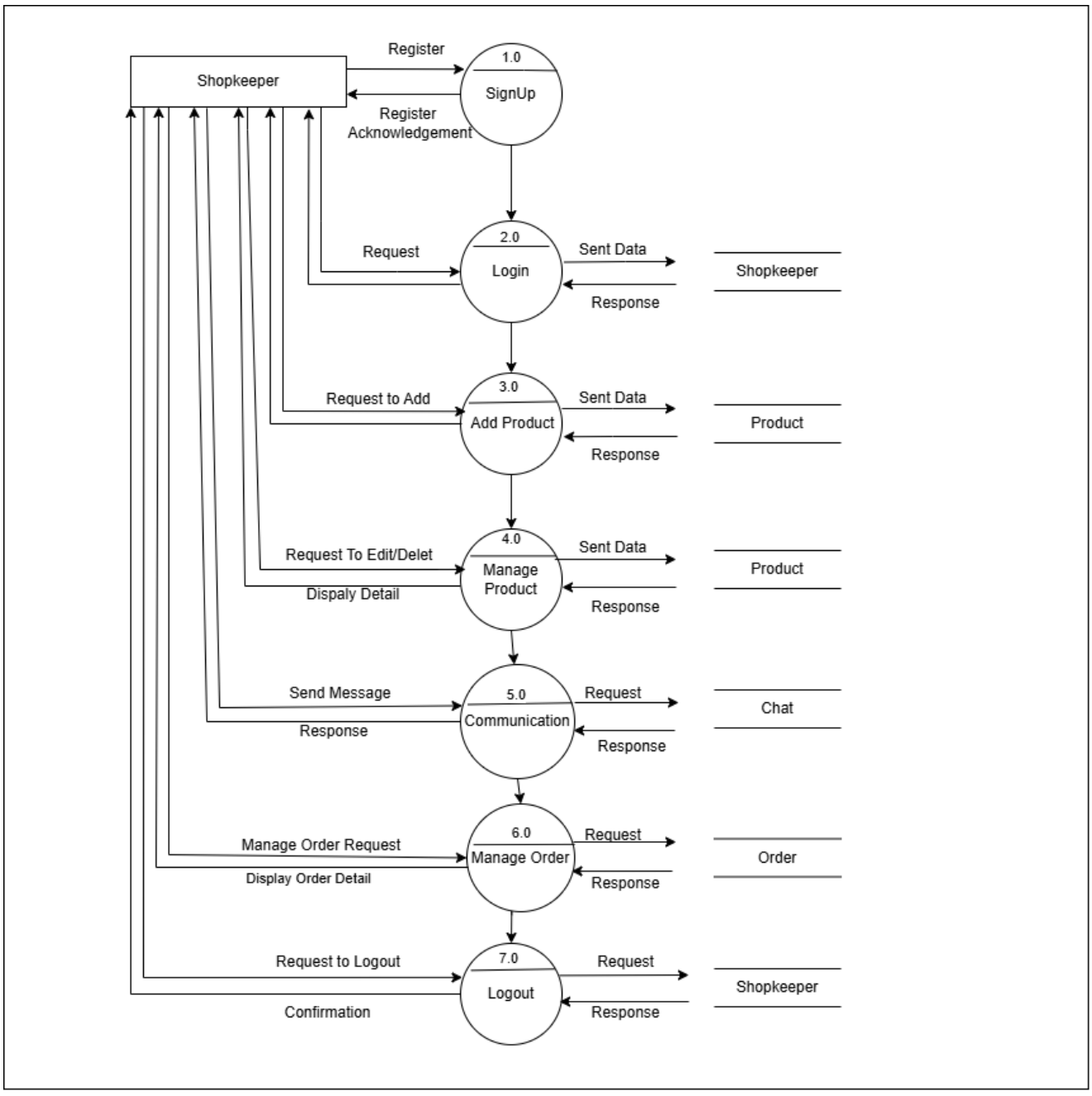


Figure 15 : Data Flow Diagram Of Shopkeeper

Data Flow Diagram OF Admin

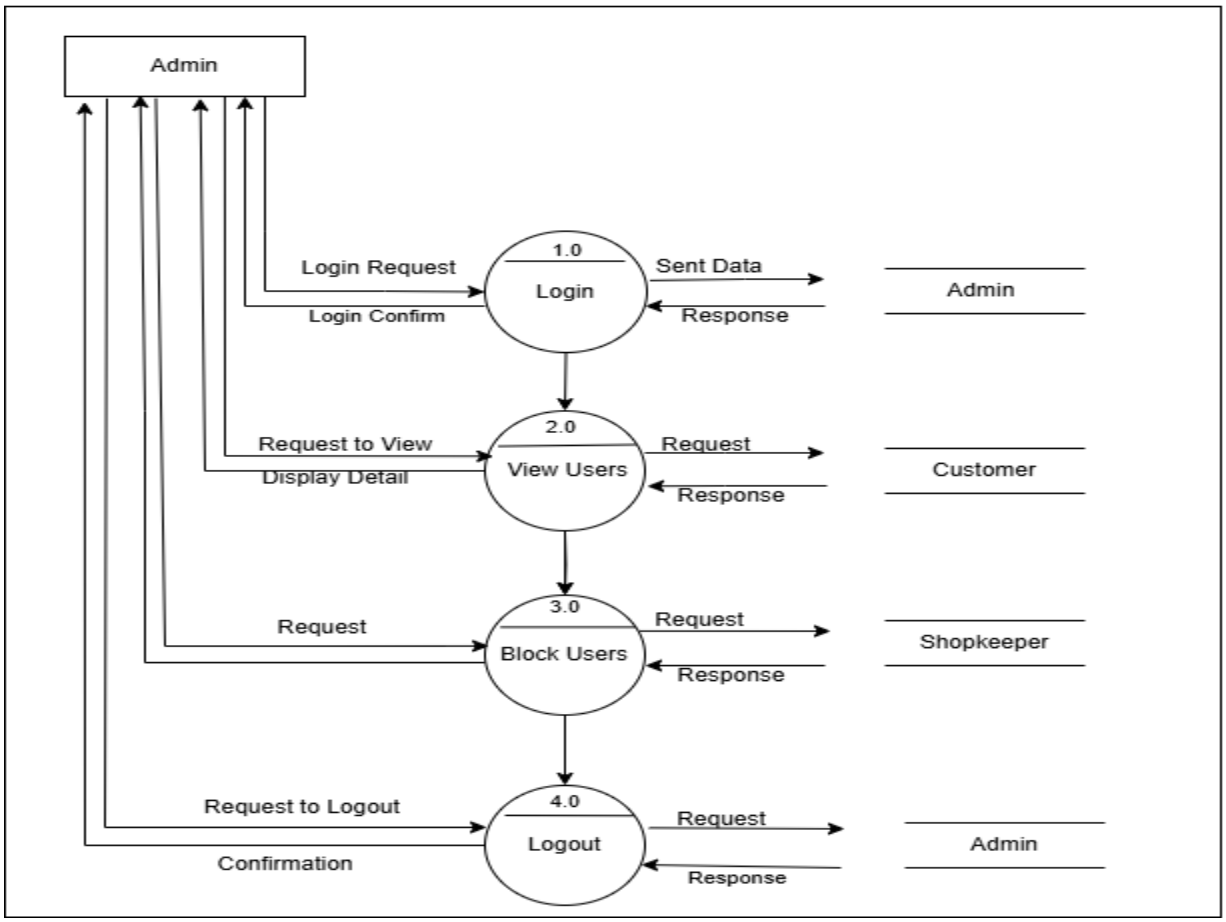


Figure 16 : Data Flow Diagram Of Admin

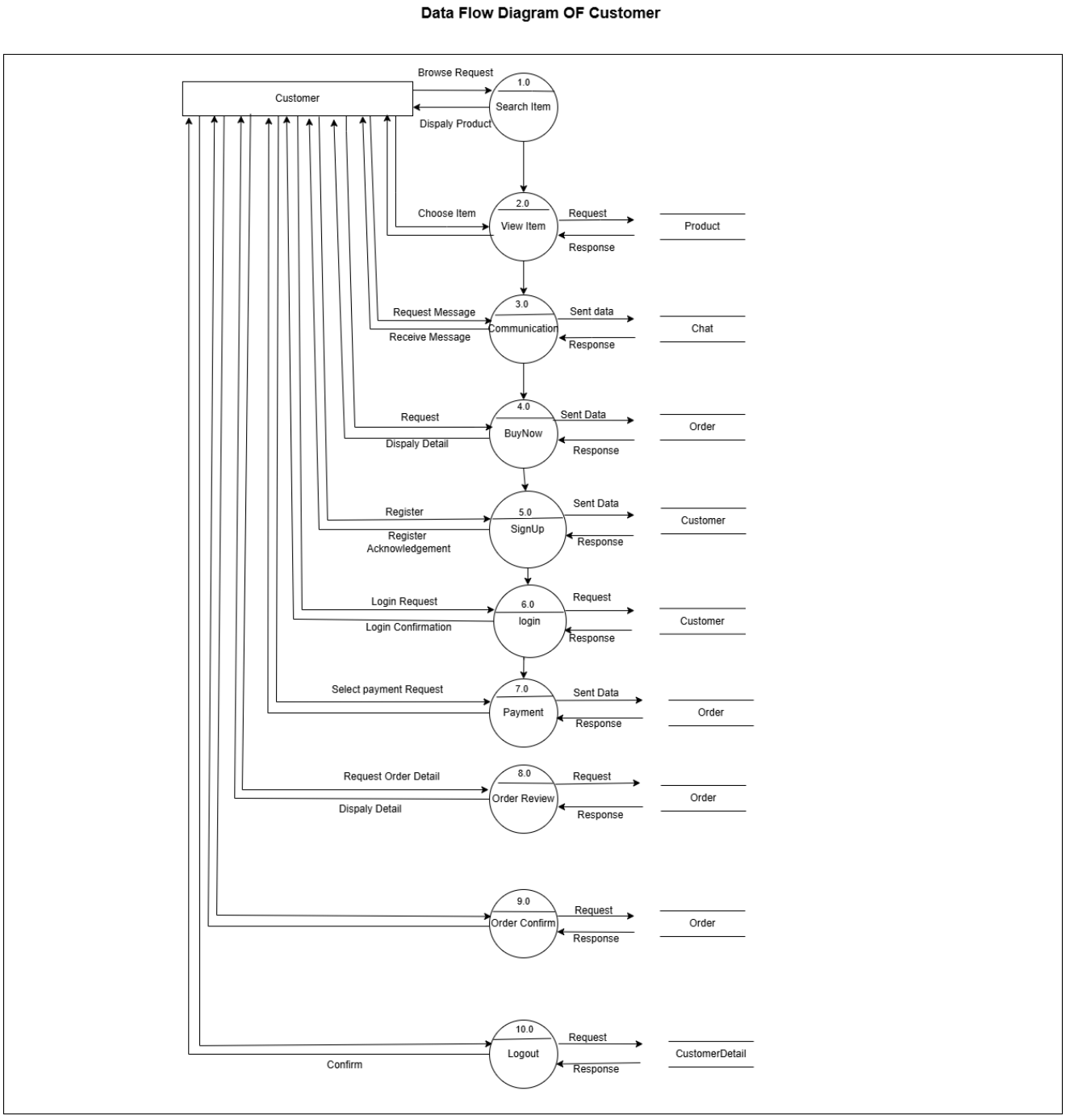


Figure 17 : Data Flow Diagram Of Customer

