



## **Final Year Project**

### **FYP Interim Report**

**SuSankhya**

**CS6P05NP**

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**Date of Submission: 2025-01-08**

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**Declaration: -**

*I confirm that I understand my coursework needs to be submitted on MST (My Second Teacher) classroom under the relevant module page before the deadline for my assignment to be accepted and marked. I am fully aware that late submission will be treated as non-submission and a mark of zero will be awarded.*

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# 1 Introduction

## 1.1 Current Scenario

In the current scenario, online mobile shopping has experienced significant growth in recent years. Increased internet reach to every corner of the world has made online shopping accessible to wider audiences. It offers the convenience of purchasing products from any place, saving time and effort to physically reach to the store. For the businesses, it provides a free virtual property. Online shopping prevents the necessity of having physical space and its related high expenses in the current scenario (<https://brainly.in/question/60320814>, n.d.).

Why the trend in the online mobile shopping in Nepal ? Platforms like TikTok, Instagram and other social media businesses are providing users facilities to discover and purchase products directly within their social feeds. Businesspeople do not have to make physical space, pay rents as they can directly show their mobile phones on the website and interact with the customer. Customers also won't have to make time for shopping, reaching far places. They can easily access the online shops through their smartphones and do the shopping. Through this technology, customers can interact with similar groups of them, making a community where one can gain the reviews and experiences. (<https://brainly.in/question/60320814>, n.d.)

## 1.2 Problem Statement and Project Solution

Problems faced by traditional mobile shopping are:

- **Limited Product Selection:** Customers are prone to the limited stocks of local stores.
- **Geographical Challenges:** Some customers can be far from the store location making business less profitable.
- **Time Consuming:** Shopping in physical stores is time consuming for customers who have limited free times.



- **Price Variations:** Different stores can have different price ranges due to the location of stores creating disputes among the stores and confusion to customers.
- **High Rent Costs:** Retailers must pay periodically rents for the stores.
- **Location based limitations:** The cost of rent can vary widely depending on location, hindering the profitability of the business.
- **Hire of Staffs:** Staffs need to be hired for local stores and they must be paid periodically even during loss times. Also, good and skillful staffs need to be hired which can be very challenging.

Solutions as Online Mobile Shopping are:

- **Optimization of Physical Space:** Online Mobile Shopping minimizes the need for physical space by utilizing the products for warehousing only.
- **Personal Recommendations:** Online retailers can leverage customer data to offer personalized feedback and recommendations.
- **Easy Accessibility:** Customers can easily access the online mobile store and shop from anywhere, anytime, eliminating physical travel.
- **Time Optimization:** Customers can save their valuable time as they can access the store from anywhere at free time.
- **Detailed Product Information:** Customers can easily access the detailed specs of the mobile products.
- **Product Selection Diversity:** Online platforms provide access to a wide range of products, often exceeding the inventory of physical stores.

### 1.3 Scope of the Project

Scope of the Project defines what is included and what is excluded of a project.

**What's included (In-Scope):**

- **Project Focus:** The project aims to deliver customer friendly mobile selling website.
- **Deliverables:** The project sells mobile phones only. Mobile phones with different brands are to be focused on.

- **Features and Functionality:** The project offers seamless payment transactions, order tracking, phone comparison, statistical features.
- **Project Timeline:** The expected project timeline is of 9 months and further future work will be updated.

#### **What's excluded (Out-of-Scope)**

- **Features and Functionality:** Detailed filtering features such as color, dimension, materials are excluded. Other search features such as Image and Voice search are excluded. Chat features with other customers are excluded.
- **Localization:** The project does not support multiple languages.
- **Marketing:** Ads and Marketing of the project is not included.
- **Customer Support:** Customer support is based on emails only.

### **1.4 Aims and Objectives**

The main aims of the project are as follows:

- To deploy a customer friendly mobile shopping website.

The main objectives of the project are as follows:

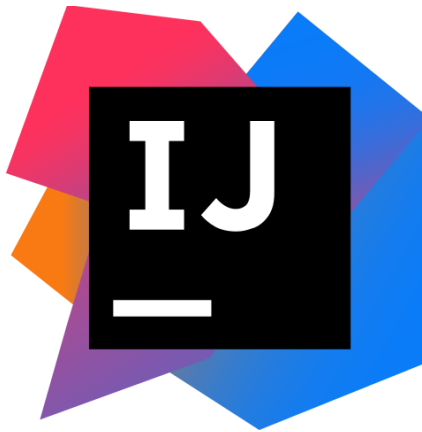
- To deliver seamless shopping experience to customers.
- To ensure secure payment options to the users.
- To prioritize customer satisfaction.
- To sell the products in reasonable prices.
- To provide wide range of mobile products to the customer.
- To sell best quality products to the customer.

## 1.5 Resources Required

Resources are the building blocks of the project. Resources that are to be used in this project are:

### 1. IntelliJ IDEA

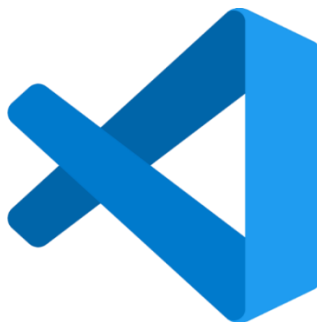
IntelliJ IDEA is an integrated development environment written in Java for developing computer software using Java, Kotlin, Groovy, and other JVM based languages.



*Figure 1 IntelliJ IDEA*

### 2. Visual Studio Code

Visual Studio Code is an integrated development environment developed by Microsoft for Windows, Linux, macOS and web browsers. It is very popular for Html, CSS and JavaScript.



*Figure 2 Visual Studio Code*

### 3. Hyper Text Markup Language (HTML)

Hyper Text Markup Language is the standard markup language for documents designed to be displayed in the web browser. It defines the content and structure of the web page.



*Figure 3 Hyper Text Markup Language*

### 4. Cascading Style Sheets (CSS)

Cascading Style Sheets is a style sheet language used for specifying the presentation and styling of a document written in a markup language such as HTML or XML.



*Figure 4 Cascading Style Sheets*

## **5. Figma**

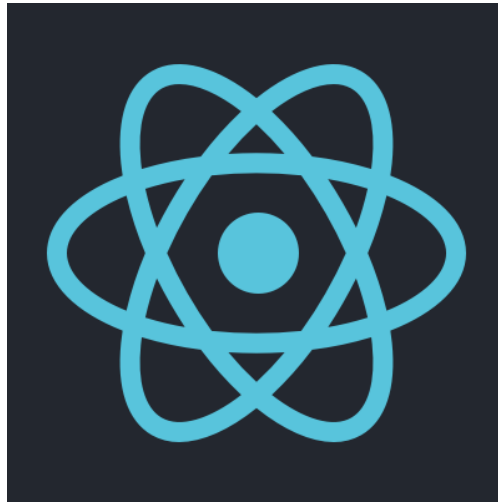
Figma is a collaborative web application for interface design.



*Figure 5 Figma*

## 6. React

React is a library for web and native user interface. React is free and open source frontend JavaScript library that makes building user interfaces based on components.



*Figure 6 React*

## 7. Spring Boot

Spring Boot is an open-source Java framework used for making spring-based applications. It makes easy to create stand-alone, production-grade applications.



*Figure 7 Spring Boot*

## 8. MySQL

MySQL is an open-source relational database management system.



*Figure 8 MySQL*

## 9. MySQL Workbench

MySQL Workbench is a visual database design tool that integrates SQL development, database design, creation and maintenance into a single tool.



*Figure 9 MySQL Workbench*

## 2 Background

My online mobile shopping platform is a website-based platform that offers a simple and efficient way for customers to discover and purchase products. Its user-friendly interface and secure payment options enables smooth user experience. I aim to provide a seamless experience, from browsing to checkout, ensuring customer satisfaction at every step. My website is designed to be accessible and convenient, making it a go-to destination for online shoppers.

## 2.1 Review of Articles and Journals

### 2.1.1 Technology-Based Buying Selling Services



Figure 10 Technology-Based Buying Selling Services

This project focuses on developing an e-commerce application for a mobile phone. The primary objective of this project is to expand the store's reach beyond the local region by providing convenient online services for customers located further away (Eti Sri Asih, 2019).



## 2.1.2 The effect of Mobile Retailing




### Computers in Human Behavior

Volume 61, August 2016, Pages 548-555






Full length article

# The effect of mobile retailing on consumers' purchasing experiences: A dynamic perspective

Eleonora Pantano <sup>a</sup> , Constantinos-Vasilios Priporas <sup>b</sup>  


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<https://doi.org/10.1016/j.chb.2016.03.071> 

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*Figure 11 The effect of Mobile Retailing*

This is the research about the impact of mobile technologies on consumer behavior in the Italian retail market, where mobile selling is very new during the times. The study focuses on understanding the trend of consumers to use mobile shopping experiences (Eleonora Pantano, 2016).

### 2.1.3 System for Ecommerce Website Evaluation

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Informatics

#### A SYSTEM FOR E-COMMERCE WEBSITE EVALUATION

**Assoc. Prof. Ph.D. Snezhana Sulova**

University of Economics – Varna, **Bulgaria**

#### ABSTRACT

E-commerce involves the processes of selling and buying goods and services through the use of modern communication technologies and the Internet. The success of this form of commerce largely depends on the website through which the sales are carried out. Modern online e-commerce platforms are sophisticated applications that perform multiple functions. They are both a marketing tool that attracts customers, dynamic systems that allow interaction with the users, and the realization of transactions and a portal with useful information about the sold goods and services. For online retailers as well as for software developers, it's important to understand how effective the website, through which the online sales are done, is. This paper proposes a methodology for evaluating e-commerce websites. In order to understand the strengths and weaknesses of an e-shop, as a basic tool for doing business, we believe it is good to make a comprehensive assessment by means of a system of indicators grouped in the following sets: evaluation of the website's visitability; evaluation by specific e-commerce indicators; evaluation of the e-commerce website's functionality; evaluation of the e-commerce website as a marketing tool. Some

*Figure 12 System for Ecommerce website evaluation*

This article focuses on the importance of evaluating e-commerce websites for online retailers and software developers. The paper emphasizes on use of effective methodologies to create improvements in online business performance (Sulova, 2019).

