

A PRELIMINARY REPORT ON
“E-Marketplace for Customize Package Shopping ”

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IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE
OF

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SUBMITTED BY

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are bonafide students of this institute and the work has been carried out by them under the guidance of Mr. Vaibhav Dabhade and it is approved for the partial fulfillment of the requirement of Savitribai Phule Pune University, for the award of the degree of Bachelor of Engineering (Computer Engineering).

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Abstract

Nowadays there are many trends going on which people just hear about and are new to people. When they try to do these trends they don't know many things and also they don't get proper information and time is wasted surfing on the internet. If all things about a specific trend is given in a package from which all the things related to it will be given, it will be very easy to find and time saving. Since people have to search a lot of places to find products which are required for same function or event. So it becomes a tedious job and a lot of time is wasted. And if people will get all this products at one place it will be easier and time saving for them.

We are providing a solution to overcome this problem in which we are providing different packages where products related to particular event will be provided at one place. For example, packages like some festive event, some recipe, or latest trend that is different baby things and many more. This online selling platform will give all kinds of package options. It will allow formal and informal merchants in developing countries to advertise and sell their goods on internet. It also gives an option to customers to buy wholesale or retail where retail shops as well as customers can also buy from the wholesale shops. These options will be provided to the shopkeepers while registering on the system. It also includes seasonal shops which are only for some period of time. This system has an option of searching shops nearby their location which is a great help for the customers to find shops near them. We are also including ML modules like sentiment analysis and a recommendation system to the customers. The customer can also view the product reviews and also write their own reviews. This system will be very useful and everything at one place is provided which is beneficial for customers.

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Chapter 1

Introduction

This chapter describes the term E-marketplace. It also gives the overview of the E-marketplace with customize packaging which describes the deliverables of the project. E-Marketplace with customize package is a solution provided to customer as well as seller. In today's world, where everything is on Internet and various digital platforms online shopping is one of them where most people today rely on. Due to the advantages like it save times, and various facilities like delivery, everything on one place within one click. This solution includes various modules different for customer, wholesaler and retailer.

1.1 Overview

E-marketing means using digital technologies to help reach the customers, create awareness of brand and sell your goods and services. A unique platform that connects customer and seller in a more efficient way. It is dynamic and you can access everything with just a simple click sitting at your homes. Nowadays, the lifestyle of people is different. People feel uncomfortable and time consuming for going crowded markets. So E-shopping is a boon as it saves lot of time. Online-shopping is a process whereby consumers directly buy goods, services etc. from a seller without an intermediary service over the Internet. Shopper can visit the web stores from the comfort of their house and shop as by sitting in front of the computer. It is very convenient for people to shop online. Online stores are available 24 hours a day and many consumers have internet access. So it is very convenient for them to shop online. One of the most exciting factors about online shopping, particularly on holiday season is, it reduce the need to wait in

long lines or search from a store for particular item. Online shopping is rising day by day. Because computer user's are increasing day by day so as the online shopping trends are also increasing. This project covers the online selling of products by local vendors, as well as wholesaler. The product can be anything a customer search for which is available to the seller. The project shows the product category and then product details. From the product details, the product can be added to cart and can be bought. In this solution customer will also be able to buy a direct package of things. And even seller can sell seasonal products to customer.

Consumers can get full information about the product with its reviews being passed by the existing users. If one wants to buy a product he/she is no longer limited to asking the friends and families because there are many products reviews on the web which gives opinions of the existing users of the product. Consumers find a product of interest by visiting the website of the retailer directly or by searching among alternative vendors using a shopping search engine, which displays the same product's availability and pricing at different e-retailers. A typical online store enables the customer to browse the firm's range of products and services, view photos or images of the products, along with information about the product specifications, features and prices. Online stores typically enable shoppers to use search features to find specific models, brands or items.

The solution provides the following facilities to the Administrator: Administrator here is nothing but a retailer or wholesaler. He can add product to database. Administrator can edit or delete the products from the database. Administrator can add and sees the delivery report to the database. The solution provides the following facilities to the Customers : The customers register with their details and get authentication for an authorized Login. Customers are provided with up to date information on the products available by categories. The seller can add various packages as per various season or festival at one place. For example, seller can add packages in Diwali festival which will include various sweets, crackers, lanterns, rangolis, etc. For which customer doesn't have to search this product at different places, he will be able to get it at one place. Seller will make this packages for customer.

The project will deliver the requirement of an Online shopping system. In the figure we can see, the seller as well as customer will register. After registering the seller can add the product or packages. The customer can view the products if he/she is new,

in order to buy the product the customer has to register first. After buying the product or required package they can made the payment using online payment system also. Apart from this the customer can also view the reviews of the product to determine which is better one. In this we have used sentiment analysis algorithm for reviews and recommendation system algorithm to provide recommendation to the customer about the products.

Chapter 2

Literature Survey

In this chapter we will see the various studies and research conducted in order to identify the current scenarios and trends in online shopping system. This chapter will mainly discuss on the study that are done by previous research of other authors in the similar area of the present study.

2.1 Research Variable - Time saving

Time is also perceived as one of a factor that relates with intention to purchase in a shopping context. It is believed that consumers have their own perception of time, whether or not to shop from the internet. According to Hansen and Jensen (2009), accomplishing the shopping trip as soon as possible refers to the time-saving oriented consumers and they prefer store choices favoring quick shopping; people who dislike shopping and approaching for time saving retail stores refers to the economic shoppers or known as “problem-solvers”.

In online shopping, it requires less effort and better decision making for consumers who opt to purchase at the e-store (Jiang and Rosenbloom, 2005). Shoppers may save their time in e-shopping because they do not have to go through any effort on travelling to a mall or saving their time in other psychology factors such as traffic jam etc. Online shopping increases search efficiency by eliminating travelling costs and psychological costs brings convenience in e-shopping (Jayawardhena et. al., 2009). Comparing online and traditional shopping, Alreck and Settle (2002) found that internet shopping was viewed as saving more time.

2.2 High Interactivity Factor

Interactivity is defined as the degree to which two or more communication parties can act on each other, on the communication medium, and on the messages and the degree to which such influences are synchronized (Liu and Shrum, 2002, p.54). According to McMillan and Hwang (2002), interactivity is defined as direction of communications, user control and time. Interactivity can be applied in online and offline shopping. The terms of interactivity in an online context is based on the detailed information given, easy-to-read or descriptive information is available (Park and Stoel, 2005) and also the degree of communication between the buyer and the seller. In an offline context, interactivity will be based on the atmosphere of the shopping mall and also the interaction between the consumer and the shop's promoter.

To highlight the term of "atmospheric", consumer's purchasing probability is enhanced through purposefully design the buying environment to produce specific affective responses in shoppers (Kotler, 1973-1974). When purchasing on the internet, perceived trustworthy will be higher when the web site has greater interactivity (Merrilees and Fry, 2003). A citation has been done on Hoffman and Novak (1996) by Ballantine, (2006, p.463), there are two main types of interactivity are considered to be applicable to the web. The first, person-interactivity, is the ability for a person using the web to communicate with other individual. The second, machine-interactivity, refers to the ability for an individual to access hypermedia content.

2.3 Shopping orientations

Consumers' shopping orientations play a crucial role in their online purchase intention. Ling et al. (2010) find that brand and quality orientation are positively related to online purchase intention. On the other hand, Thamizhvanan and Xavier (2013) do not find an impact of brand and quality orientation on online purchase intention. Hence, previous studies have contained mixed findings about whether brand and quality orientation influence online purchase intention. In addition, some studies focus on price

consciousness, convenience, recreational shopping, variety seeking, entertainment orientations, and impulsiveness. It has been found that (1) consumers who purchase more items on the Internet are more price sensitive, (2) consumers who are loyal to web-sites prefer to purchase online more, and (3) people who spend more time online buy more items (Calık Ersoy, 2008; Girard Silverblatt, 2003; Ling et al., 2010; P ark, 2002; Thamizhvanan Xavier, 2013). Conversely, Brown et al. (2003) indicate that shopping orientations do not have a direct impact on online purchase intention.

2.4 Summary

In this chapter we discussed the various researches conducted in order to achieve a clear view of E-Marketplace and also understand the needs of customers to buy the products online. And how Online Shopping System provides them this efficient platform.

Chapter 3

Problem Definition

This chapter explains the need of E-marketplace and This project aims to develop an online shopping application for customers with the goal that it is very easy to shop all the needed items without searching and at one place. It consist of Effortless shopping where all you need to do is select what kind of package you want. Currently for customize packaging there is no solution available in market so we provide the solution in this where both wholesale and retail are available. To get this online shopping system the customers, retail shops and wholesale shops have to register. Upon successful login the customers can purchase a wide range of things which will be dispatched at the doorstep. The ML Algorithms like recommendation system will recommend the products to the customer according to their interest and Sentiment analysis will analyse the reviews of the customer.

3.1 Project Objective

The main objective of our project is to provide a convenient way for customers to shop online and to get number of products at one place so it will save time of the customers. Our project also focuses on giving recommendation to the customer about the packages and products they are likely to search.

3.2 Need of E-Marketplace

There are large numbers of commercial Online Shopping websites offering large number of products tailored to meet the shopping interests of large number of customers. These online marketplaces have thousands of products listed under various categories.

- Problem

The basic problems with the existing systems are the non-interactive environment between the seller and customer. Also there is no feature like packaging for festivals and seasonal event available.

- Solution

The motive of this E-Marketplace for Customize Package Shopping Solution is to allow the customer to directly connect with the seller. And to provide different categories for product on request of customer.

3.2.1 Mobility

Consumers get more freedom while using applications anytime and from any place.

3.2.2 Personalized content

Shopping preferences and previous orders can be saved in the app, serving as the basis for personalized offerings.

3.2.3 Contactless Payments

Individual smartphones can now replace cash and credit cards due to the invention of mobile contactless payments technology. Payment apps provide ease, speed and security. At the checkout, you don't need to get a wallet from your bag to take out coins, banknotes, or credit cards. Put the phone to the payment terminal and that's it! It has become especially urgent during the COVID-19 pandemic when people have to avoid touching things and try to reduce the time spent in shops.

3.3 Basic Concept

Online shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the Internet. Online shopping tries to enhance access to care and improve the continuity and efficiency of services.

3.3.1 User Class and Characteristics

There are 3 types of user of this software-

1. General public
2. Customers
3. Administrator

- General public can use the system to see the product, their prices and quantity available. General user can not buy the products.
- Customers are using for viewing and buying the products. Customer can also write feedbacks for products and services.
- Administrators (Here seller) can add, edit, delete products and provide services to the customer. Administrator can see the daily sell. Can also see the feedback given by the customer. Administrator maintaining the deliveries.

3.4 Summary

In this chapter we introduced the basic concept of E-Marketplace and explained the need of Online Shopping.

Chapter 4

Analysis

This chapter describes the project plan adopted and determines the requirement analysis.