10.8 Component Level Diagram

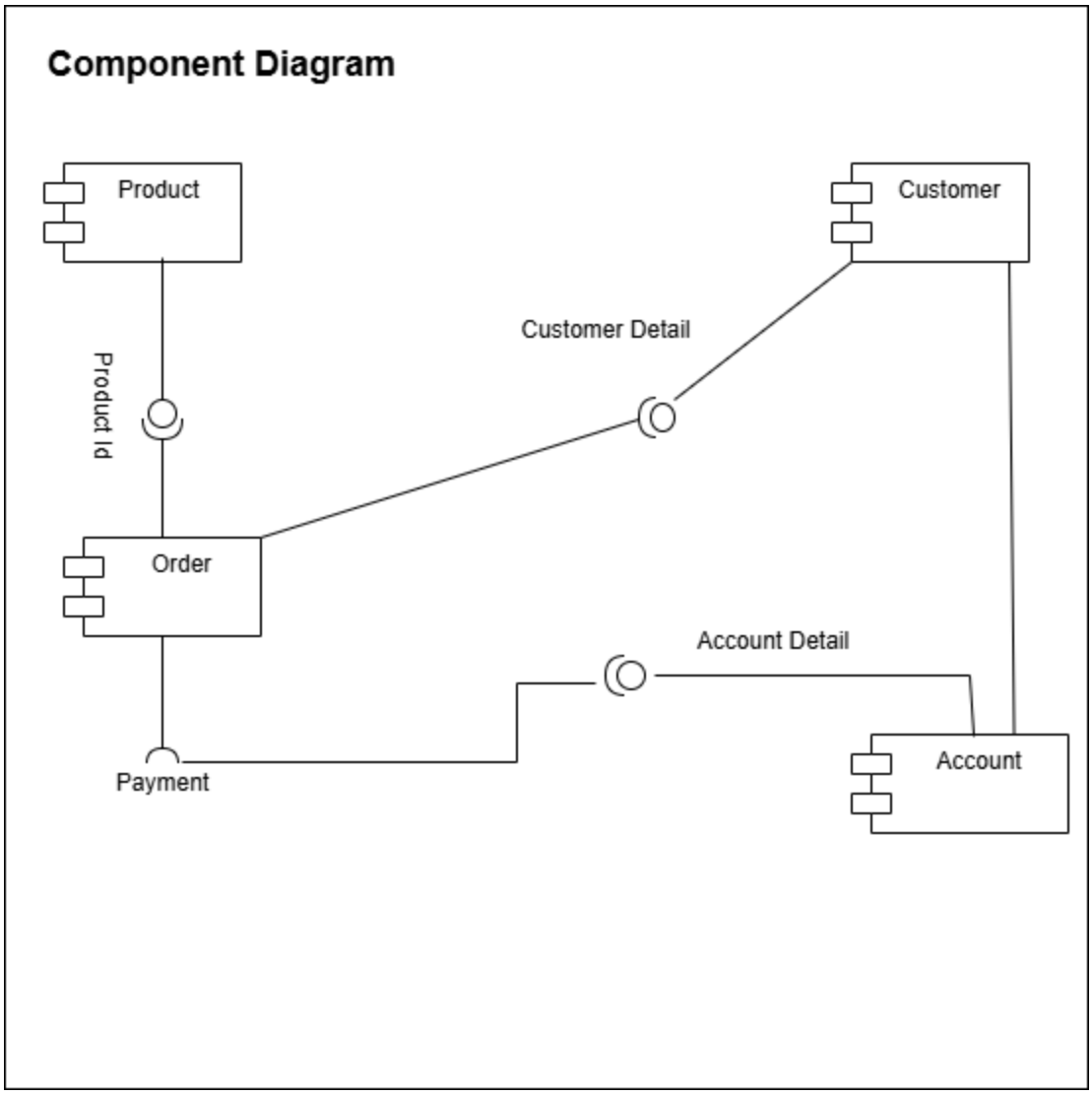


Figure 18: Component Level Diagram

11. APPLICATION ARCHITECTURE

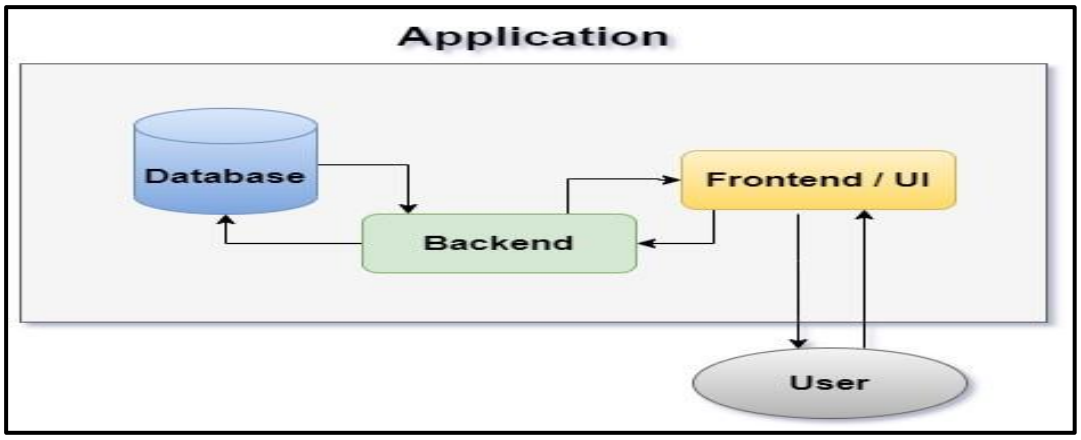


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Figure 19: Application Architecture

12. USER INTERFACE

The **User Interface (UI)** for my project is a crucial component that determines how users interact with the system. Below is an outline of the key elements and design principles that should be considered when creating the UI for your project.