## 2.2 Similar Applications

### 2.2.1 REMAX NEPAL

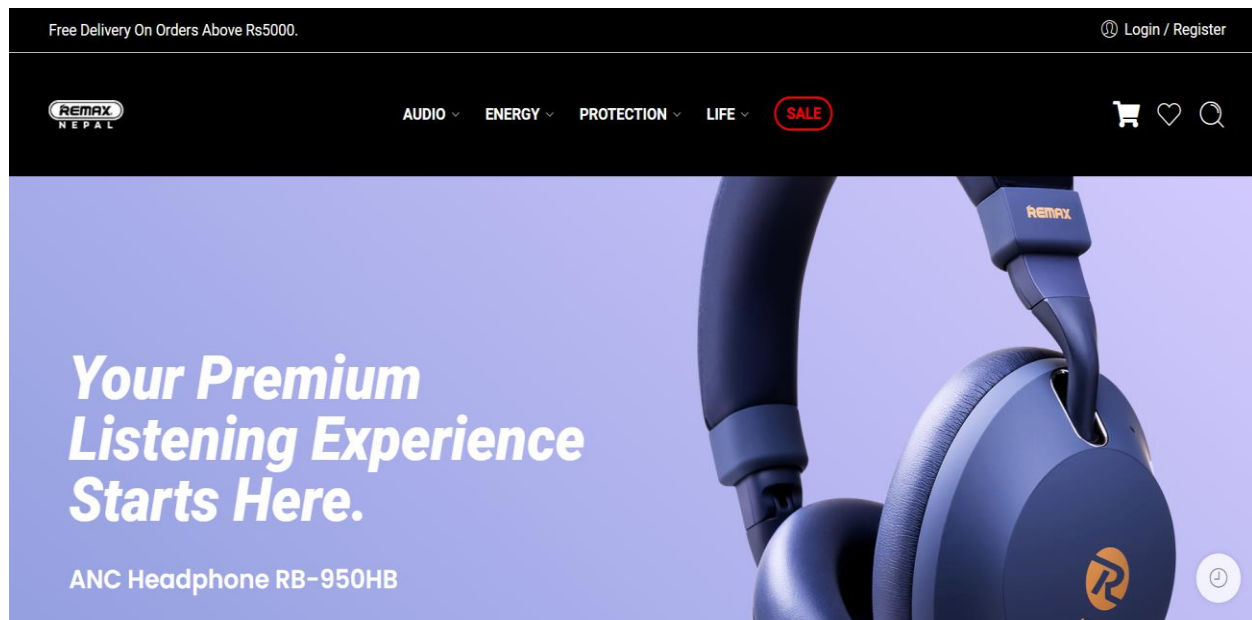


Figure 13 REMAX NEPAL

### 2.2.2 Oliz Store

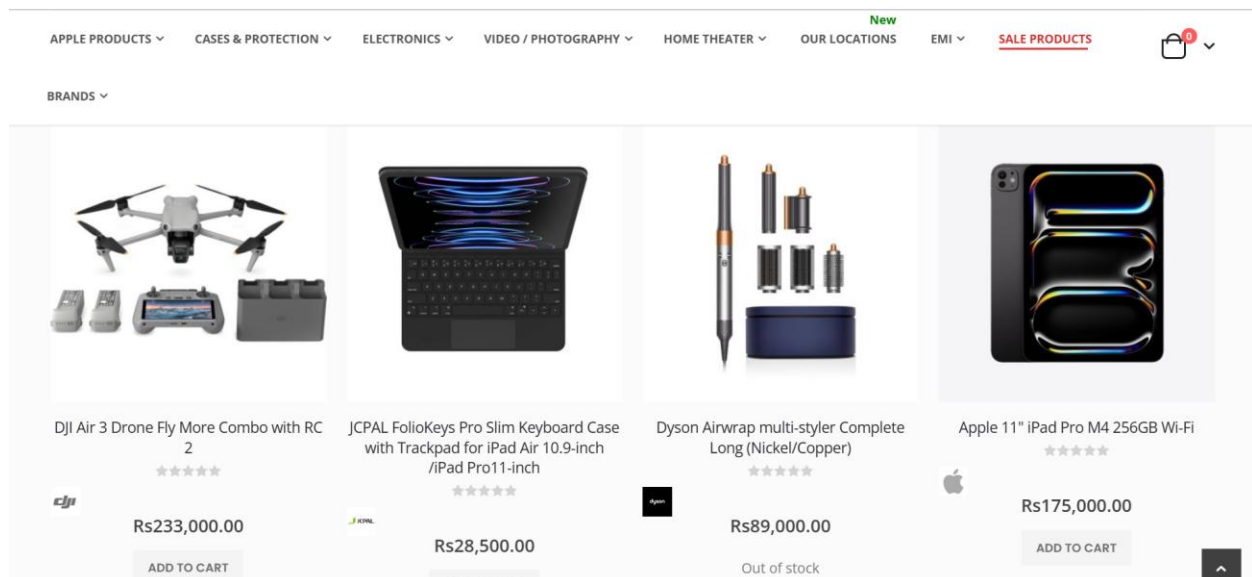


Figure 14 Oliz Store

## 2.2.3 Hukut

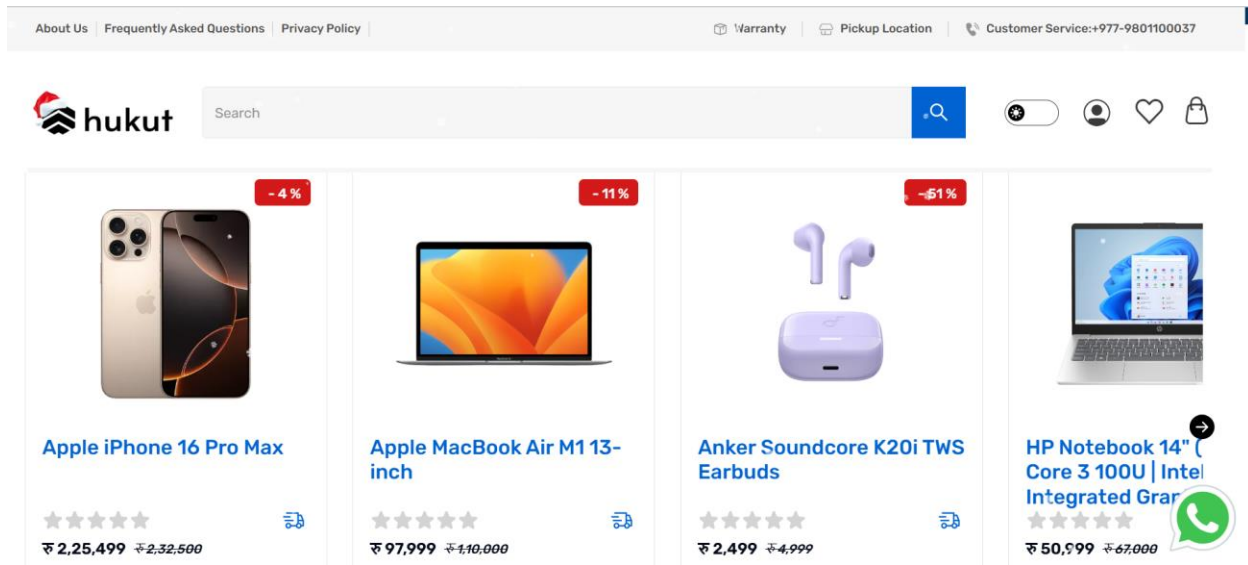


Figure 15 Hukut

## 2.2.4 EvoStore

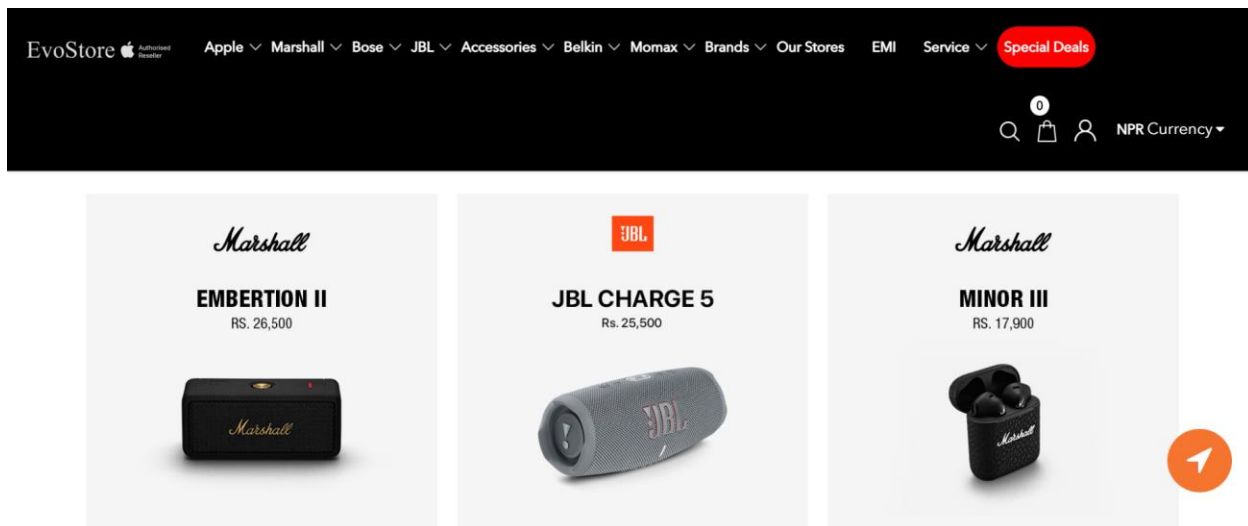


Figure 16 EvoStore

## 2.2.5 NeoStore

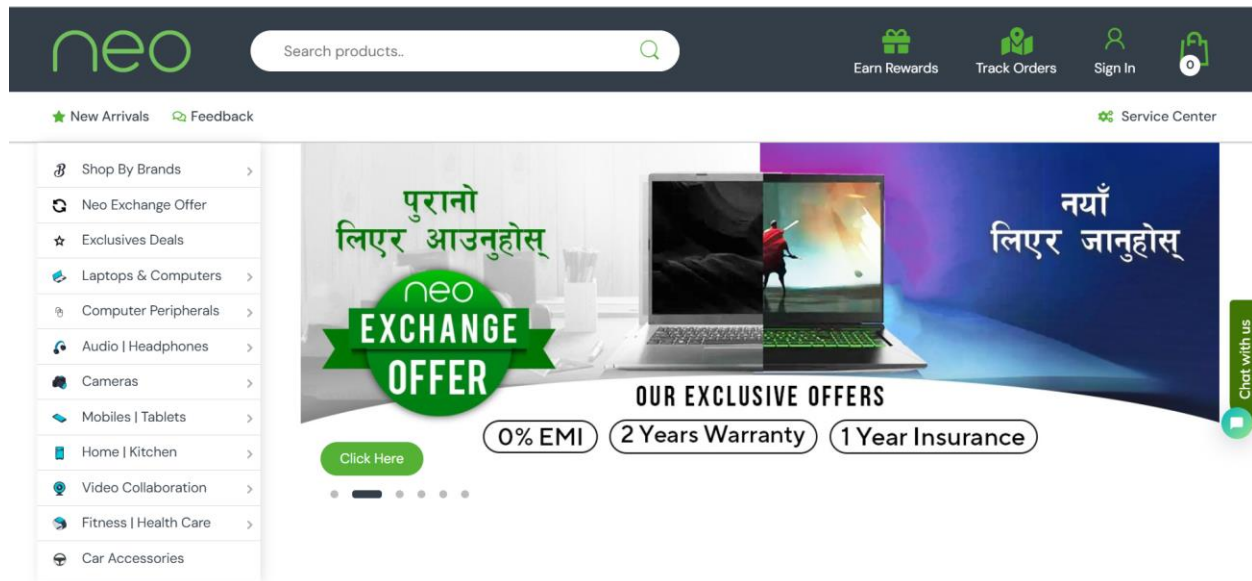


Figure 17 NeoStore

## 2.3 Comparison Table

Table 1 Comparison Table

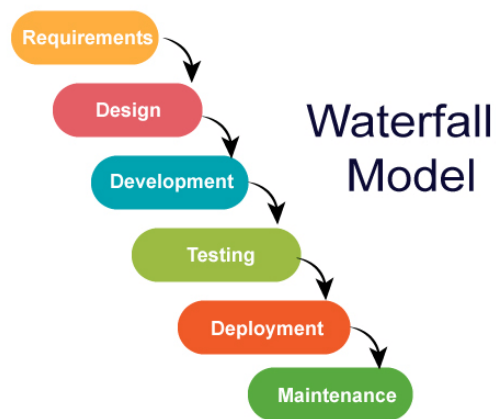
Features	SuSankhya	RemaxNepal	OlizStore	NeoStore	EvoStore	HukutStore
Payment	Khalti	eSewa	eSewa	eSewa	Khalti	eSewa
Search Filter	Yes	Yes	Yes	Yes	No	Yes
Order Tracking	Yes	No	No	Yes	No	No
EMI	Yes	No	Yes	No	Yes	No
Earn Rewards	No	Yes	No	yes	No	Yes
Chatbot	Yes	No	No	Yes	No	No

### 3 Methodology

#### 3.1 Different Methodologies Overview

- **Waterfall Methodology**

Waterfall Methodology is a type of methodology where each process phase cascades downward sequentially through five stages (requirements, design, implementation, verification, and maintenance) ([https://www.tutorialspoint.com/sdlc/sdlc\\_waterfall\\_model.htm](https://www.tutorialspoint.com/sdlc/sdlc_waterfall_model.htm), n.d.).



*Figure 18 Waterfall Methodology*

- **Agile Methodology**

Agile methodology is a popular approach to project management that emphasizes iterative development, collaboration, and flexibility (<https://www.javatpoint.com/software-engineering-agile-model>, n.d.).



Figure 19 Agile Methodology

- **Incremental Software Development**