4.1 Project Plan

4.1.1 Project Plan for semester I

The following Table 4.1 describes the project plan for semester I. It describes the various activities and accountability of the developers for the respective modules. Following are the major activities carried out in this plan :

- Identifying the functional requirements.
- Designing of the Framework.
- Studying the necessary development tools and technologies.

| Phase | Activity | Start Date | End Date | Group Members |
|-------|---|------------|------------|---------------|
| 1 | Selection of Project Topic | 29-07-2020 | 4-08-2020 | Team |
| 1 | Functional Requirement Specification(FRS) | 9-08-2020 | 19-08-2020 | Team |
| 1 | Design Prototype | 22-08-2020 | 23-09-2020 | Team |
| 1 | Set Theory and Math Model | 25-09-2020 | 11-10-2020 | Team |
| 1 | UML Diagram Prototype | 24-09-2020 | 05-10-2020 | Team |
| 1 | Project Problem Statement using NP Complete | 08-10-2020 | 19-10-2020 | Team |
| 1 | UML Diagram in StarUML | 05-10-2020 | 22-10-2020 | Team |
| 1 | Paper Presentation | 12-12-2020 | 12-12-2020 | Team |
| 1 | Software Requirement Specification | 15-12-2020 | 23-12-2020 | Team |
| 1 | Test Plan | 20-03-2021 | 26-03-2021 | Team |

Table 4.1: Planner and Progress Report I

4.1.2 Project Plan for semester II

The following Table 4.2 describes the project plan for semester II. It describes the various activities and accountability of the developers for the respective modules. Following are the major activities carried out in this plan :

- Define Programming Standards.
- Development of project in 3 Milestones.
- Formal Technical Review and Testing.

| Phase | Activity | Start Date | End Date | Group Members |
|-------|--------------------------------|------------|------------|---------------|
| 2 | Defining Programming Standards | 09-05-2021 | 11-05-2021 | Team |
| 2 | Development of Milestone No.1 | 13-05-2021 | 24-05-2021 | Team |
| 2 | Development of Milestone No.2 | 29-05-2021 | 8-06-2021 | Team |
| 2 | Development of Milestone No.3 | 10-06-2021 | 23-06-2021 | Team |
| 2 | Formal Technical Review | 25-06-2021 | 27-06-2021 | Team |
| 2 | Testing and Bug Fixing | 29-06-2021 | 03-07-2021 | Team |

Table 4.2: Planner and Progress Report II

4.2 Requirement Analysis

The Software requirement specification (SRS) is the official statement of what is required of the system developers. This requirement document includes the requirements definition and the requirement specification. The software requirement document is not a design document. It should set out what the system should do without specifying how it should be done. The requirement set out in this document is complete and consistent. The software specification document satisfies the following:-

- It specifies the external system behaviors.
- It specifies constraints on the implementation.
- It is easy to change.
- It serves as reference tool for system maintainers.
- It record forethought about the life cycle of the system.
- It characterizes acceptable response to undesired events.

4.2.1 Necessary Functions

- User Friendly.
- Build an application.
- Deployment of application.

4.2.2 Desirable Functions

- User-Generated Reviews
- Interactive Objects.

4.3 Summary

In this chapter we described the implementation details of the project plan for Semester I and II. We also studied the necessary functions and the desirable functions of E-Marketplace System.

Chapter 5

Design

This chapter describes the Software Requirement Specification (SRS) to be implemented for Project. It also explains the architecture of the system and external interface requirements. We have also described the Risk assessment strategy and the Flow Chart Diagram which explains the flow of the project.

5.1 Software Requirement Specifications

The Software Requirement Specification describes the scope of the project, operating environment, user characteristics, design and constraints. It also elaborates the system architecture of the Project.

5.1.1 Project Scope

This project has great scope in future. The software can be developed on any platform and can be used on any system. It also provides security with the use of login ID and password so that unauthorised user cannot access your account, only proper authorise and verified user can have access to the software. In the current system customers and sellers can create account and use the system, it can be extended for the users for better shipping and payment options and to create different new packages which are not in the system package creator will have the option to create package from local Markets and offline stores to give them online customers. There are many benefits for offline store and local vendors in the future since the package creators can also on the margin they will get employment through this which depends on their marketing skills.

Currently due to covid-19 mostly people prefer shopping online for which many facilities can be provided in the future which will benefit people in this situation.

5.1.2 Operating Environment

Internet connection is required for OSS and any Operating system and a Browser like Mozilla Firefox, internet explorer and chrome etc.

5.1.3 User Classes and Characteristics

There are 3 types of user of this software-

- 1.General public
- 2.Customers
- 3.Administrator

- General public can use the system to see the product,their prices and quantity available. General user can not buy the products.
- Customers are using for viewing and buying the products. Customer can also write feedbacks for products and services.
- Administrators(Here seller) can add,edit delete products.and provide services to the customer. Administrator can see the daily sell. Can also see the the feedback given by the customer. Administrator maintaining the deliveries.

5.1.4 Design and Implementation Constraints

The key restriction here will be to verify the validity of the purchaser,which is not always feasible.Security threats may be involved.

- **Memory:** Device will have 2GB internal hard drive. Software and database cannot exceed this amount.
- **Internet:** A full internet connection required.
- **Operating System:** The built framework can run on any platform that includes a web browser.

5.1.5 Assumptions and Dependencies

It is assumed that the hardware designed will work correctly with the third-party operating system and the developed software. The customer has a computer with a browser and have Internet. Administration is created in the system already. Roles and tasks are predefined.

5.2 System Architecture

- Retailer Module

As shown in fig.5.2 in the retailer module, the seller can add or remove the products with details. Also if he had the packages for different festival or event he can add it in the package category.

- Wholesaler Module

As shown in fig.5.3 in the wholesaler module, the wholesaler will register and enter all the information regarding his wholesale market. Later he can add the products and can sell to the shopkeepers in a stock. He will get the notification if someone places order and the payment will be received by various payment methods.

- Customer Module

As shown in fig.5.4 in the customer module, the customer can search products but to buy the product the customer first needs to login. After login he can purchase the products. Also if he wants to buy any package he can send it to the shopkeeper, so that the shopkeeper can make the required package for the customer.

- Package Module

As shown in fig.5.5 in the package module, various packages will be added to the category. If any customer makes request of that package then the notifications will be sent to the sellers. And the seller who is ready to provide that package will send notification to the customer that he is ready to give that package. And after creating the packages it will be delivered to the customer on given address and payments will be made.