Design Principles

Simplicity: The UI should be clean and straightforward, avoiding unnecessary complexity. Users should be able to navigate the system with minimal effort.

Consistency: Use consistent colors, fonts, and layouts across the application to provide a uniform experience.

Responsiveness: The interface should be responsive, adjusting seamlessly to different screen sizes and devices.

Feedback: Provide immediate feedback for user actions, such as button clicks or form submissions, to confirm that the action was successful.

Ensure that the UI is accessible to all users, including those with disabilities

12.1 Customer Login Page

12.2 Shopkeeper Login Page

12.3 Customer Sign Up Page

12.4 Shopkeeper Sign Up Page

12.5 Main Page

12.6 Product Detail Page

12.7 Shopkeeper Profile

13. TEST CASES

Introduction to Test Case

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design, and coding. A strategy for software testing integrates software test case design methods into a well-planned series of steps that result in the successful construction of software.

Testing Objectives

- To find error in the developed software.
- To check that working of the software function is according to the specifications.
- Their behavior and performance requirement are fulfilled.
- To check the reliability and quality of the software.

13.1. Admin Test Case Description

Admin Login

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/fail
TC_1	Admin must have a registered account.	Enter username and password.	Positive Case	The Application Display toast of "Logged in Successfully".	The application display main activity.	Pass
		Wrong username and password	Validation Check	The Application throw an error and prevent login	Application Display "Wrong Input"	Fail

View Customer Details

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	*Actual Result*	*Pass/Fail*
TC_2	Admin is logged in, and customer data is available in the system.	Select Customer	Positive Case	The system should display detailed information about the selected customer.	The system display a customer login detail	Pass
		Admin attempts to view a non-existent customer record.	Validation Check	The system should display an error message: "Customer not found."	The system failed to retrieve customer details.	Fail

Forget Password

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_3	Admin must have a registered account and access to the system.	Reset password using the "Forgot Password" feature.	Positive Case	The application sends a password reset link via email.	The password reset link is sent successfully.	Pass
		Invalid or unregistered email used for password reset.	Validation Check	The application displays an error message: "Email not found."	The application shows the correct error message.	Pass

View Shopkeeper Detail

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	*Actual Result*	*Pass/Fail*
TC_4	Admin is logged in, and Shopkeeper data is available in the system.	Select Shopkeeper	Positive Case	The system should display detailed information about the selected Shopkeeper.	The system display a Shopkeeper login detail.	Pass
		Admin attempts to view a non-existent Shopkeeper record.	Validation check	The system should display an error message: "Shopkeeper not found."	The system failed to retrieve Shopkeeper details.	Fail

Block User

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_5	Admin is logged in and user data is available.	Select user and click "Block User".	Positive Case	The system should block the user and display a success message.	The user was successfully blocked, and a message displayed.	Pass
		Attempt to block a non-existent user.	Validation Check	The system should display an error message: "User not found."	The application displayed "User not found."	Pass

Admin Logout

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_6	Admin must be logged in.	Click on the logout button.	Positive Case	The system should expire the current session and log out the admin.	The system expired the session and logged out the admin.	Pass
		Admin tries to access the dashboard after logout.	Validation Check	The system should redirect the admin to the login page.	The system allowed access to the dashboard after logout.	Fail

13.2 Customer Test Case Description

Customer Sign Up

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/fail
TC_1	User is not Registered	Enter username and password.	Positive Case	The Application Display toast of "Your Account Created Successfully".	The application display main activity.	Pass
		Wrong username and password	Validation Check	The Application throw an error and prevent Sign Up	Application Display "Wrong Input"	Fail

Customer Login

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/fail
TC_2	Customer must have a registered account.	Enter username and password.	Positive Case	The Application Display toast of "Logged in Successfully". And Redirect to the main Page	The application display main Page	Pass
		Wrong username and password	Validation Check	The Application throw an error and prevent login	Application Display "Wrong Input"	Fail

Forget Password

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_3	Customer must have a registered account and access to the system.	Reset password using the "Forgot Password" feature.	Positive Case	The application sends a password reset link via email.	The password reset link is sent successfully.	Pass
		Invalid or unregistered email used for password reset.	Validation Check	The application displays an error message: "Email not found."	The application shows the correct error message.	Pass

Search Item

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_4	Items are listed in the system.	Search for a specific item.	Positive Case	The system displays the details of the searched item.	The system displayed item details.	Pass
		Search for a non-existent item.	Validation Check	The system displays "Item not found."	The system displayed the correct error.	Pass

Place Order

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_5	Customer is logged in, and items are visible.	Select an item. Click "Buy Now" and proceed to the payment screen.	Positive Case	The system should redirect the customer to the payment screen and save the order in the system.	The System Redirect the Customer and also save the order record.	Pass
		Proceed with an invalid payment method	Validation Check	The system should save the order record in the system.	The order record was not saved in the system.	Fail

Order Confirmation

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_6	Payment is successful.	Click on "Confirm Order".	Positive Case	The system displays a confirmation message and saves order details in the database.	The system displayed the confirmation and saved the order.	Pass
		Click on "Confirm Order" with an invalid payment status.	Validation Check	The system displays an error message: “Payment unsuccessful.”	The system displayed the correct error.	Pass

Communicate with shopkeeper

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_7	Customer and shopkeeper are registered.	Customer initiates chat with shopkeeper.	Positive Case	The system successfully exchanges messages between the customer and shopkeeper.	Messages exchanged successfully.	Pass
		Customer sends message when offline.	Validation Check	The system stores the message and delivers it when the shopkeeper comes online.	The system delivered the stored message later.	Pass