Incremental software development is a methodology where a software product is developed in a series of small, incremental releases or iterations, rather than all at once (<https://www.javatpoint.com/software-engineering-incremental-model>, n.d.).

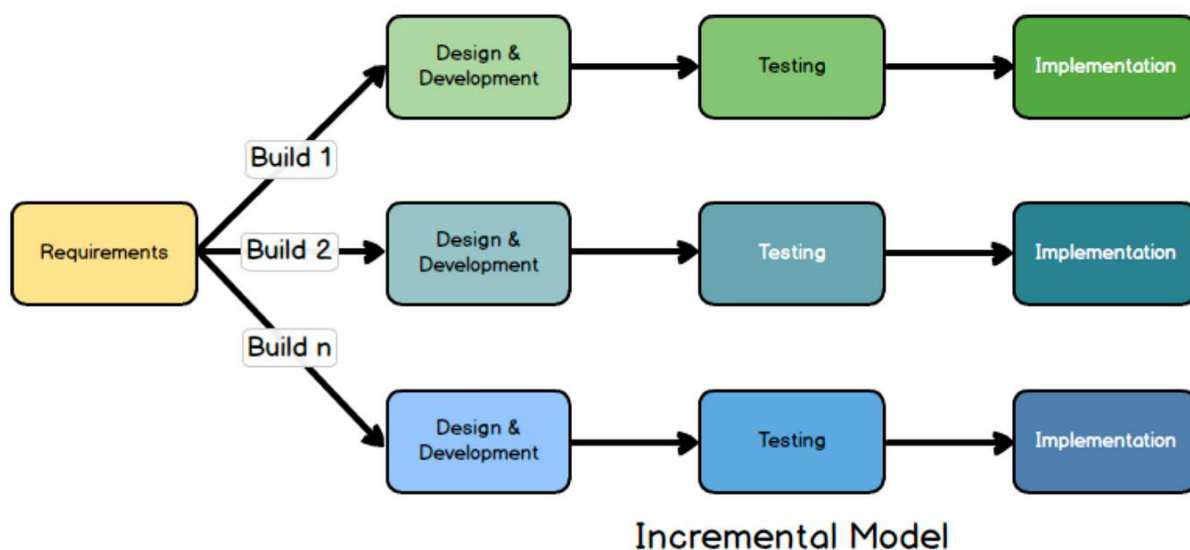


Figure 20 Incremental Methodology

## 3.2 Selected Methodology

### Incremental Software Development

I decided to use incremental software development as my methodology. Incremental development is a software development methodology that involves building a product in stages, releasing smaller, functional increments rather than delivering the entire product at once. This approach offers several advantages. By releasing smaller increments, the risk of project failure is minimized. The iterative nature of incremental development enables teams to adapt to changing requirements or market conditions more effectively. Each increment can be thoroughly tested and refined, leading to a higher-quality final product.

## 3.3 Work Breakdown Structure

Work Breakdown Structure (WBS) is a hierarchical breakdown of a project into smaller tasks and deliverables. It helps in organizing, planning and tracking progress of project.

- **For First Increment**

The First Increment focuses on completing Register and Login feature of User.

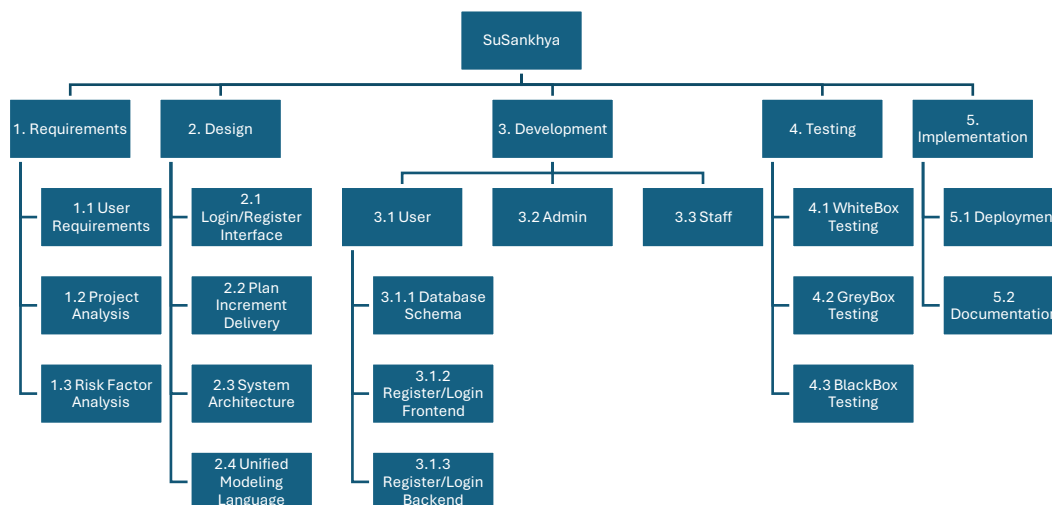


Figure 21 First Increment Work Breakdown Structure

- **For Second Increment**



The Second Increment focuses on Admin and Staff Panel. Admin makes staffs and staff make changes to products and services.

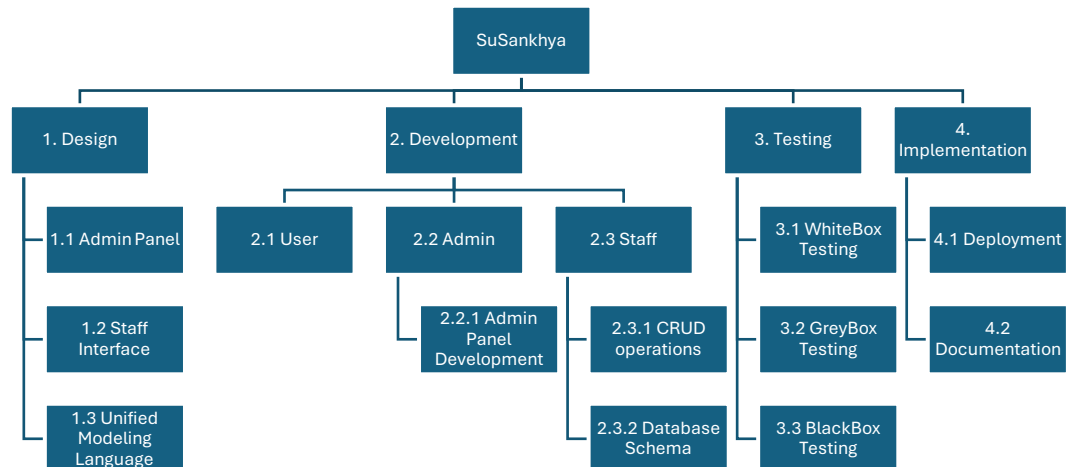


Figure 22 Second Increment Work Breakdown Structure

- **For Third Increment**

The Third Increment focuses on Add to Cart, Checkout and Order Processing features.