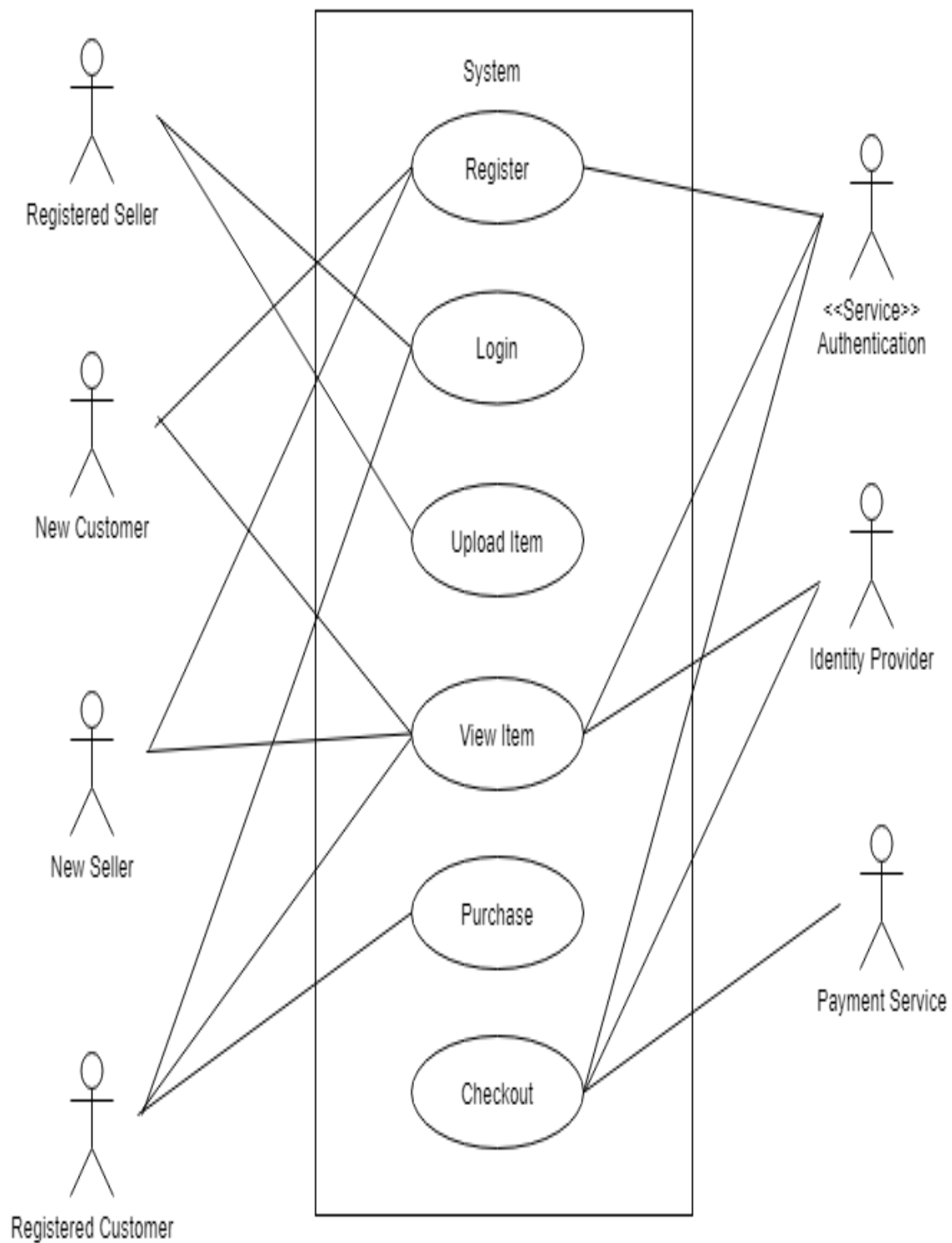


Figure 5.1: E-Marketplace Architecture

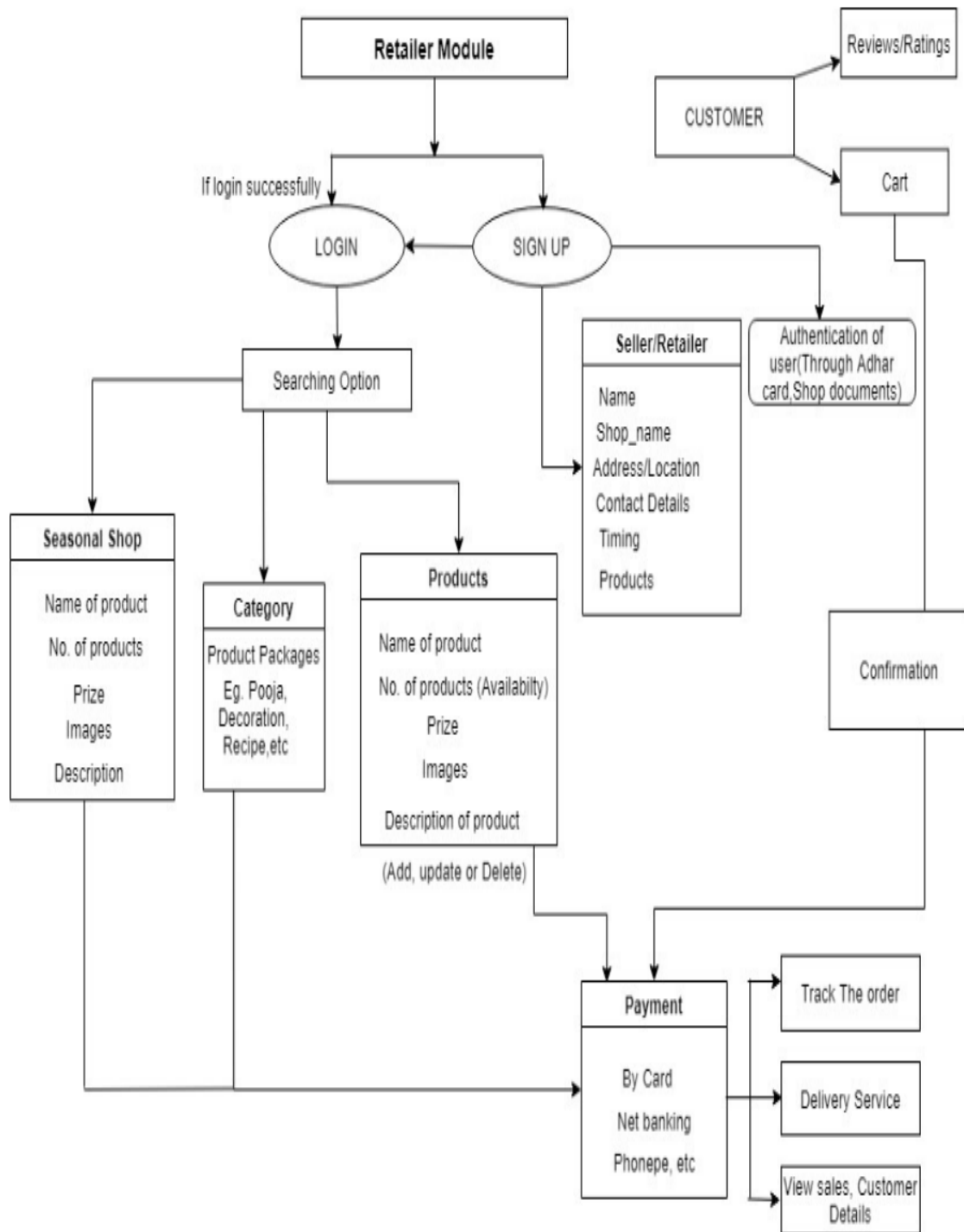


Figure 5.2: Retailer Module

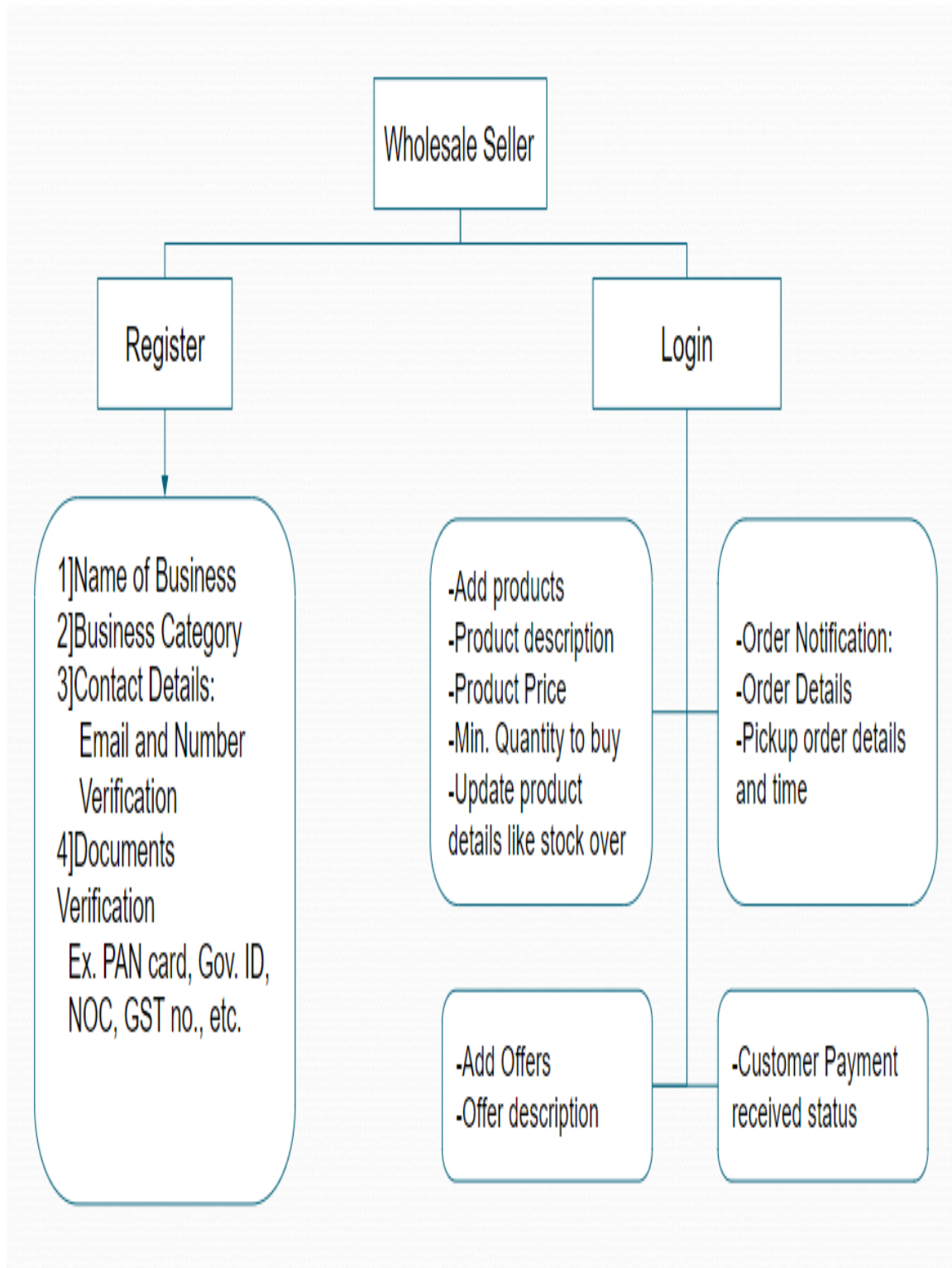


Figure 5.3: Wholesaler Module

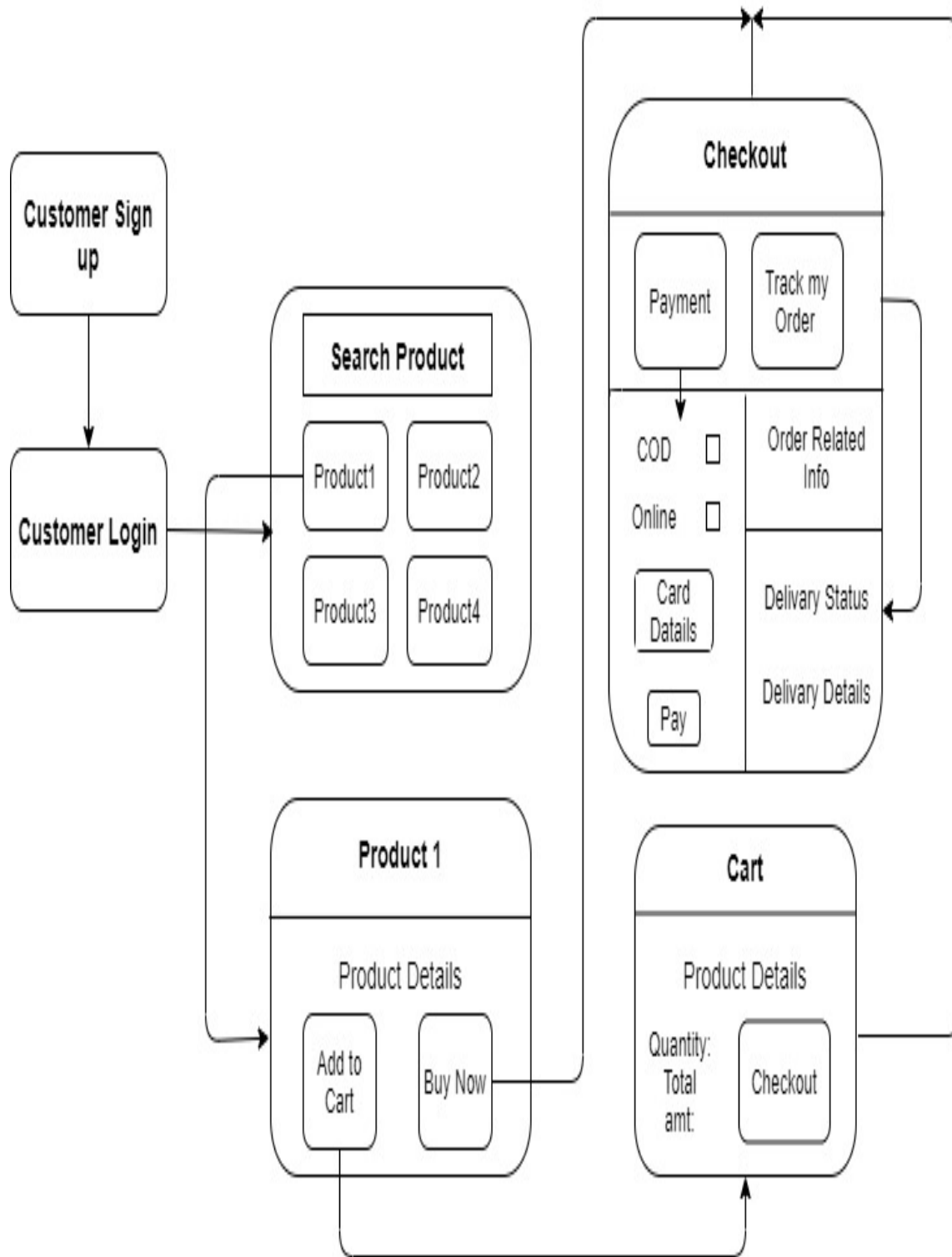


Figure 5.4: Customer Module

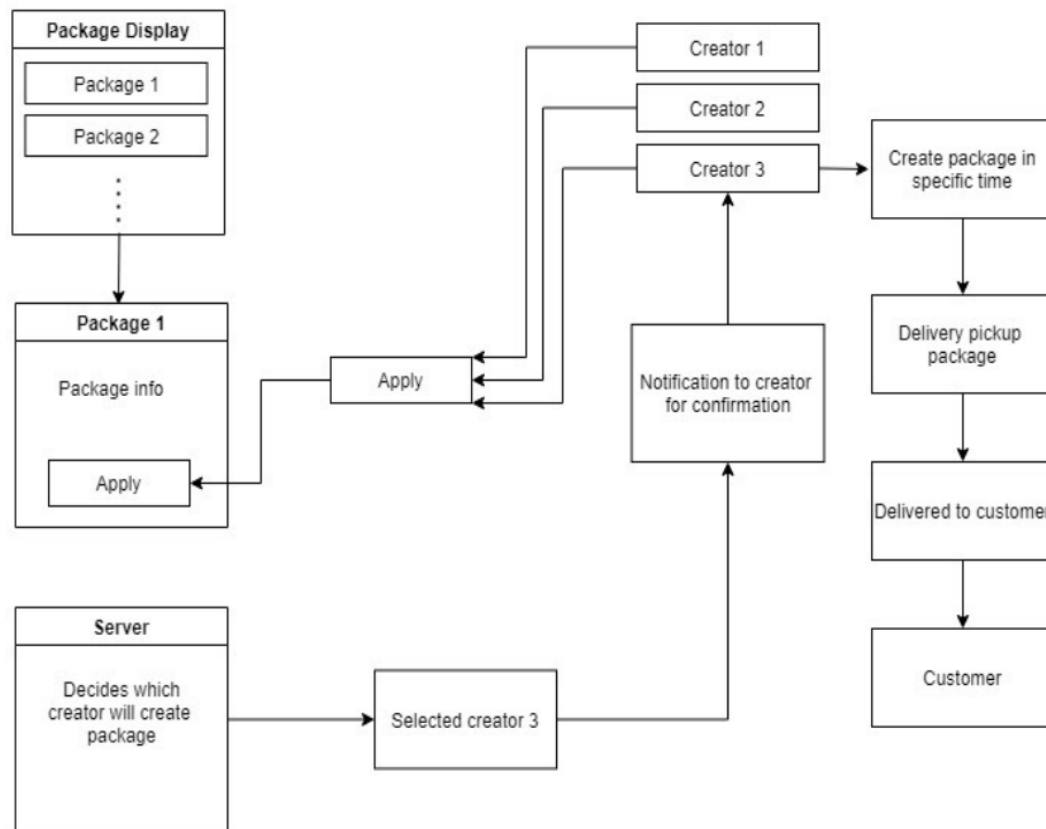


Figure 5.5: Package Module

5.3 External Interface Requirement

5.3.1 User Interfaces

Each part of the user interface is designed to be as user friendly as possible. The pages will be kept light in space so that it won't take long time to load.

5.3.2 Hardware Interfaces

- Server side Hardware.
- Hardware Recommended by the all the software needed.

- Communication hardware to server client request.
- Client side Hardware.
- Hardware recommended by respective client operating system Web browser.
- Communication hardware to communicate the server.

5.3.3 Communication Interfaces

Users can connect with system using browser and internet once user login user can easily buy the products. The ordering system of the application shall give an email confirmation to the customer that the good purchased will be delivered to the address along with the identity of the buyer.

5.4 Software System Attribute

- **Reliability:** Data validation verification need to be done at every stage of activity. Validation user input
- **Availability:** The web application should be available anywhere and any-time. User Session should timeout after 20 minutes of inactivity.
- **Performance:** The system will be used by multiple users and may grow as time passes. Necessary measures need to be taken to make the system as fast as possible.
- **Portability:** The application can be used regardless of the time and location constraints.
- **Security:** Application will allow only valid users to access the system. Access to any application resource will depend upon user's designation. Security is based upon the individual username and password.

5.5 Functional Requirement

Various functional modules that can be implemented by the system will be :

- **Registration:** If customer wants to buy the product then the person must be registered, unregistered user can't go to the shopping cart to buy the product.
- **Login:** Customer logs in to the system by entering valid user id and password for the shopping.
- **Changes to Cart:** Changes to cart means the customer after login or registration can make order or cancel order of the product from the shopping cart.
- **Payment:** In this system we are dealing the mode of payment by cash on delivery, credit card, debit card.
- **Logout:** After ordering or surfing for the product customer has to logout.
- **Report Generation:** After ordering for the product, the system will send one copy of the bill to the customer's Email-address and another one for the system database.

5.6 Non-Functional Requirement

Following Non-Functional Requirements will be there in the insurance to the internet:

- Secure access to consumer's confidential data.
- 24X7 availability.
- Better component design to get better performance at peak time.