Customer Feedback

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_8	Customer has completed a purchase.	Submit feedback through the app.	Positive Case	The system successfully submits the feedback and displays a message.	The feedback was submitted successfully.	Pass
		Submit feedback without text input.	Negative Case	The system displays an error message: "Feedback cannot be empty."	The system displayed the correct error.	Pass

Customer Logout

Test case ID	Preconditions	Test Case	Case Type	Expected result	Actual result	Pass/Fail
TC_9	Customer must be logged in.	Click on the logout button.	Positive Case	The system should expire the current session and log out the admin.	The system expired the session and logged out the customer.	Pass
			Negative Case	The system should expire the current session and log out the customer.	The session is not expired, and the customer remains logged in.	Fail

13.3 Shopkeeper Test Case

Shopkeeper Sign Up

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/fail
TC_1	User is not Registered	Enter valid username and valid password.	Positive Case	The Application Display toast of "Your Account Created Successfully".	The application display Shopkeeper Profile.	Pass
		Wrong username and password	Validation Check	The Application throw an error and prevent Sign Up	Application Display "Wrong Input"	Fail

Shopkeeper Login

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_2	Shopkeeper must have a registered account.	Enter username and password.	Positive Case	The Application Display toast of "Logged in Successfully".	The application displays main activity.	Pass
		Wrong username and password.	Validation Check	The Application throws an error and prevents login.	Application displays "Wrong Input".	Fail

Add Product

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_3	Shopkeeper is logged in.	Add product details.	Positive Case	The system saves the product and displays confirmation.	The system saved the product successfully.	Pass
		Add product with missing Field.	Validation Check	The system displays an error: "Missing information."	The system displayed the correct error.	Pass

Manage Product

Test Case ID	Preconditions	Test Case	Expected Result	Actual Result	Pass/Fail
TC_4	Shopkeeper is logged in and products are available.	Edit or delete a product. Confirm changes.	The system should update or delete the product as requested.	The system provide a update message after deletion or edition of product	Pass

Manage Order

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_5	Shopkeeper is logged in and products are available.	Go manage Orders" section and manage the order status	Positive Case	The system should display order details or update the order status.	System Display order detail and update status	Pass

Communicate with Customer

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_6	Shopkeeper and Customer are registered.	Shopkeeper initiates chat with Customer.	Positive Case	The system successfully exchanges messages between the customer and shopkeeper.	Messages exchanged successfully.	Pass
		Shopkeeper sends message when offline.	Validation Check	The system stores the message and delivers it when the shopkeeper comes online.	The system delivered the stored message later.	Pass

Forget Password

Test Case ID	Preconditions	Test Case	Case Type	Expected Result	Actual Result	Pass/Fail
TC_7	Shopkeeper must have a registered account and access to the system.	Reset password using the "Forgot Password" feature.	Positive Case	The application sends a password reset link via email.	The password reset link is sent successfully.	Pass
		Invalid or unregistered email used for password reset.	Validation Check	The application displays an error message: "Email not found."	The application shows the correct error message.	Pass

Shopkeeper Logout

Test case ID	Preconditions	Test Case	Case Type	Expected result	Actual result	Pass/Fail
TC_8	Shopkeeper must be logged in.	Click on the logout button.	Positive Case	The system should expire the current session and log out the Shopkeeper.	The system expired the session and logged out the customer.	Pass
			Negative Case		After logout the shopkeeper can add or update a product	Fail

14. CRITICAL PATH METHOD

CPM models the activities and events of a project as a network. Activities are depicted as nodes on the network and events that signify the beginning or ending of activities are depicted as arcs or lines between the nodes. The following is an example of a CPM network diagram: Steps in CPM Project Planning.

1. Specify the individual activities.
2. Determine the sequence of those activities.
3. Draw a network diagram.
4. Estimate the completion time for each activity.
5. Identify the critical path (longest path through the network)
6. Update the CPM diagram as the project progresses.