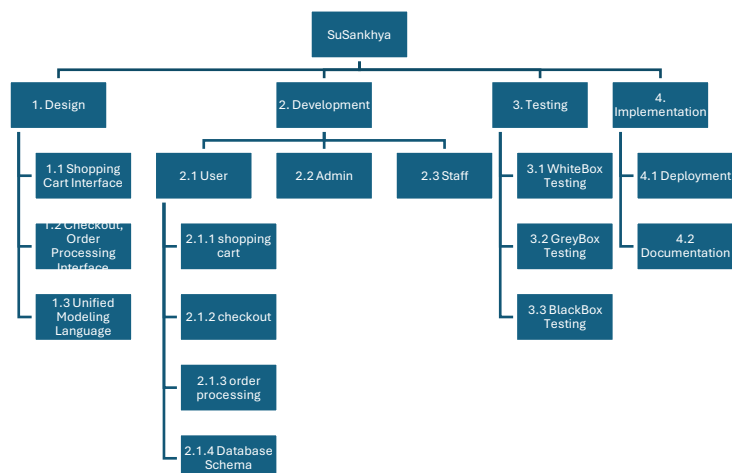


Figure 23 Third Increment Work Breakdown Structure

- **For Fourth Increment**

For Fourth Increment, the project focuses on search filters, product reviews.

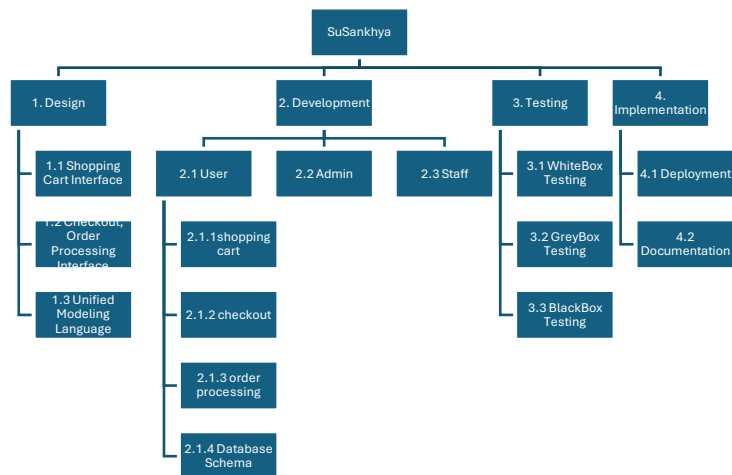


Figure 24 Fourth Increment Work Breakdown Structure

### 3.4 Milestone

#### 3.4.1 Previous Milestone

Tasks which are significant events is known as milestone and milestone listing is the listing of those significant events.

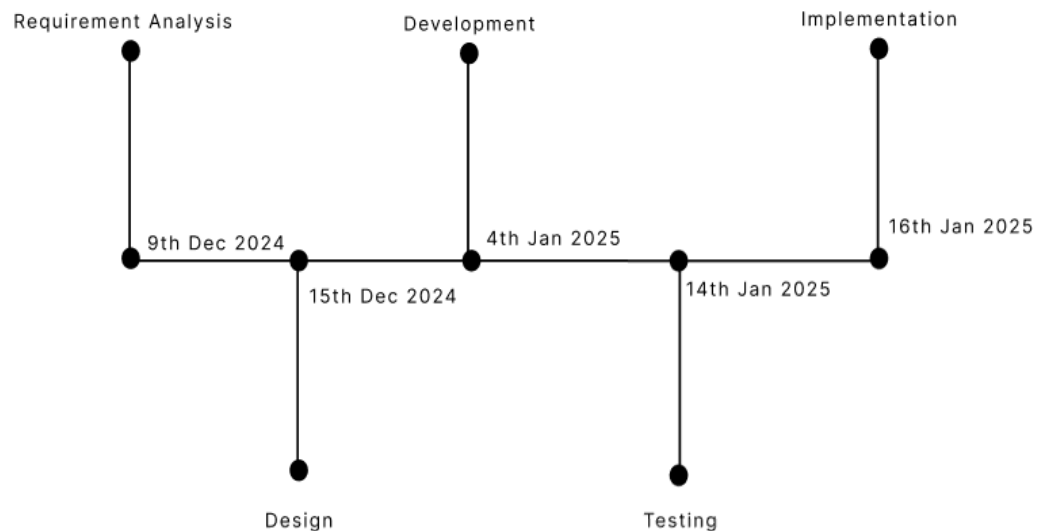
The milestone of SuSankhya is given below in a table:



Figure 25 Milestone Listing

### 3.4.2 Revised Milestone

- **For First Increment:**

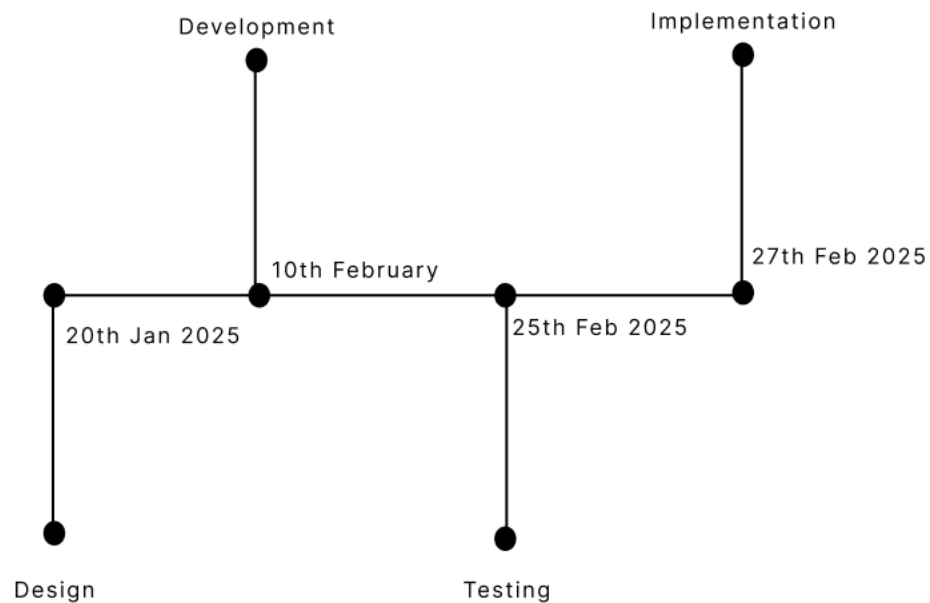


*Figure 26 First Increment Milestone*

- **Milestone Review for First Increment**

- ✓ **Milestone 1 : Requirement Analysis**
  - **Status** : Completed
- ✓ **Milestone 2 : Design**
  - **Status** : Completed
- ✓ **Milestone 3 : Development**
  - **Status** : Ongoing
- ✓ **Milestone 4 : Testing**
  - **Status** : Incomplete
- ✓ **Milestone 5 : Implementation**
  - **Status** : Incomplete

- **For Second Increment:**

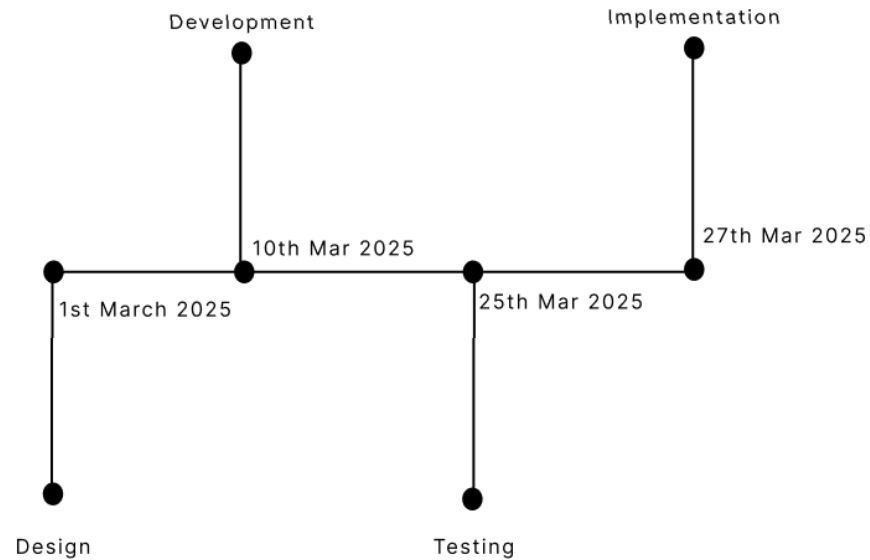


*Figure 27 Second Increment Milestone*

- **Milestone Review for Second Increment**

- ✓ **Milestone 1 : Design**
  - **Status** : Incomplete
- ✓ **Milestone 2 : Development**
  - **Status** : Incomplete
- ✓ **Milestone 3 : Testing**
  - **Status** : Incomplete
- ✓ **Milestone 4 : Implementation**
  - **Status** : Incomplete