- Flexible service based architecture will be highly desirable for future extension. Non-Functional Requirements define system properties and constraints. Various other Non-Functional Requirements are:
 - Security
 - Reliability
 - Maintainability

- Portability
- Extensibility
- Reusability
- Compatibility
- Resource Utilization

5.7 Risk Assessment

The risk in online shopping is mainly concerned with the misuse of credit cards, leakage of personnel information, product risk and risk of convenience.

5.8 Operational Feasibility

If the system meets the requirements of the customers and the administrator we can say that the system is operationally feasible. The proposed system will be beneficial only if it can be turned into a system which will meet the requirements of the store when it is developed and installed, and there is sufficient support from the users.

- The proposed system will improve the total performance.
- Customers here are the most important part of the system and the proposed system will provide them with a convenient mode of operation for them.
- The proposed system will be available to the customers throughout the globe.
- The proposed system will provide a better market for different dealers.

5.9 Flow Chart Diagram

The Flow Chart Diagram of the E-Marketplace for customize package shopping Application is as shown in Figure. The Flow Chart Diagram explains the flow of information in the project that is it indicates from where information (data) is received (inputs) and where information is send (outputs).

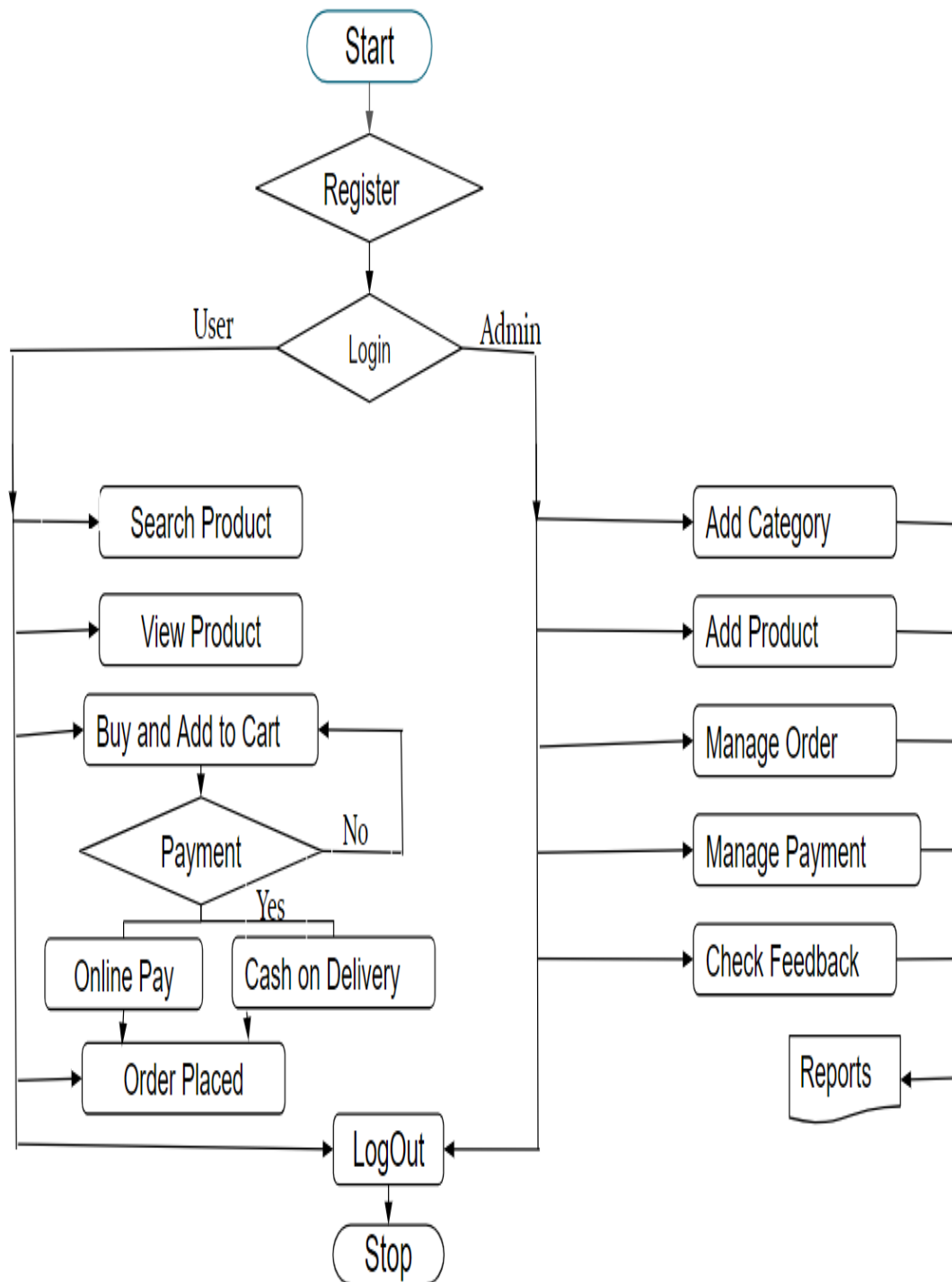


Figure 5.6: Flow Chart Diagram

5.10 Summary

In this chapter we studied the operating environment and the user classes and characteristics which describes the scope of the project. We have also described the software system attributes and various nonfunctional requirements.

Chapter 6

Modeling

This chapter includes the various modeling techniques which describes the various users of the application. It also describes the functionality of the different features of the Project.

6.1 Use Case Diagram

A use case diagram is a type of behavioral diagram defined by the UML created from a use case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals represented as use case and any dependencies between those use cases.

Four modeling elements make up the use case diagram; these are:

- **Actors:** Actors refer to a type of users, users are people who use the system. In this case student, teacher developer are the users of the framework and application
- **Use cases:** A use case defines behavioral features of a system. Each use case is named using a verb phrase that express a goal of the system. The name may appear inside or outside the ellipse.
- **Associations:** An association is a relationship between an actor and a use case. The relationship is represented by a line between an actor and a use case.
- **The include relationship:** It is analogous to a call between objects. One use case requires some type of behavior which is fully defined in another use case.