Specify the Individual Activities

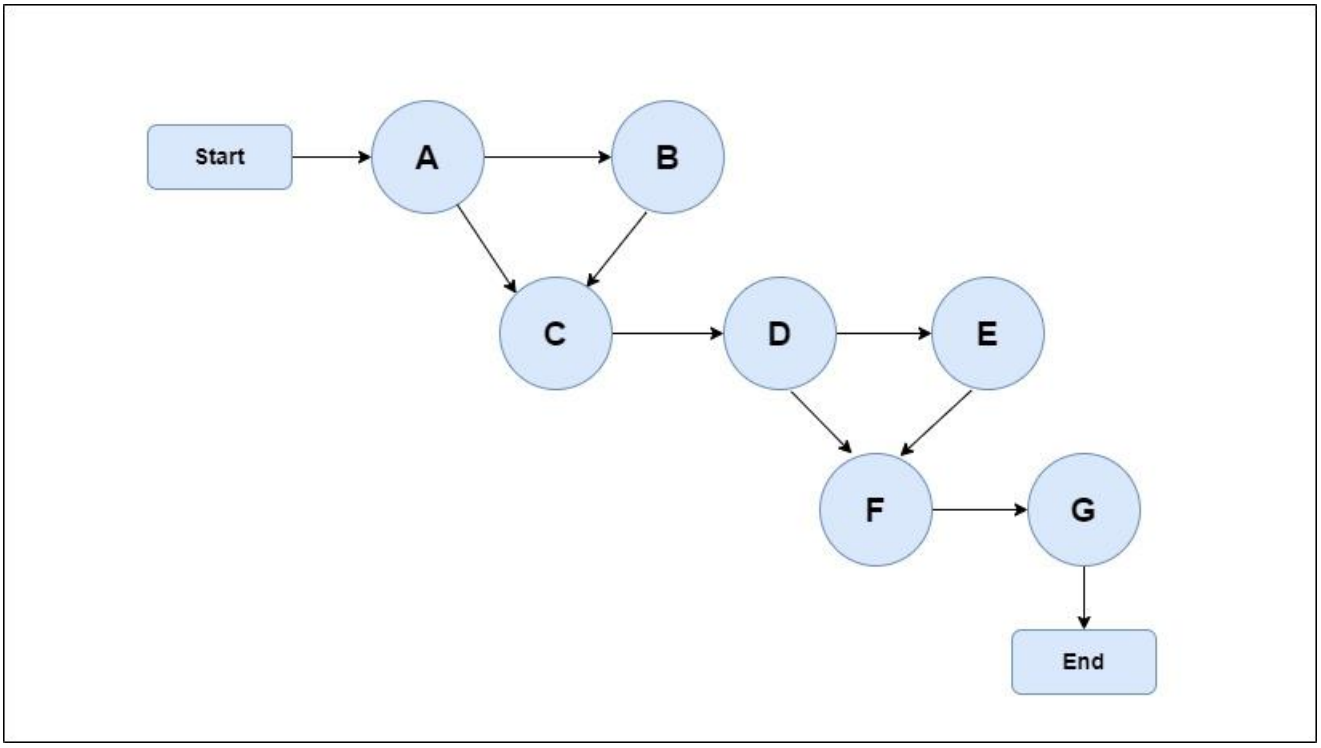
Activity ID	Activity Description
A	Planning
B	Requirements
C	Analysis
D	Design
E	Coding

F	Testing
G	Deployment

Determine the Sequence of the Activities

Activity ID	Dependency
A	None
B	A
C	A, B
D	C
E	D
F	D, E
G	F

Draw the Network Diagram



Estimate Activity Completion Time

Activity ID	Dependency	Duration (days)
A	None	25
B	A	30
C	A, B	25
D	C	45

E	D	75
F	D, E	30
G	F	4

Identify the Critical Path

Determining the following six parameters for each activity, which can identify the critical path:

ES: earliest start time: the earliest time at which the activity can start given that its precedent activities must be completed first.

ES (I) = max [EF (G): G is an immediate predecessor of I]

EF: earliest finish time: equal to the earliest start time for the activity plus the time required to complete the activity.

EF (I) = ES (I) + Dur (I)

LF: latest finish time: the latest time at which the activity can be completed without delaying the project.

LF (I) = min [LS (G): G is a successor of I]

LS: latest start time: equal to the latest finish time minus the time required to complete the activity.

LS (I) = LF (I) – Dur (I)

TS: Total Slack: the time that the completion of an activity can be delayed without delaying the end of the project

TS (I) = LS (I) – ES (I)

FS: Free Slack: the time that an activity can be delayed without delaying both the start of any succeeding activity and the end of the project.

FS (I) = min [ES (G): G is successor of I] – EF (I)

Activity	Duration	ES	EF	LS	LF	TS	FS
A	25	0	25	0	25	0	0
B	30	25	55	25	55	0	0
C	25	55	80	55	80	0	0
D	45	80	125	80	125	0	0
E	75	125	200	125	200	0	0
F	30	200	230	200	230	0	0
G	4	230	234	230	234	0	0

The slack time for an activity is the time between its earliest and latest start time, or between its earliest and latest finish time. Slack is the amount of time that an activity can be delayed past its earliest start or earliest finish without delaying the project.

The critical path is the path through the project network in which none of the activities have slack, that is, the path for which ES = LS and EF = LF for all activities in the path. A delay in the critical path delays the project. Similarly, to accelerate the project it is necessary to reduce the total time required for the activities in the critical path.

Update CPM Diagram

As the project progresses, the actual task completion times will be known, and the network diagram can be updated to include this information. A new critical path may emerge, and structural changes may be made in the network if project requirements change.

The critical path is:

Start → A → B → C → D → E → F → G →End

15. RISK LIST

15.1. Technical Risks

Risk	Likelihood	Impact	Problem	Solution
Issues with payment systems	Medium	High	Payments may fail or not process properly.	Test payment methods regularly and use trusted gateways.
Website slows down with heavy users	High	High	The website may become very slow if too many people use it.	Upgrade servers and optimize the website's performance.
Data security issues	Medium	High	Customer data may get hacked or leaked.	Use strong encryption and security measures.

15.2. Operational Risks

Risk	Likelihood	Impact	Problem	Solution
Shopkeepers delay uploading products	High	Medium	Shopkeepers may not update or add products on time.	Send reminders and provide an easy way to upload items.
Low customer engagement	Medium	High	Customers may lose interest and stop using the platform.	Offer promotions, discounts, and loyalty rewards.

15.3. Project Risks

Risk	Likelihood	Impact	Problem	Solution
Adding too many features	Medium	High	Adding extra features can delay the project.	Focus on the most needed features and set clear priorities.
Delay in decision-making	Medium	Medium	Teams may take too long to make decisions.	Hold regular meetings and set deadlines for feedback.

15.4. Dependency Risks

Risk	Likelihood	Impact	Problem	Solution
Relying on third-party tools	Medium	High	Payment gateways or SMS tools may fail.	Choose reliable tools and have backups ready.
Dependence on external developers	Medium	High	Developers may delay important updates or fixes.	Set clear contracts with deadlines.

15.5. Financial Risks

Risk	Likelihood	Impact	Problem	Solution
Project goes over budget	Low	High	Costs may exceed the planned budget.	Monitor expenses and set aside extra funds.
Shopkeepers don't pay fees	Medium	Medium	Shopkeepers may not want to pay to join the platform.	Offer free trials and show the benefits of joining.