- **For Third Increment:**

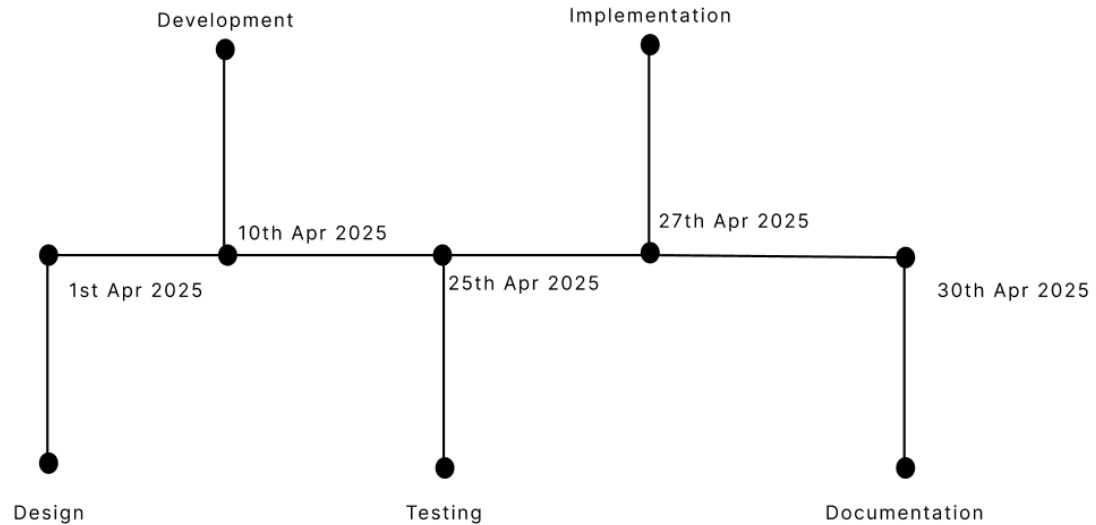


*Figure 28 Third Increment Milestone*

- **Milestone Review for Third Increment**

- ✓ **Milestone 1 : Design**
  - **Status** : Incomplete
- ✓ **Milestone 2 : Development**
  - **Status** : Incomplete
- ✓ **Milestone 3 : Testing**
  - **Status** : Incomplete
- ✓ **Milestone 4 : Implementation**
  - **Status** : Incomplete

- **For Fourth Increment:**



*Figure 29 Fourth Increment Milestone*

- **Milestone Review for Third Increment**

- ✓ **Milestone 1 : Design**
  - **Status** : Incomplete
- ✓ **Milestone 2 : Development**
  - **Status** : Incomplete
- ✓ **Milestone 3 : Testing**
  - **Status** : Incomplete
- ✓ **Milestone 4 : Implementation**
  - **Status** : Incomplete
- ✓ **Milestone 5 : Documentation**
  - **Status** : Incomplete

### 3.5 Gantt Chart

A Gantt chart visually represents a project plan over time. It is a visual project plan that lists tasks and milestones on the vertical axis with time plotted on the horizontal axis. Gantt charts are used in project management to schedule, track, and communicate deliverables, deadlines, dependencies, and resource assignments.

#### 3.5.1 Previous Gantt Chart

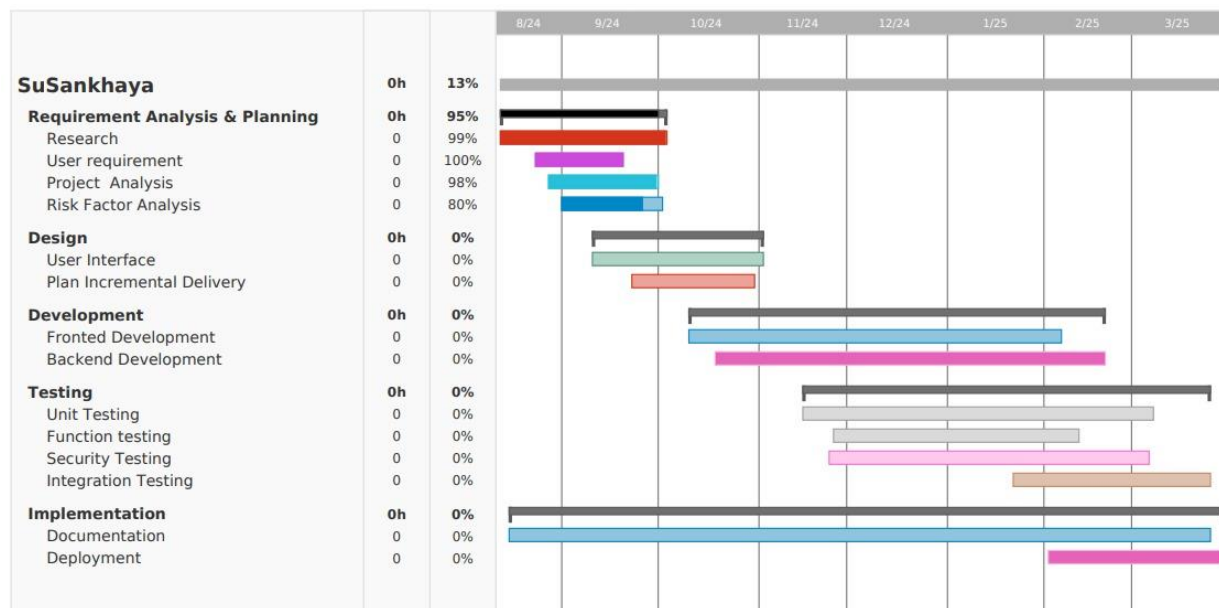


Figure 30 Previous Gantt Chart

### 3.5.2 Revised Gantt Chart

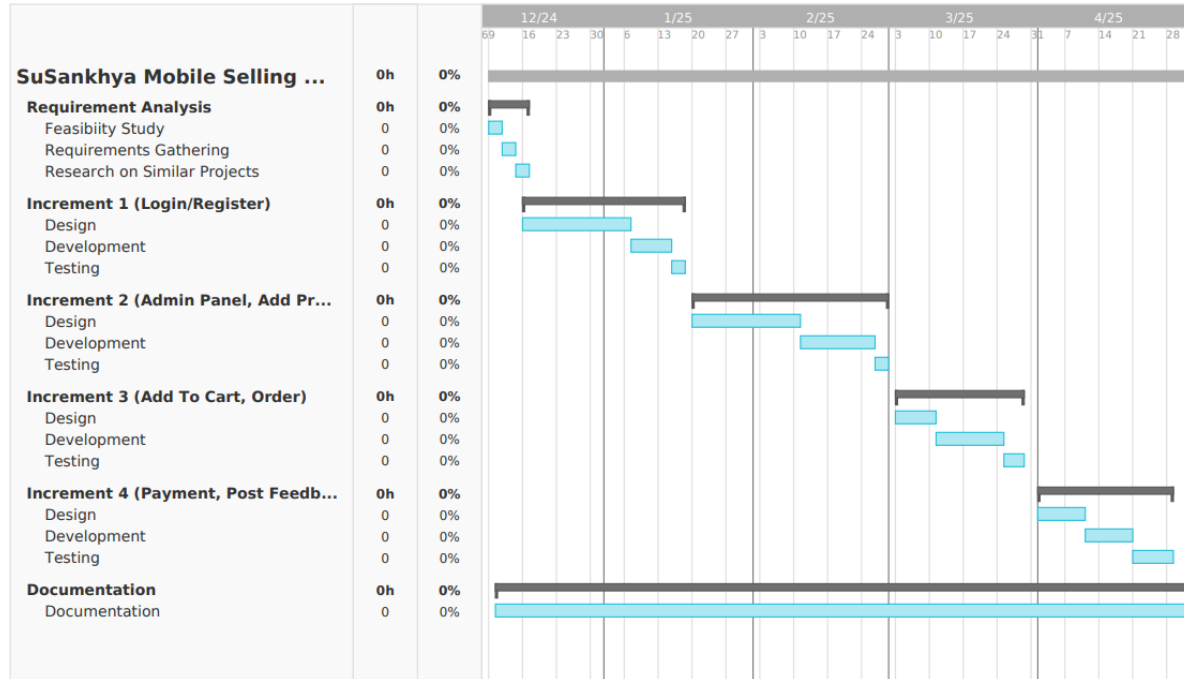


Figure 31 Revised Gantt Chart

## 4 Work Done

### 4.1 Software Requirements Specification

Software Requirements Specification is a formal document that gives the complete description of a software to be developed. The SRS document includes all the functional and non-functional requirements.

- **Functional Requirements**

- a. **Registration**

- Users should be able to register in the system by providing basic information such as name, email address and password.
    - The system should validate each inputs.
    - Email verification APIs should be implemented to confirm user's email address.



**b. Login**

- Users should be able to log in once they have registered in the system.
- The system should provide password hashing mechanisms to prevent from being exposed to.

**c. Product Catalog and Browsing**

- The website should display a catalog of products with description, high quality images.
- Users should be able to filter products based on various criteria (e.g., price range, dimension, size, brand etc.)

**d. Shopping Cart and Checkout**

- Users should be able to add products in a cart.
- The shopping cart should display the total amount to be paid, including taxes and shipping costs.
- Secure Payment Gateway should be integrated.

**e. Order Management**

- Users should be able to track their orders in real time.
- Users should be able to watch their orders history.
- Users should be able to review the products.

**• Non-Functional Requirements**

- i. Load Time:** The website should be fast and efficient.
- ii. Ease of Use:** The website should be easy to navigate and use for the beginners.
- iii. Accessibility:** The website should be accessible to users with disabilities.
- iv. Error Handling:** The website should handle errors and display error information.
- v. Security:** Sensitive data should be well encrypted and stored.

- vi. **Code Maintainability:** The code should be well structured, maintained and documented.

## 4.2 Data Flow Diagrams

A data flow diagram is a graphical representation that describes systems' operations through data movement.

### 4.2.1 Context Level Diagram (DFD level 0)

A context level diagram is a high-level diagram that is most simple, easy to understand.