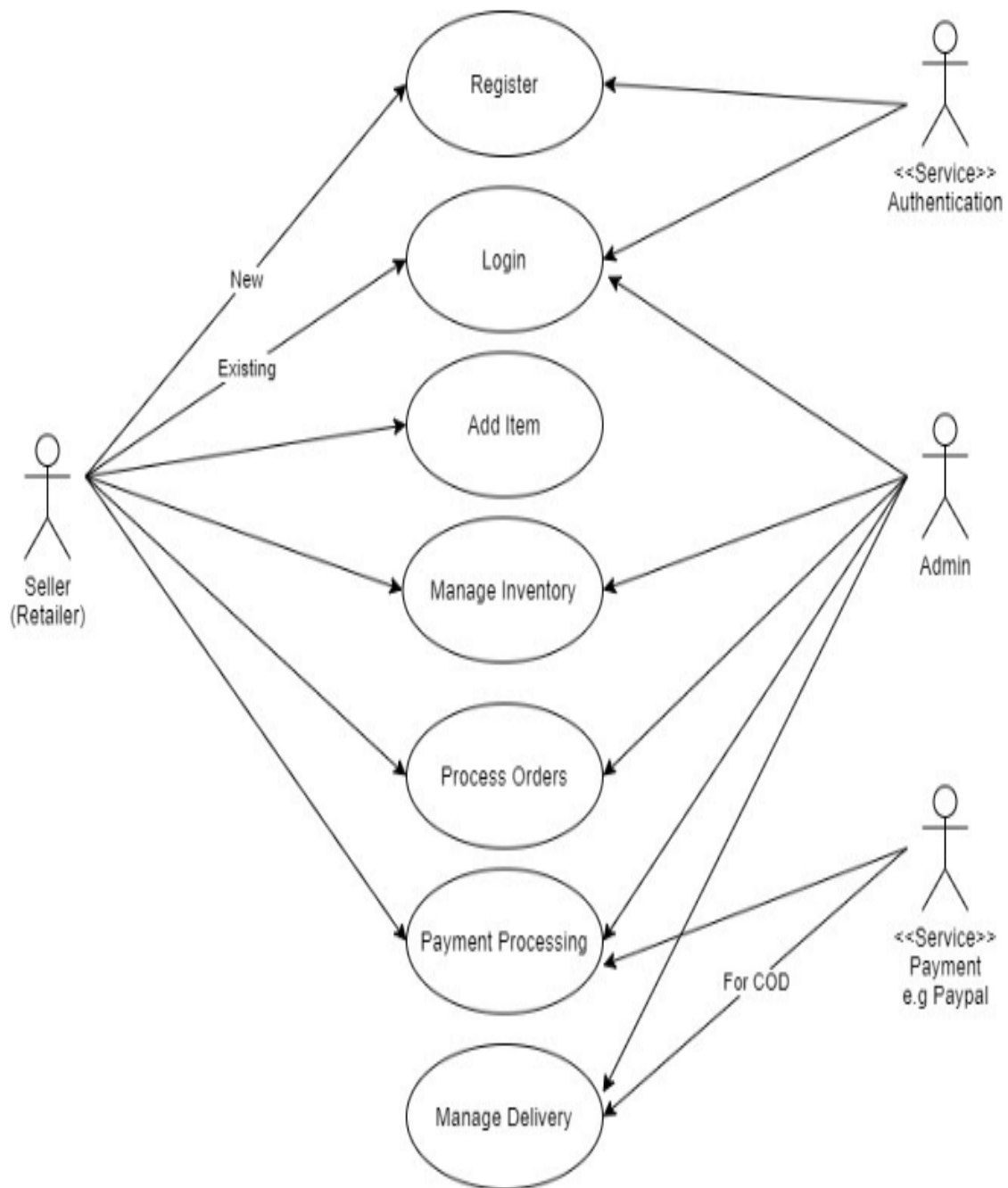


Figure 6.1: Use Case Diagram for Retailer

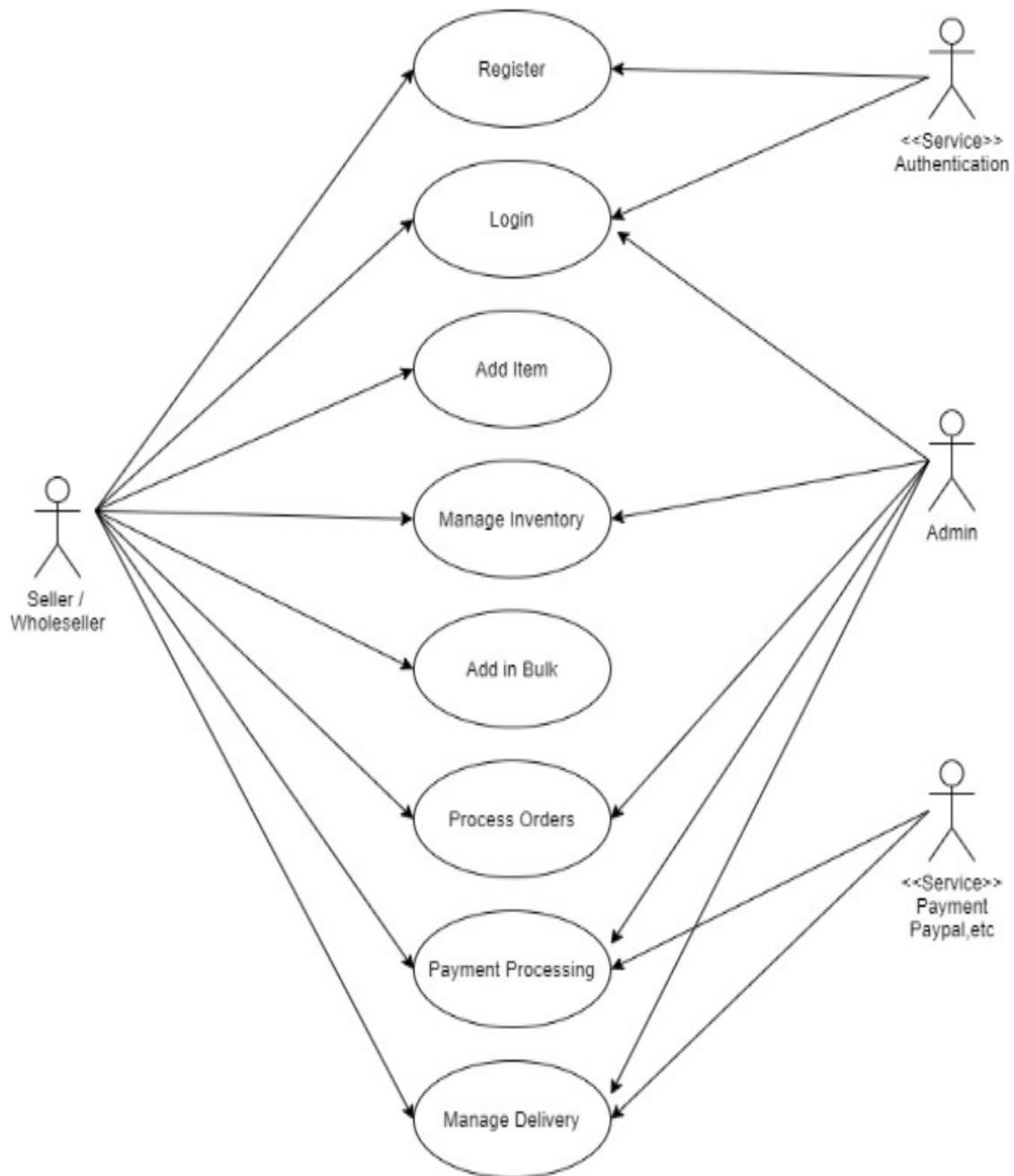


Figure 6.2: Use Case Diagram for Wholesaler

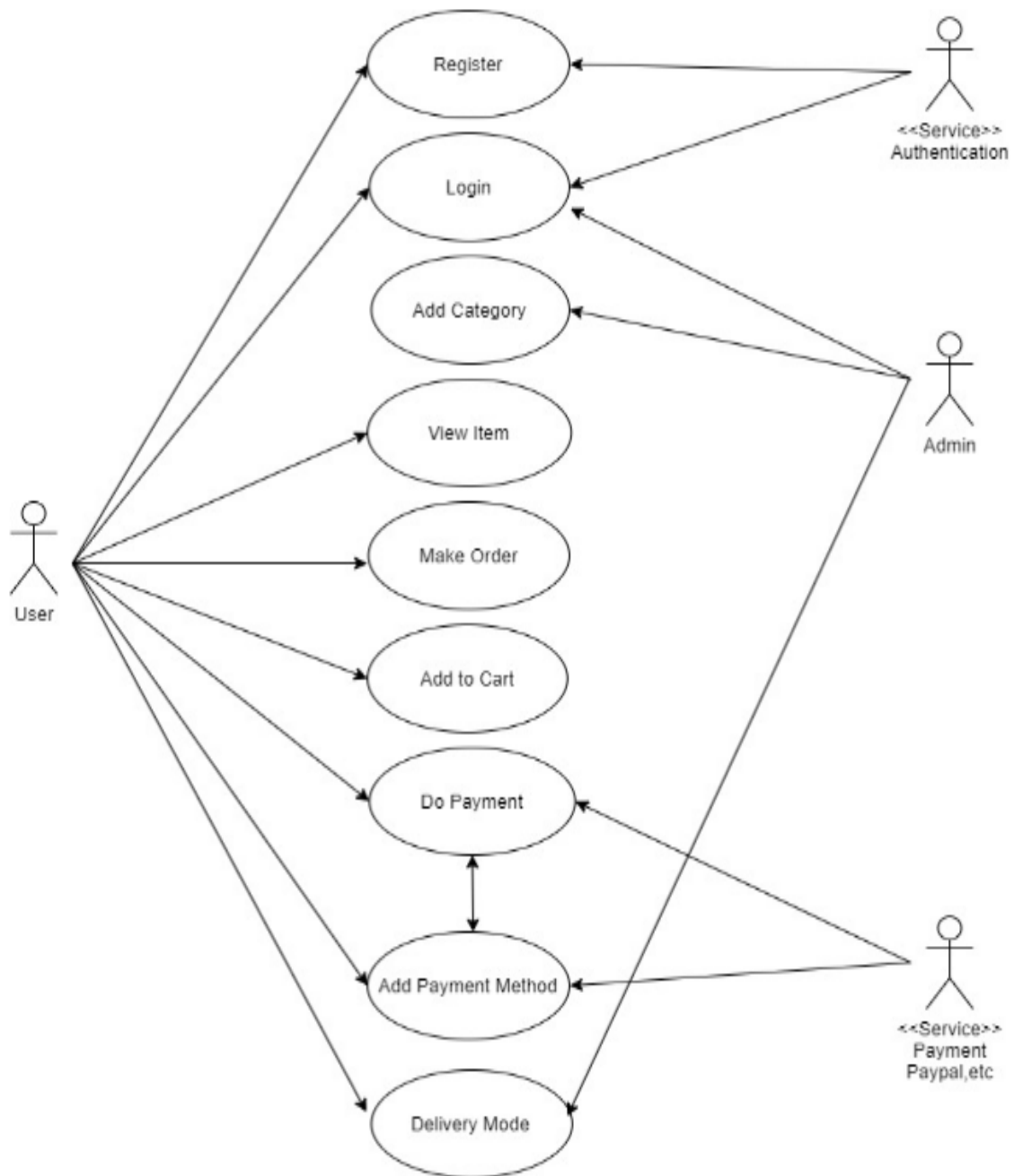


Figure 6.3: Use Case Diagram for Customer

In figure 6.1 use case diagram of retailer module gives us idea about the type of users. Here the user is retailer, he can register on the application and after that he can login to add the items, process orders of the customers and other activities like payment processing and delivery management. He can also add the available packages at his shop or also make a package on demand.