16. REQUIREMENT TRACEABILITY MATRIX

The requirements trace-ability matrix is a table used to trace project life cycle activities and work products to the project requirements. The matrix establishes a thread that traces requirements from identification through implementation.

Requirement ID	Build	Requirement Description	Category	Use Case Name
R1	1.0	Customers can browse products from shopkeepers.	Online	Browse Products
R2	1.0	Customers can add products to the cart.	Online	Add Products
R3	1.0	Customers can place orders and proceed to payment.	Online	Place Orders and Payment
R4	1.0	Shopkeepers can create and update their profiles.	Online	Shopkeeper Sign Up
R5	1.0	Admin can monitor shopkeepers' and customers' activities.	Online	View User
R7	1.0	Customers can customize products before adding them to the cart.	Online	Communication With Shopkeeper

17. PROJECT/PRODUCT COSTING

A metric is a measurement that provides insights into a product or process throughout the development lifecycle. Metrics are broadly categorized into two types:

- **Knowledge oriented metrics**: These metrics are used to track the process, helping to evaluate, predict, or monitor various aspects of the development process.
- **Achievement oriented metrics**: These metrics focus on measuring specific product attributes, often related to the overall quality of the product.

Most cost estimation efforts rely on algorithmic cost modeling, where costs are analyzed using mathematical formulas that link costs or inputs with metrics to estimate outputs. These formulas are derived from historical data analysis. The accuracy of the cost estimation model can be improved by calibrating it to the specific development environment, which involves adjusting the metrics' weightings.

17.1 Project Cost Estimation by Function Point Analysis

Information domain values are define in the following manner:

Project Cost Estimation by Functional Point Analysis

Customer Inputs:

- Customer Registration (Username, Email, Password)
- Customer Login (Email, Password, Forget Password)
- Search Products
- Input Order Details
- Add to Cart
- Chat with Customer
- Add Feedback
- Logout

Shopkeeper Inputs:

- Shopkeeper Registration
- Shopkeeper Login

- Add Product
- Edit Product
- Delete Products
- Respond to Chat
- Update Order Status
- Logout

Admin Inputs:

- Admin Login
- View Users
- Block Users
- Logout

No. Of Customer Outputs:

- View Products List
- View Product Details
- View Shopkeeper Profile
- Chat Responses from Shopkeeper
- Display Receipt After Order

No. Of Shopkeeper Outputs:

- View Customer Orders
- Notifications for New Orders
- Feedback Display
- View Chats of Customer

No. Of Admin Outputs:

- View User Statistics

External Inquiries (EQ):

- Filter/Search Products by Category/Price
- Search Shopkeepers
- View Order Details
- View Products
- View Customer Profiles

Internal Logical Files (ILF):

- Customer Profile
- Orders Database
- Shopkeeper Profile
- Product Database
- Order Database

External Interface Files (EIF):

- Payment Gateway
- Location Service
- Chat/Notification System

Total EIs:16

Total Eos:10

Total EQs: 5

Total ILFs: 5

Total EIFs: 3

Weights of Five Functional Point Attributes

Measurement Parameters	Low	Average	High
Number of external inputs	3	4	6
Number of external Outputs	3	5	8
Number of external Inquiries	2	3	5
Number of internal files	5	7	10
Number of external interfaces	4	6	9

Calculating Function Point:

Type Of Component	Count	Low	Average	High
External Inputs (EI)	16	3x16=48	**4x16=64**	6x16=96
External Outputs (EO)	10	4x10=40	**5x10=50**	7x10=70
External Inquiries (EQ)	3	3x3=9	**4x3=12**	6x3=18
Internal Logical Files (ILF)	5	7x5=35	**10x5=50**	15x5=75
External Interface Files (EIF)	3	5x3=15	**7x3=21**	10x3=30
Total Count			**197**	

17.2 Calculating Factors

Scaling	
0	Not applicable
1	Incidental
2	Moderate
3	Average
4	Significant
5	Essential

General System Characteristic(GSC)

No.	Characteristic	Rating (0-5)
1	Data Communications	4
2	Distributed Data Processing	3
3	Performance Requirements	4
4	Heavily Used Configuration	3
5	Transaction Rate	4
6	Online Data Entry	5
7	End-User Efficiency	5
8	Online Update	4
9	Complex Processing	3
10	Reusability	3
11	Installation Ease	4
12	Operational Ease	4
13	Multiple Sites	3
14	Facilitate Change	5
Total	**∑(Fi)**	**55**

Finally, Total Project Cost and Total Project Effort are calculated given the average productivity parameter for the system.