The context level diagram of the system is shown below:

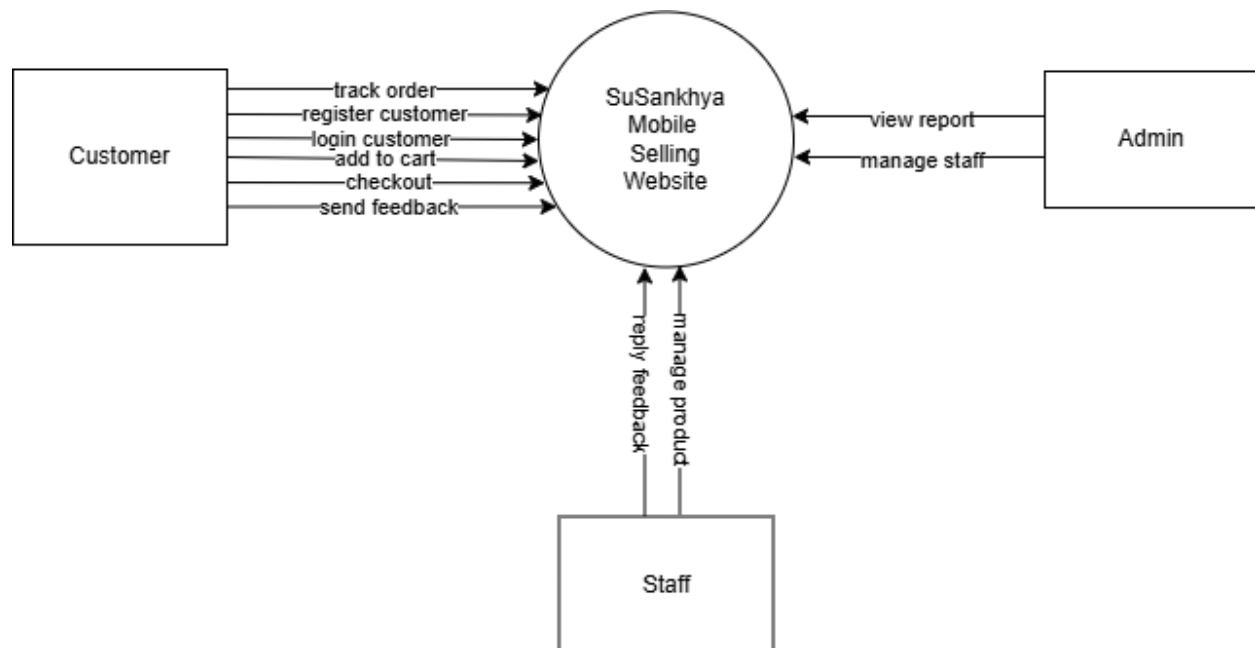


Figure 32 Context Level Diagram of Whole System

### 4.2.2 Data Flow Diagram Level 1

Data Flow Diagram Level 1 gives the detailed view of data flow in comparison to level 0.

#### Data Flow Diagram Level 1 of Register Customer:

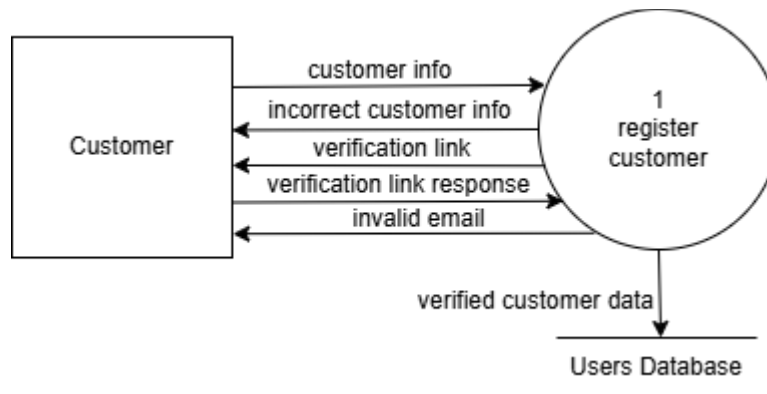


Figure 33 DFD 1 of Register Customer

### 4.2.3 Data Flow Diagram Level 2

Data Flow Diagram Level 2 is further detailed visualization of Data Flow Diagram level 1.

#### Data Flow Diagram Level 2 of Register Customer:

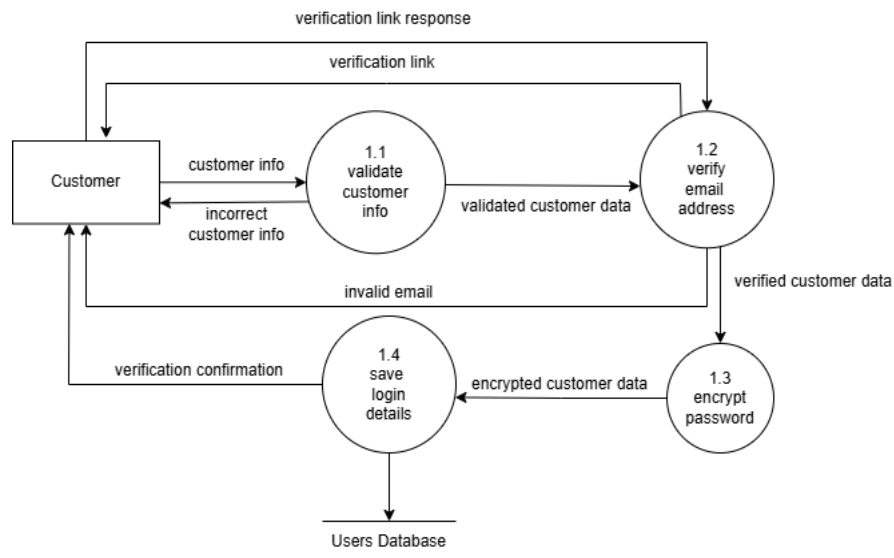


Figure 34 DFD 2 of Register Customer

### 4.3 Use Case Diagram

A Use Case Diagram is a behavioral diagram in Unified Modeling Language that shows how system interacts with its users.

#### Use Case Diagram of Project:

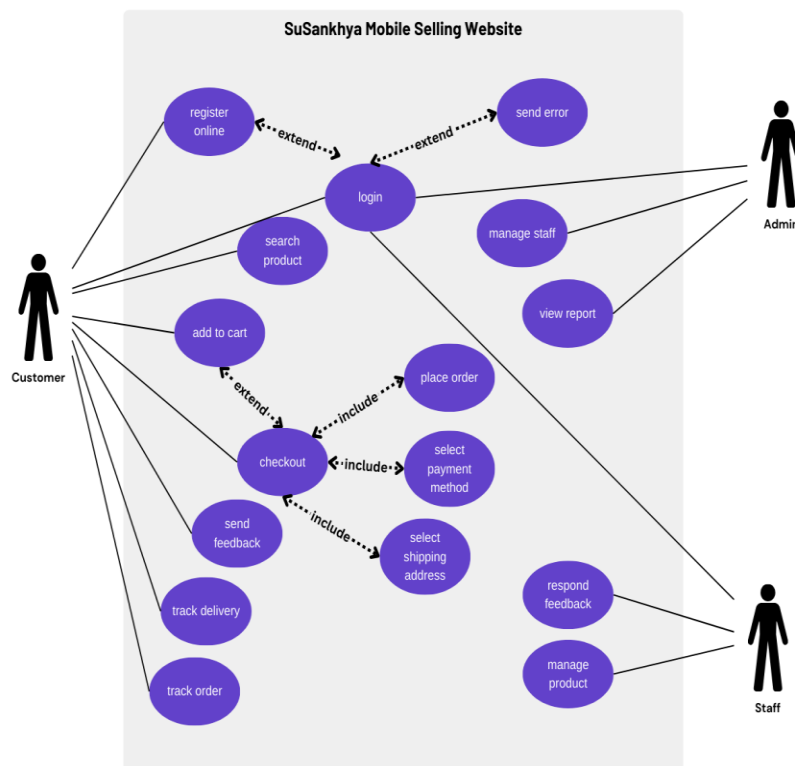


Figure 35 Use Case Diagram of Project

### 4.4 Sequence Diagram

Sequence Diagrams are type of Unified Language Model diagrams that visually represent the interactions between objects or components in a system over time.