As shown in figure 6.2 the user in the wholesale module is the wholesaler who is going to register first. And after registration he can add the items and sell them in large stock to the retailer as well as some customers. He will have the products in bulk and he can process the orders and do payment processing as well as delivery management. It will be easy for the retailer to order a bulk of products at one place online at his comfort.

As shown in figure 6.3 the user is the customer who can view the products and after login he can make the order for particular product or package. He can make the payment by various method. And can have the track of delivery like whether he received the product or not. The customer who is new and does not register can only view the product and cannot buy it. Customer can add the product to the cart he wish to buy. Also the customer can give feedback and reviews of the product that will help other customers which will lead to the satisfaction of the customer. The customer can also get the recommendations for the products depending upon his search history. Customer can also demand for the packages like which products he want in one package. And the retailer who can provide this package can send notification to the customer, and then he can order that package.

6.2 Class Diagram

The class diagram shows the building blocks of any object oriented system. Class diagram depicts a static view of the model or part of the model, describing what attributes and behavior it has rather than detailing the methods of achieving operations. Class diagrams are most useful in illustrating relationships between classes and interfaces. Generalizations, aggregations, and associations are all valuable in reflecting interface, composition or usage and connections receptively.

The figure 6.4 illustrates relationships between classes. The classes are interrelated to each other in specific ways. It gives association between the classes. The relationships in class diagram include different types of logical connections. For example, in the figure Customer has various attributes like customer id, customer name, customer contact number, etc. which is connected to various modules billing information, product, shopping cart, etc. and same for other tables different attributes are there. It gives relation between shopping cart and order status. The following are such types of logical connections that are possible in UML:

- Association
- Directed Association
- Reflexive Association
- Multiplicity
- Aggregation
- Composition
- Inheritance/Generalization
- Realization

6.3 ER Diagram

ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.

ER Diagrams contain different symbols that use rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships. At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique. The purpose of ER Diagram is to represent the entity framework infrastructure. ER Diagram helps you to define terms related to entity relationship modeling. Helps to describe entities, attributes, relationships. ER diagrams are translatable into relational tables which allows you to build databases quickly. ER diagrams can be used by database designers as a blueprint for implementing data in specific software applications. The database designer gains a better understanding of the information to be contained in the database with the help of ER diagram.

In figure 6.5 the relationship between different entities is given. It provide a preview of how all your tables should connect, what fields are going to be on each table. For example Product is an entity and the fields it can have are product id, product name, price of the product, quantity, description about the product, image of the product, etc. and same for other entities different attributes are there. This information can be used to enter in the database while the seller add the items after login. It also gives the has a relationship between different entities. Finally, if we are going to discuss about admin, then entity Admin has the power to do everything that can control every entity. Product can be updated, deleted, inserted by this entity admin. This entity helps in maintaining relationships with customers.

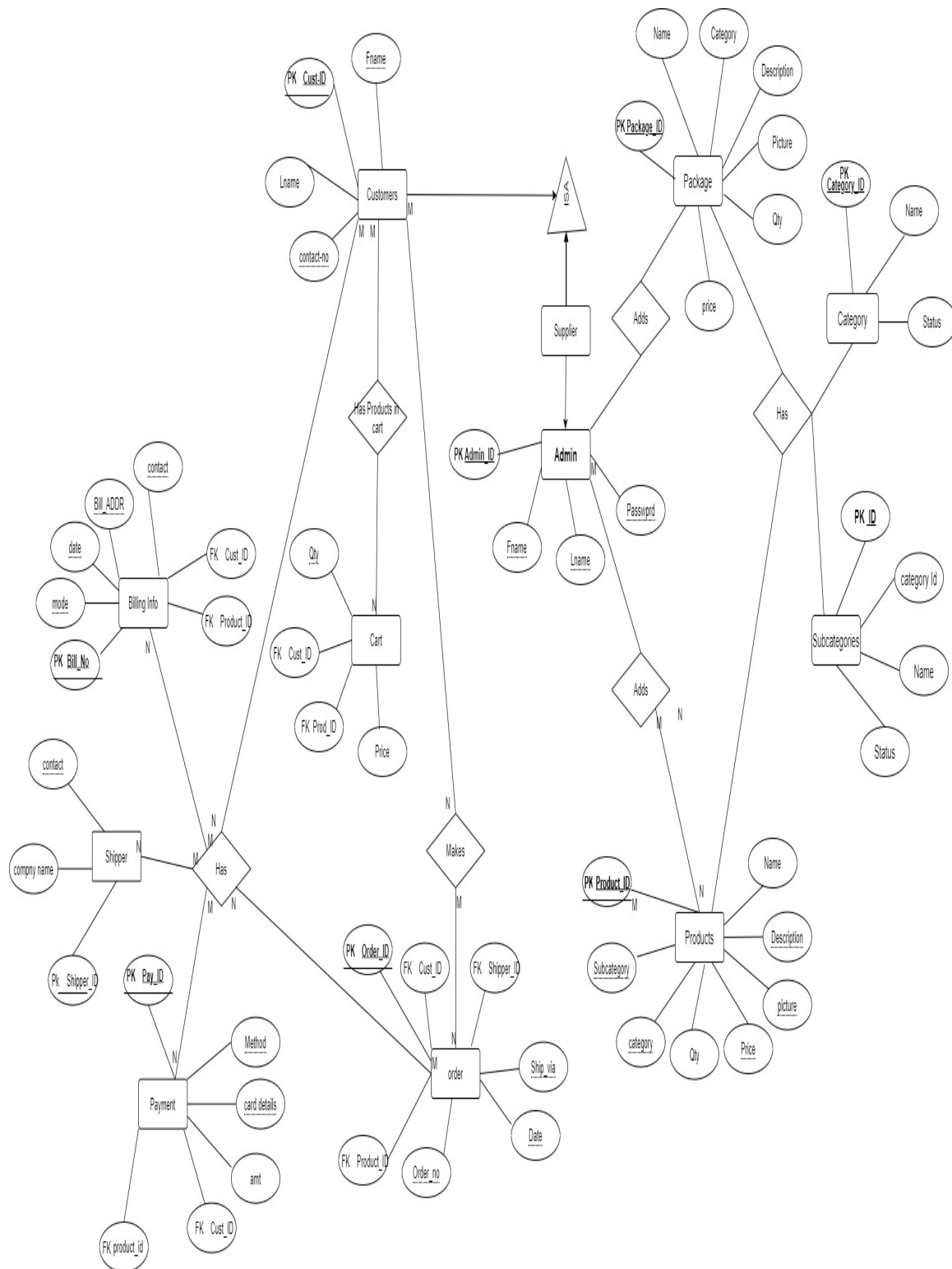


Figure 6.5: ER Diagram

6.4 Sequence Diagram

The sequence diagram is used primarily to show the interactions between objects in the sequential order that those interactions occur. Developers typically think sequence diagrams were meant exclusively for them. However, an organization's business staff can find sequence diagrams useful to communicate how the business currently works by showing how various business objects interact. Sequence diagrams illustrate how objects interact with each other. They focus on message sequences, that is, how messages are sent and received between a number of objects. The main purpose of sequence diagram is to show the order of events between the parts of system that are involved in particular interaction.

The basic element of sequence diagram is collection of participants, that is, the parts of the system that interact with each other during the sequence. The participants are arranged horizontally with no two participants overlapping each other. In Figure 6.4 developer, framework, applications are some examples of participants. A message is communication between objects that conveys information with the expectation that action will be taken. An event is any point in an interaction where something occurs. Message can flow in whatever direction makes sense for the required interaction from left to right, right to left, or even back to the Message Caller itself.

The below diagrams are Sequence Diagram of online shopping system for admin and customer, where admin will be able to login in their account using their credentials. After login user can manage all the operations on shopping, shopping cart, order, confirm order, delivery. All the pages such as Order, confirm order, delivery are secure and user can access these page after login. The figure 6.6 and 6.7 below helps demonstrate how the login page works in a online shopping system. The various objects in the confirm order, shopping, shopping cart, order and delivery page interact over the course of sequence, and user will not be able to access this page without their identity.