VAF=0.65+(0.01×GSC Sum)
VAF= 1.2

FP. est = Total Count *VAF
= 197*1.2
= 236.4

16.3 Project Effort Estimation

Total productivity of the organization=29.55

Effort=FA/Productivity

Effort=236.4/29.55

Effort=8.0 Person-Month

16. 4 Project Cost Estimation

Labor rate =20000 Rs

Productivity parameter =29.55

Cost/FP= Labor rate/Productivity=

20000/29.55

=676.8

16.5 Total Project Cost

=Cost/FP* FP. Est

=676.8*236.4

=159806.4 PKR

19. SCREEN IMAGES

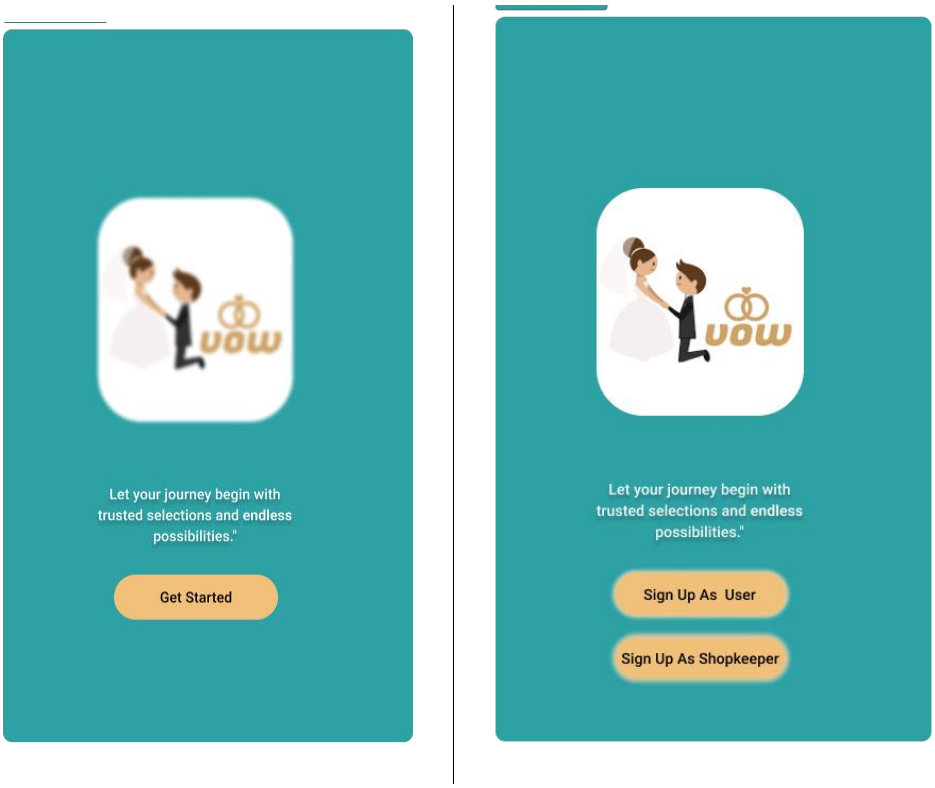


Figure 20: Get Started Page

Figure 21: Product Detail Page

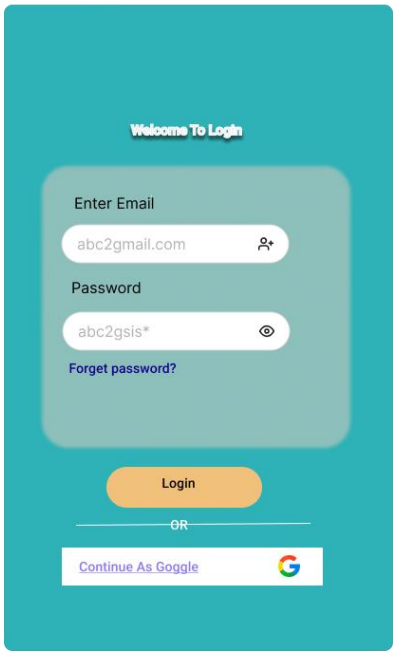


Figure 22: Login Screen

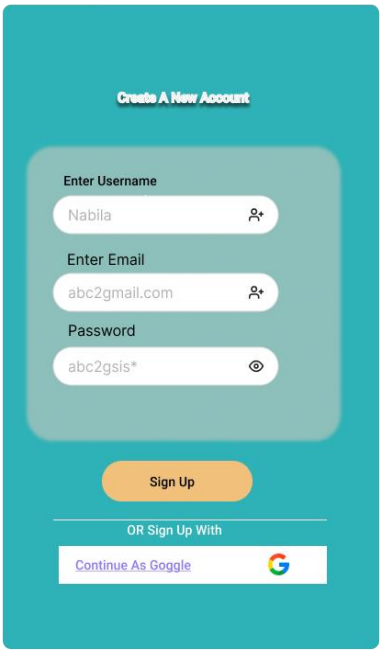


Figure 23: Sign Up Screen

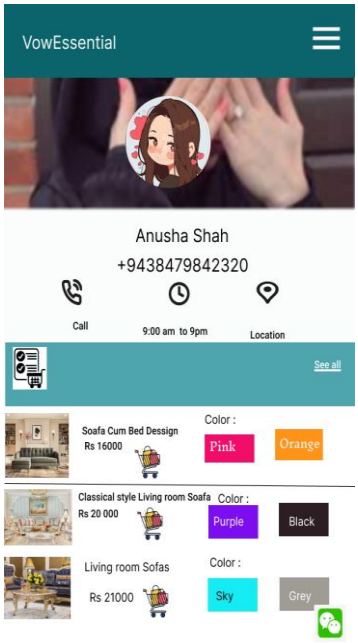


Figure 24: Shopkeeper Profile Screen

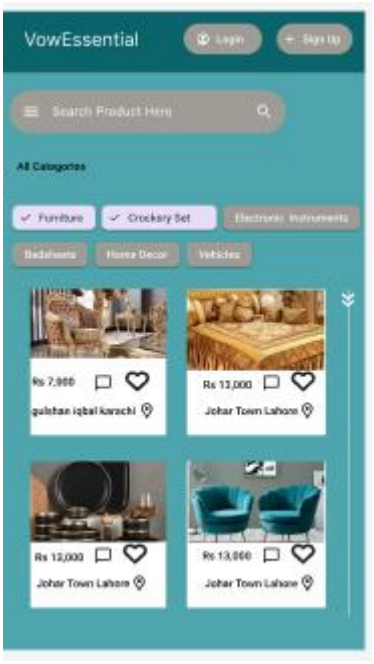


Figure 25:Main Screen

20. CONCLUSION

---------- after papers ----------

21. FUTURE WORK

------ after papers --------

22. REFERENCES

---- after papers ------