#### Sequence Diagram of Checkout:

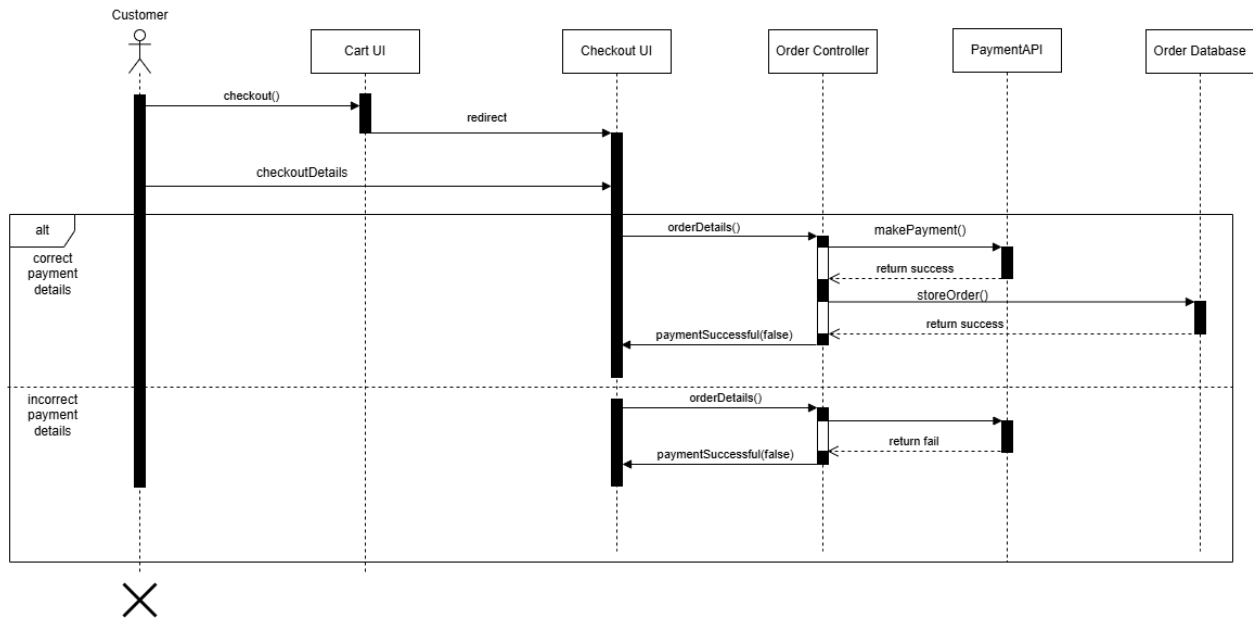


Figure 36 Sequence Diagram of Checkout

### Sequence Diagram of Login Customer:

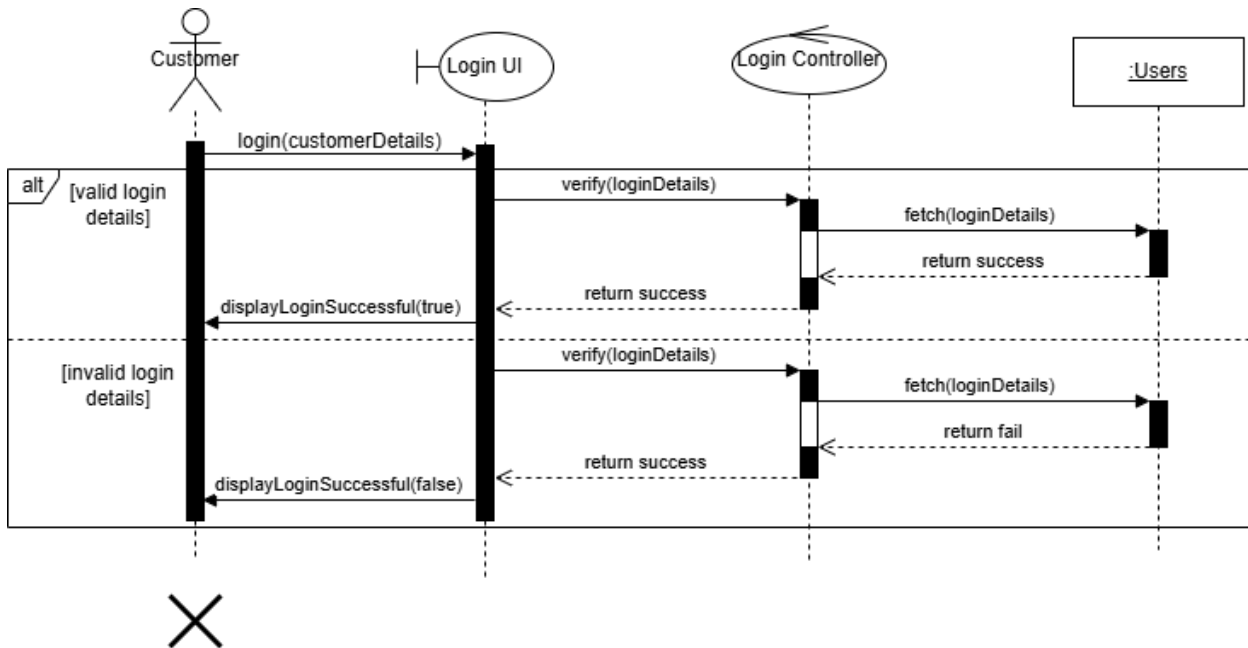


Figure 37 Sequence Diagram of Login Customer

## 4.5 Collaboration Diagram

Collaboration Diagram is the illustration of the relationship between objects in the Unified Modeling Language.

### Collaboration Diagram of Checkout:

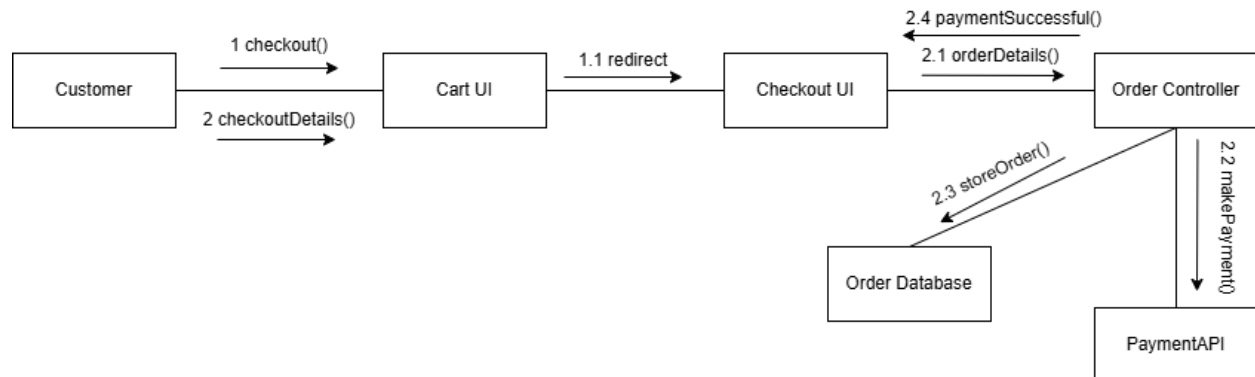


Figure 38 Collaboration Diagram of Checkout

### Collaboration Diagram of Login User:

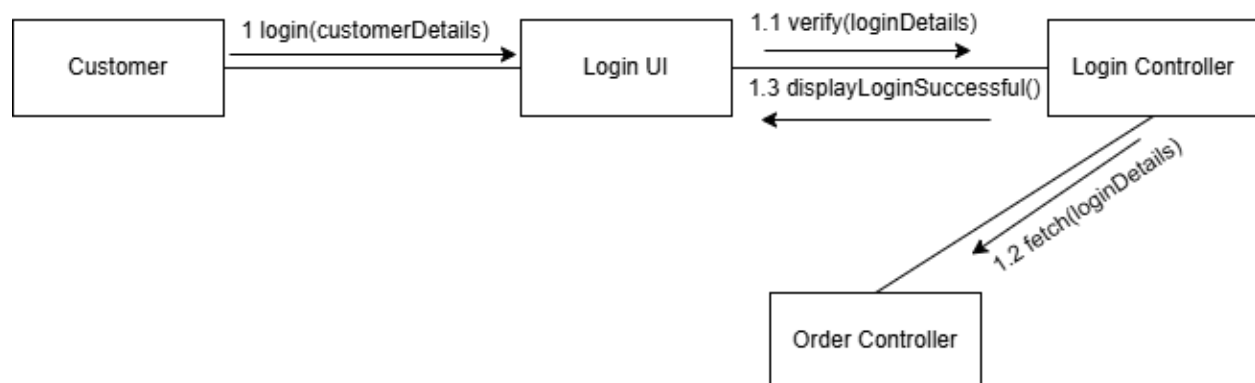


Figure 39 Collaboration Diagram of Login Customer

## 4.6 Entity Relationship Diagram

An Entity Relationship Diagram is a visual representation of database. It uses rectangles to represent entities and lines to connect entities.

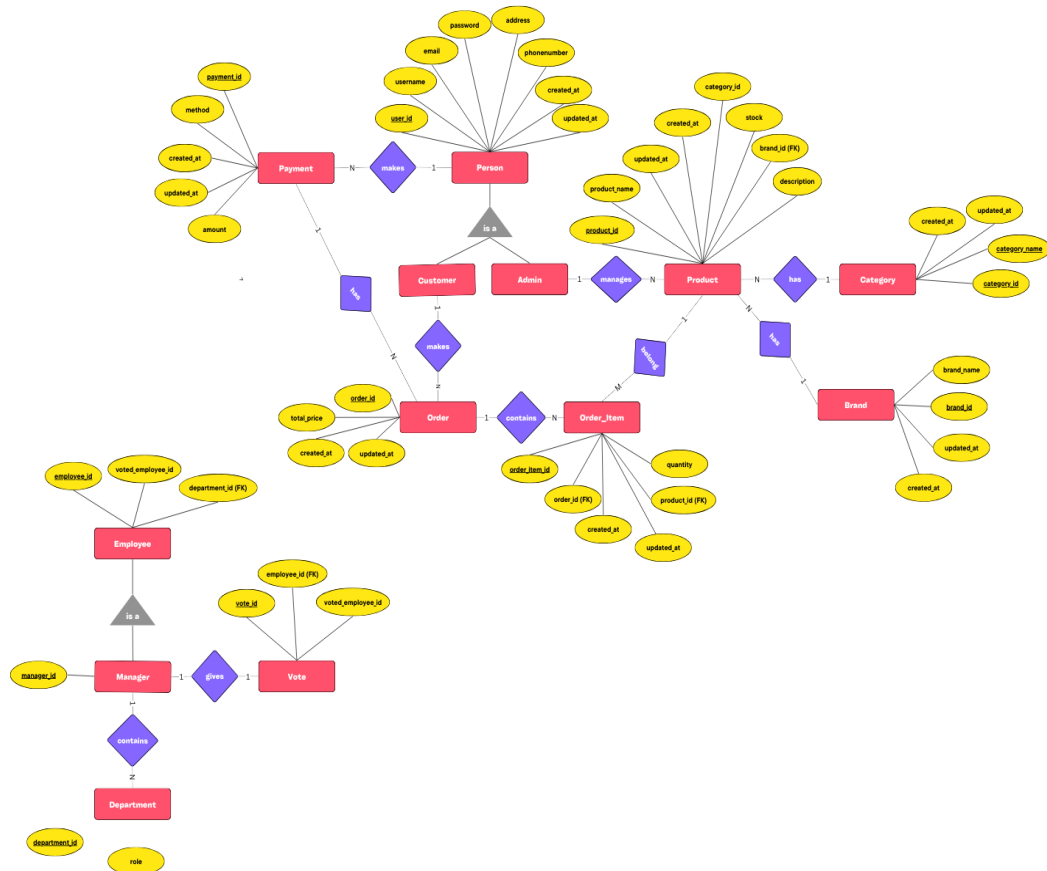


Figure 40 Entity Relationship Diagram

## 4.7 Wireframes

### Wireframe of Register and Login Page:

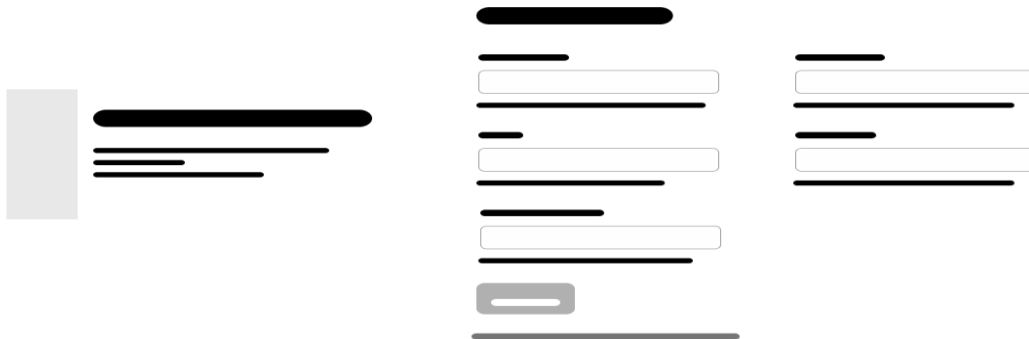


Figure 41 Wireframe of Register Page




Figure 42 Wireframe of Login Page



## 4.8 Prototypes

### Prototypes of Login and Register Page:



**SuSankhya**  
is an online mobile selling website  
where you can buy mobiles with  
best quality and deals

## Sign Up

First Name   
Please enter your First Name

Last Name   
Please enter your Last Name


Email   
Please enter your Email

Password   
Please enter your Password

Phone Number   
Please enter your Phone Number

Already signed up, click to [login](#)

Figure 43 Prototype of Register Page



# SuSankhya

is an online mobile selling website  
where you can buy mobiles with  
best quality and deals

## Login

Email

Please enter your Email

Password

Please enter your Password

Login

Not signed up, click to [sign up](#)




Figure 44 Prototype of Login Page

## 4.9 Database Development

### 4.9.1 Database Creation

```
CREATE DATABASE db_susankhya;  
USE db_susankhya;
```

Figure 45 Database Creation

### 4.9.2 User Table Creation

```

CREATE TABLE User (
    user_id INT PRIMARY KEY AUTO_INCREMENT,
    user_name VARCHAR(100) NOT NULL,
    email VARCHAR(100) UNIQUE NOT NULL,
    password VARCHAR(255) NOT NULL,
    phone_number VARCHAR(20),
    address VARCHAR(255),
    role VARCHAR(20),
    joined_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);

```

Figure 46 Create Table Query

	user_id	user_name	email	password	phone_number	address	role	is_admin	joined_date
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Figure 47 User Table

### 4.9.3 Order Table Creation

```

CREATE TABLE Orders (
    order_id INT PRIMARY KEY AUTO_INCREMENT,
    order_date DATETIME DEFAULT CURRENT_TIMESTAMP,
    total_amount DECIMAL(10,2) NOT NULL,
    status ENUM('pending', 'delivered', 'canceled') DEFAULT 'pending',
    user_id INT,
    FOREIGN KEY (user_id) REFERENCES User(user_id)
);

```

Figure 48 Create Order Table Query

order_id	order_date	total_amount	status	user_id
NULL	NULL	NULL	NULL	NULL

Figure 49 Order Table

#### 4.9.4 Brand Table Creation

```
CREATE TABLE Brand (
    brand_id INT PRIMARY KEY AUTO_INCREMENT,
    brand_name VARCHAR(100) NOT NULL
);
```

Figure 50 Create Brand Query

brand_id	brand_name
NULL	NULL

Figure 51 Brand Table

#### 4.9.5 Category Table Creation

```
CREATE TABLE Category (
    category_id INT PRIMARY KEY AUTO_INCREMENT,
    category_name VARCHAR(100) NOT NULL
);
```

Figure 52 Create Category Query

	category_id	category_name
*	NULL	NULL

Figure 53 Category Table

#### 4.9.6 Product Table Creation

```

CREATE TABLE Product (
    product_id INT PRIMARY KEY AUTO_INCREMENT,
    product_name VARCHAR(100) NOT NULL,
    description TEXT,
    price DECIMAL(10,2) NOT NULL,
    quantity_in_stock INT,
    category_id INT,
    brand_id INT,
    FOREIGN KEY (category_id) REFERENCES Category(category_id),
    FOREIGN KEY (brand_id) REFERENCES Brand(brand_id));

```

Figure 54 Create Product Query

	product_id	product_name	description	price	quantity_in_stock	category_id	brand_id
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Figure 55 Product Table

### 4.9.7 Order Item Creation

```
CREATE TABLE Order_Item (  
    order_item_id INT PRIMARY KEY AUTO_INCREMENT,  
    order_id INT,  
    product_id INT,  
    quantity INT NOT NULL,  
    price DECIMAL(10,2) NOT NULL,  
    FOREIGN KEY (order_id) REFERENCES Orders(order_id),  
    FOREIGN KEY (product_id) REFERENCES Product(product_id));
```

Figure 56 Create Order Item Query



order_item_id	order_id	product_id	quantity	price
NULL	NULL	NULL	NULL	NULL

Figure 57 Order Item Table

### 4.9.8 Relational Diagram

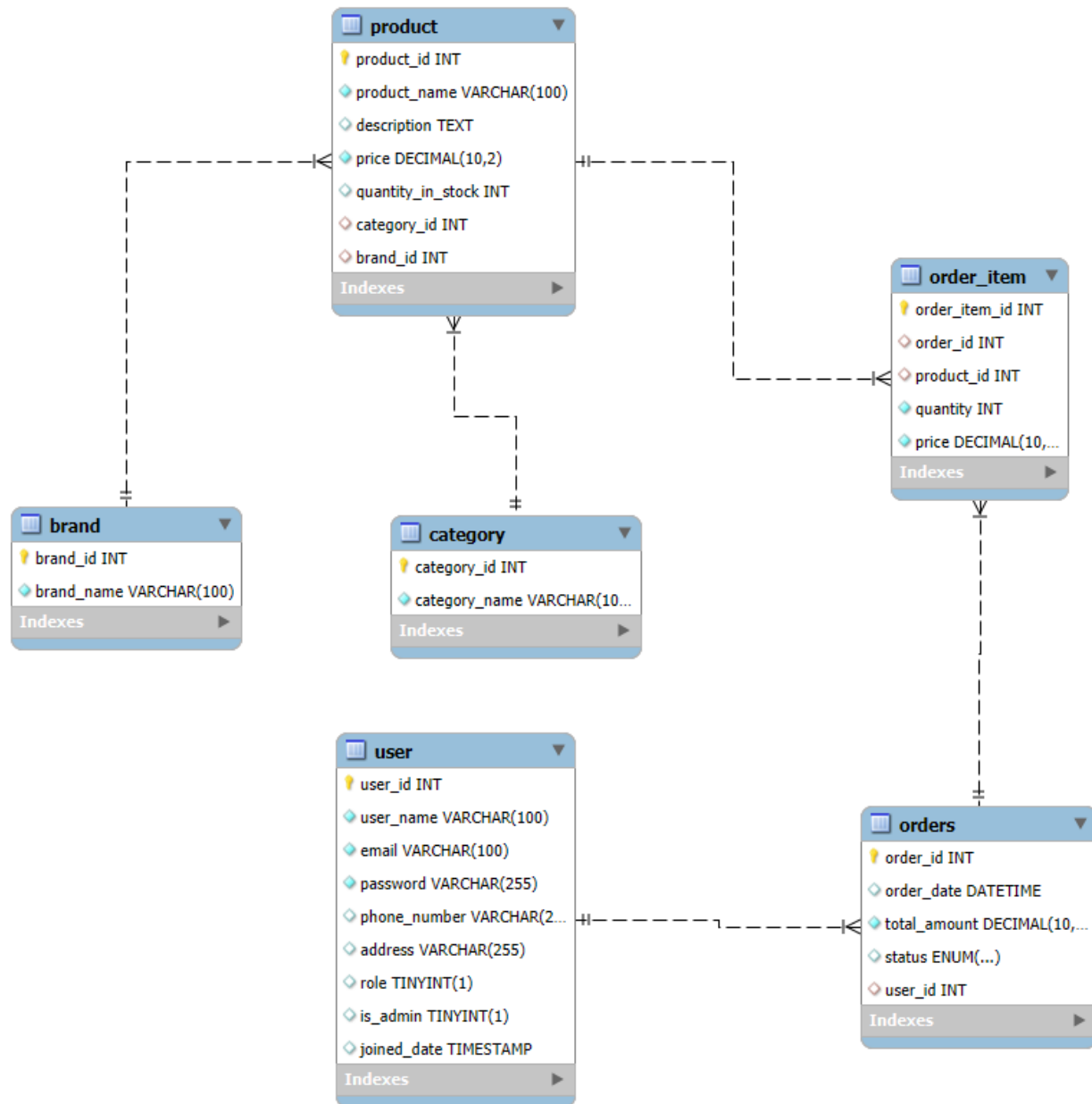


Figure 58 Relational Diagram

## 5 Further Work

*Table 2 Further Work*

SNo	Task	Comment	Date of Completion
1	Implement Login/Register Feature	This task is currently on progress and will be completed by January 16th, 2025.	January 16, 2025
2	Implement Admin Panel	This task will be part of the second increment. Staffs will be able to add, delete, change products and manage the system overall.	February 27, 2025
3	Implement Add To Cart Feature	This task will be part of the third increment. Users will be able to add their products in cart.	March 10, 2025
4	Implement Checkout and Order Processing Feature	This task will be part of the third increment. Users will be able to checkout and order products, track their orders.	March 27, 2025
5	Implement Payment Gateway Integration	This task will be part of the fourth increment. Users will be able to pay their order securely and efficiently.	April 15, 2025



6	Implement Post Feedback feature	This task will be part of the fourth increment. Users will be able to post their feedbacks about the purchased product.	April 28, 2025
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I shall complete this task on time, with proper testing, debugging, and client requirements.

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