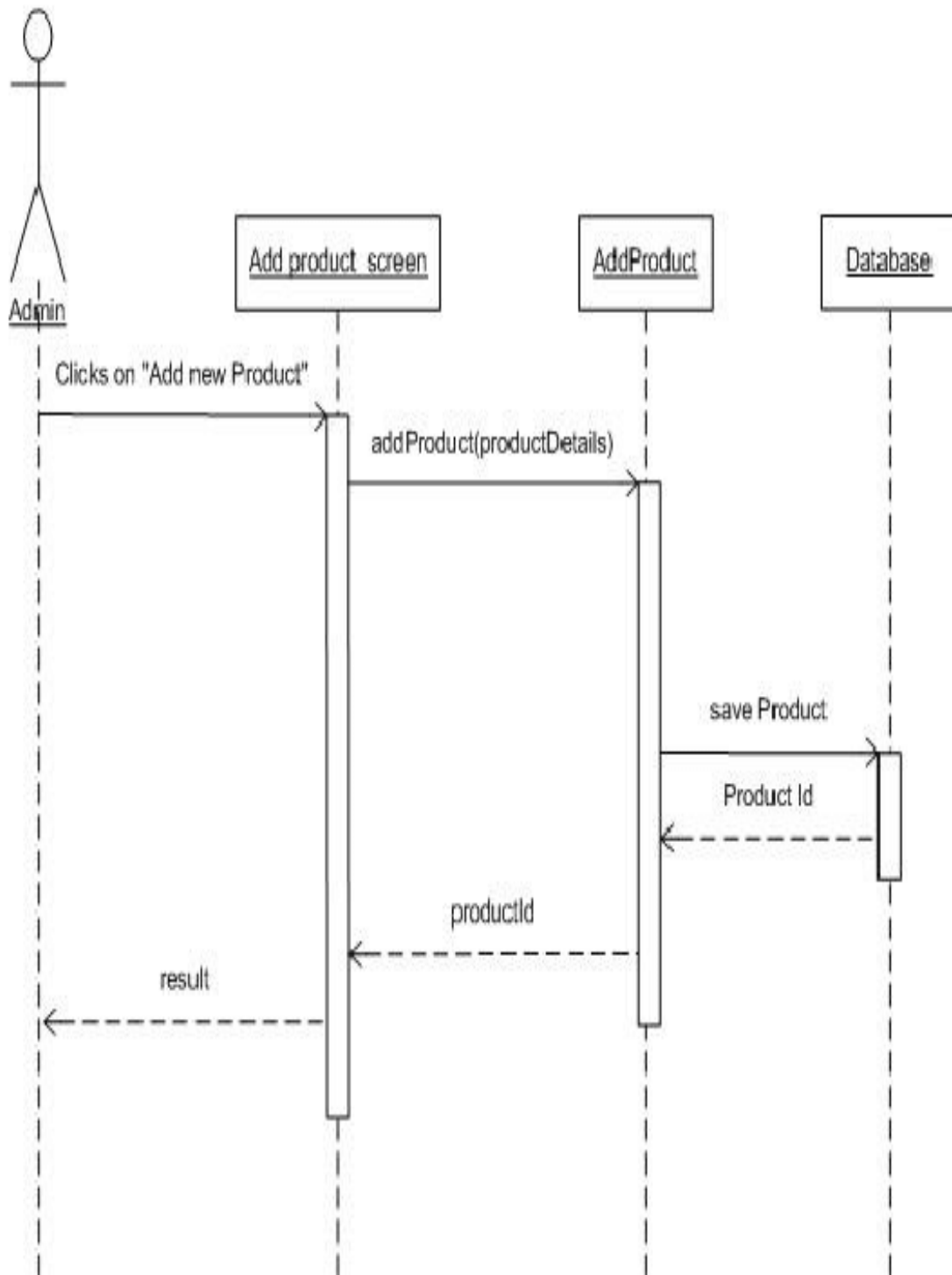


Figure 6.6: Sequence Diagram for Seller

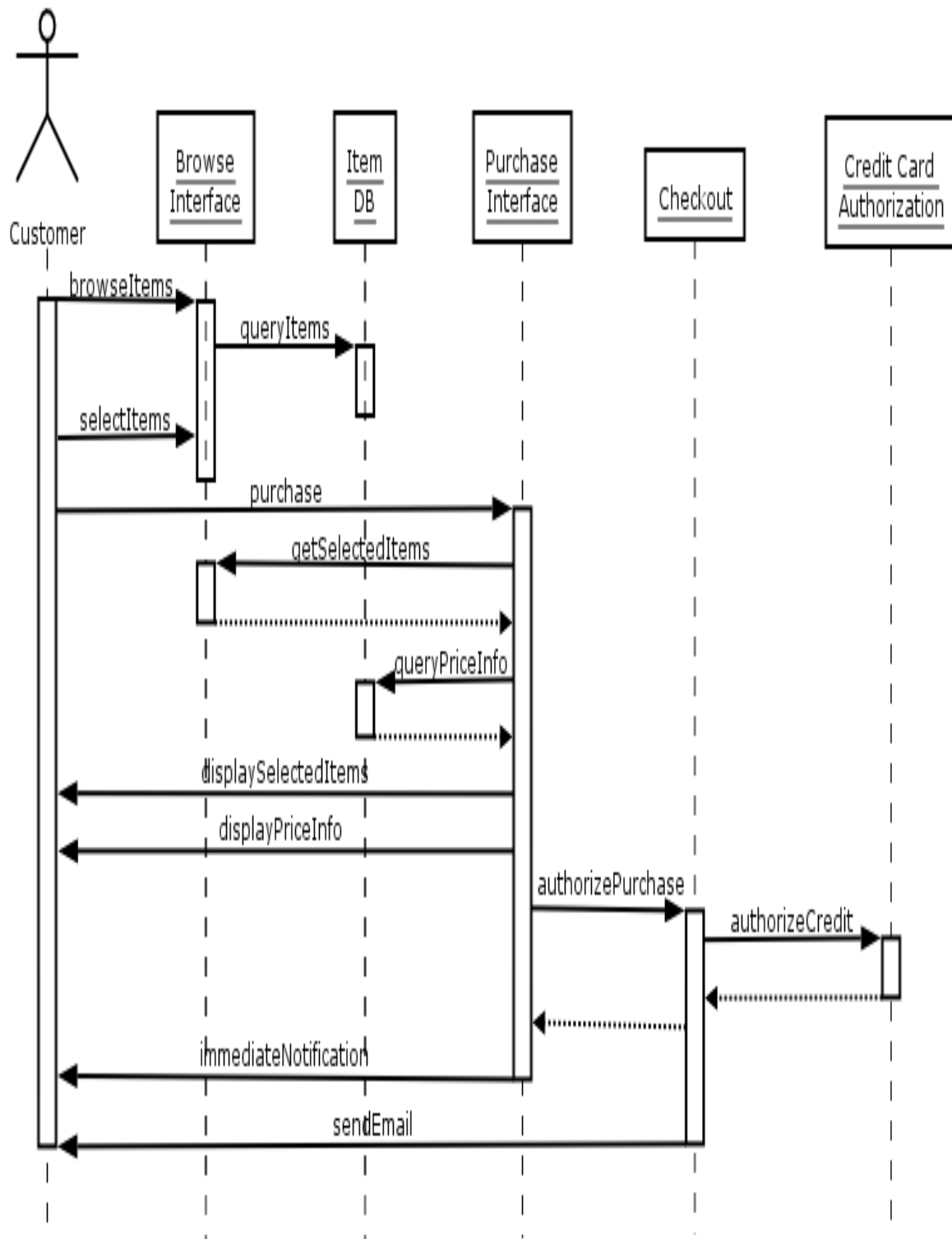


Figure 6.7: Sequence Diagram for Customer

6.5 Summary

Thus we saw the various modeling techniques used for the design of Applications.

Chapter 7

Implementation and Results

This chapter consists of the various implementation details and features used.

7.1 Implementation Details

This section describes the various features of the project and also describes the implementation methods. Following are some of the features explained with their implementation details:

- **Customer Panel**

- Registration/Login.

- Product List Categorization.

- Product Detailing (Images and description).

- Personalized Results.

- Product Wishlist.

- **Seller/Admin Panel** Login Input with Login ID Password.

- Dashboard Management.

- Manage Sellers.

- Manage Product category/subcategory.

- Manage Promotions, Rewards, Points.

- **Easy login registration:** Easier access translates into a higher conversion rate and sales volume. Users don't have to fill in a lot of data to start using the app. Such an easy entry point makes a mobile online store much more accessible.

- **Detailed product descriptions:** Customers interested in buying a product can check its details such as type, size, weight, color, material, and warranty. They have all the information they need is available in one place.
- **Packaging:** With the help of this customers will get all the things in one place and helps to improve customers experience and profitability.
- **Shopping cart:** A shopping cart allows customers to realize their purchase in several stages when they find it comfortable. For example, a user can add a product to the cart, and if they don't want to proceed to checkout immediately, return to it easily.
- **Multi-currency payment options:** The customers have multiple options of payment during the time of checkout with utmost security and safety. Popular modes of payment are cash on delivery, credit/debit card system, smart card, Ewallet, net banking, mobile payment, PayPal and Paytm.
- **Quick checkout:** This feature is a must for every e-commerce application. With the help of this feature, the users can complete their order with the information that is already provided in their profile which includes the billing and the shipping address of the user.
- **Ratings and Reviews:** The users should be allowed to review and rate the features of the app. The customers should be allowed to provide negative feedbacks about services and products as this will help with the improvement of our business.

7.2 Results

The snapshots below are taken of E-marketplace website with demo.

Following are the snapshots of M-Learning Application:

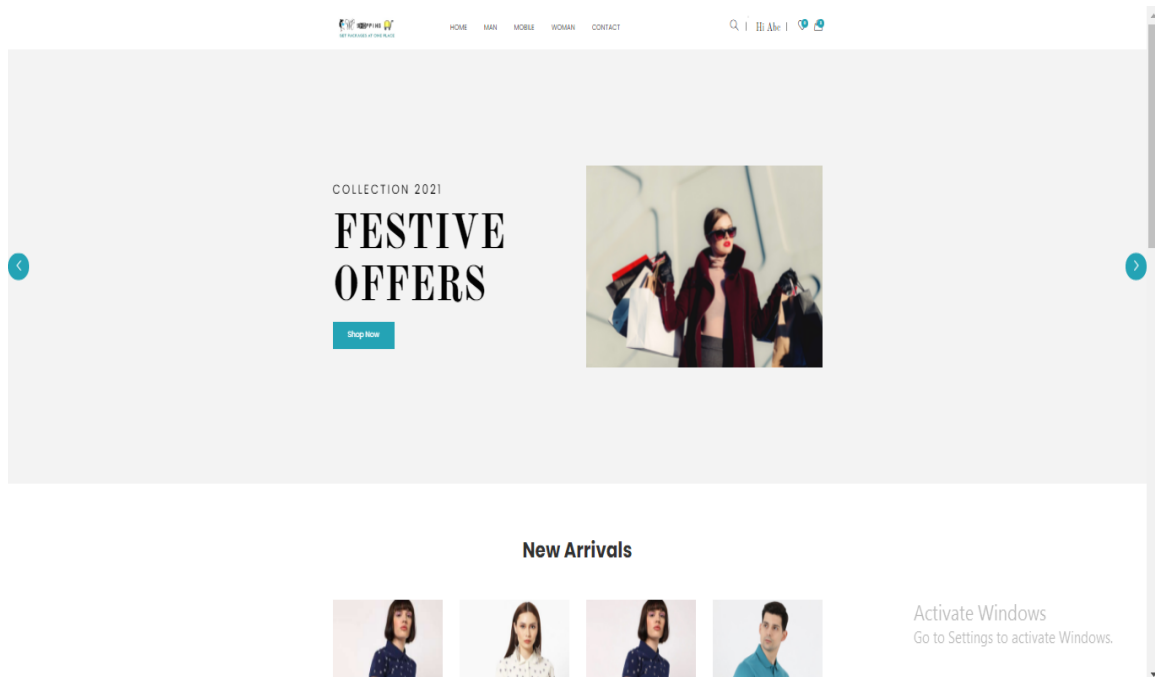


Figure 7.1: Overview of Website

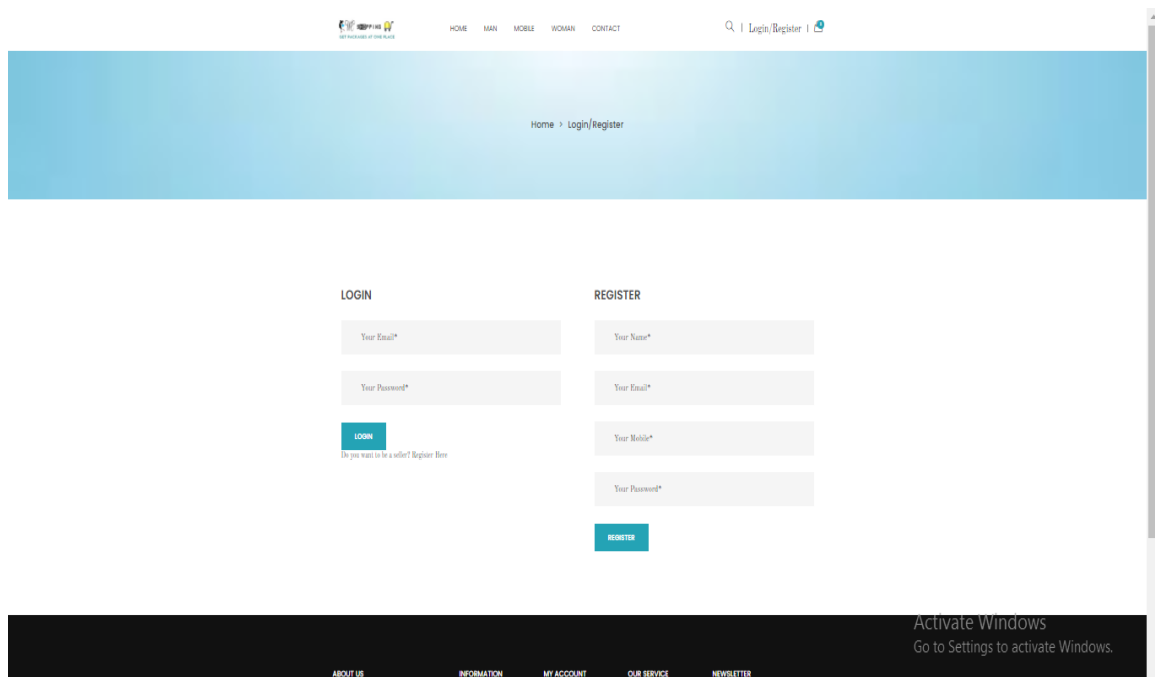


Figure 7.2: Login/Register for customer

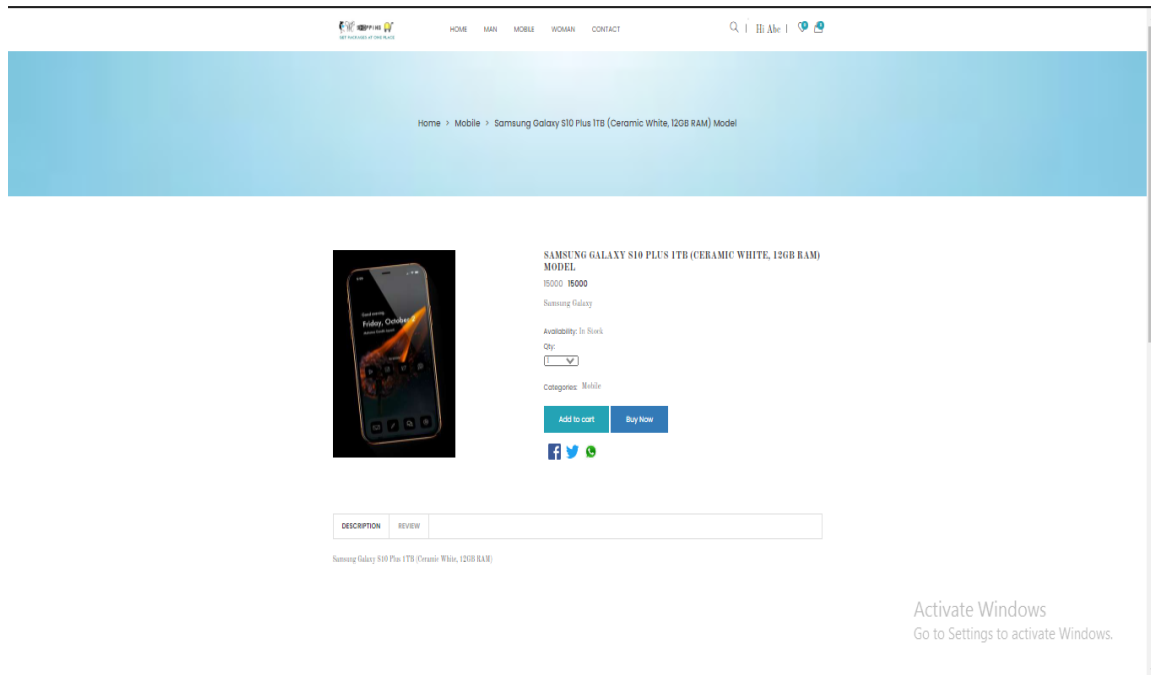


Figure 7.3: Product Detail Page after Clicking on any product.

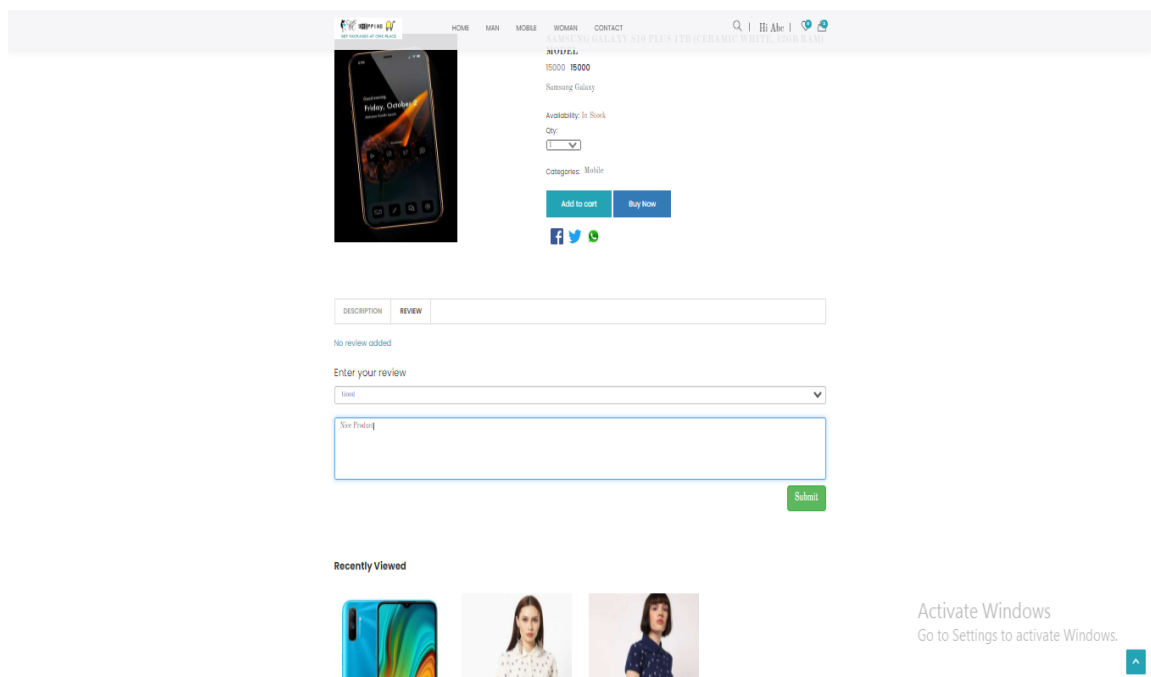


Figure 7.4: Review and Rating for product

E-Marketplace for Customize Package Shopping

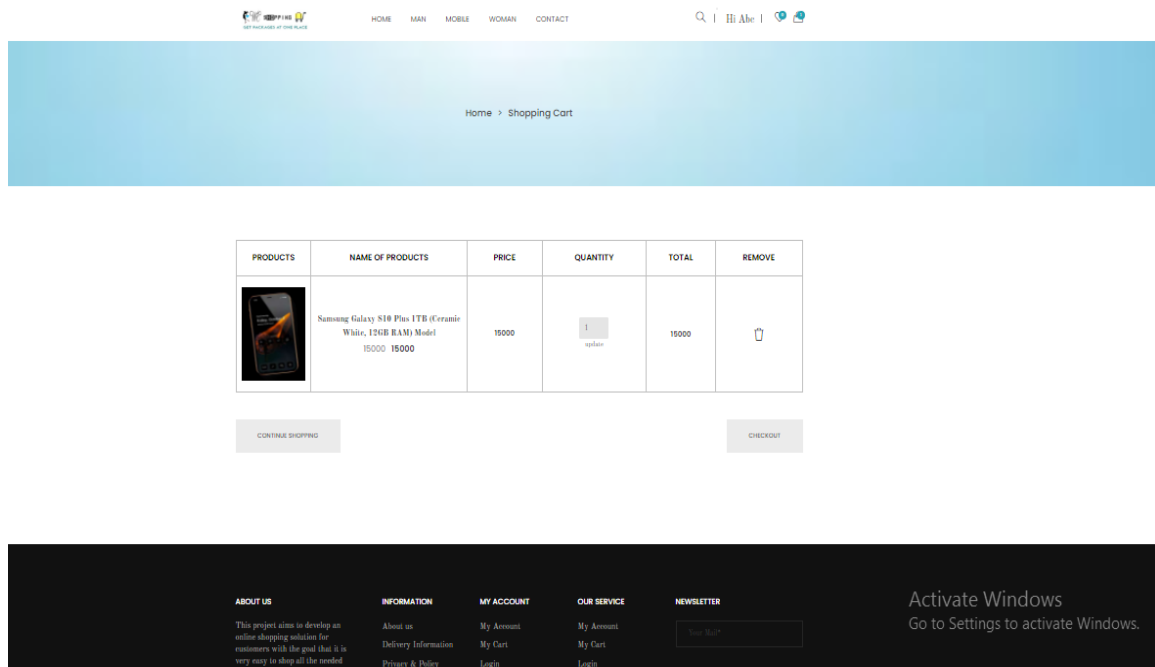


Figure 7.5: Product added to Cart

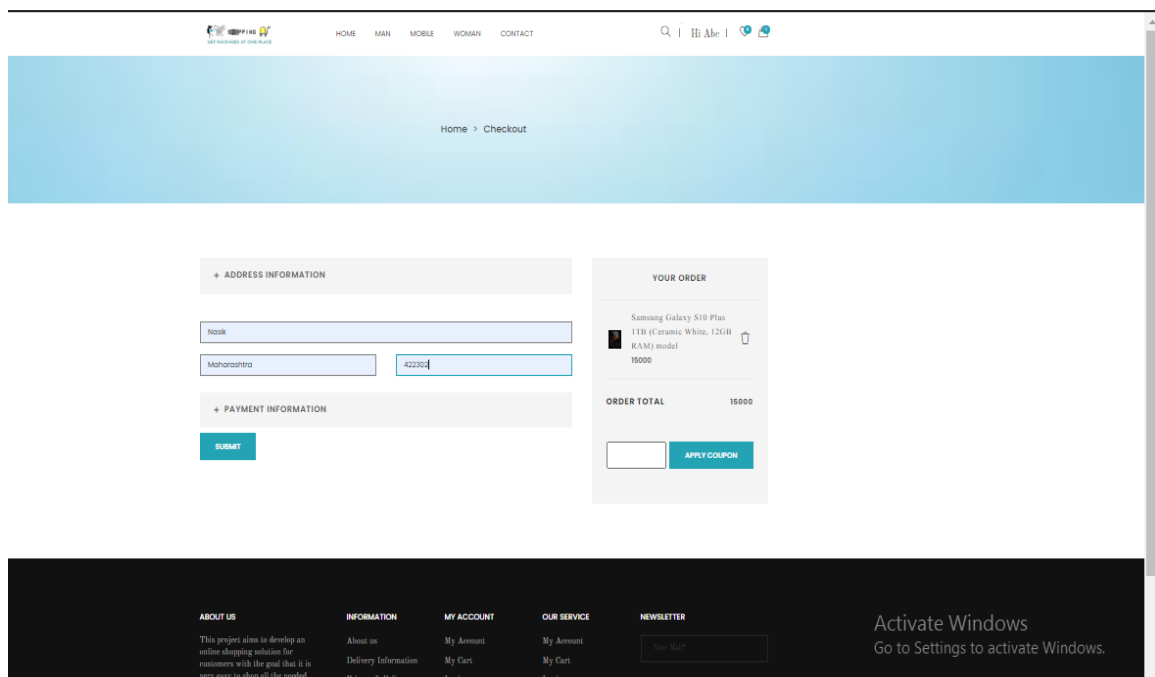


Figure 7.6: Checkout page

E-Marketplace for Customize Package Shopping

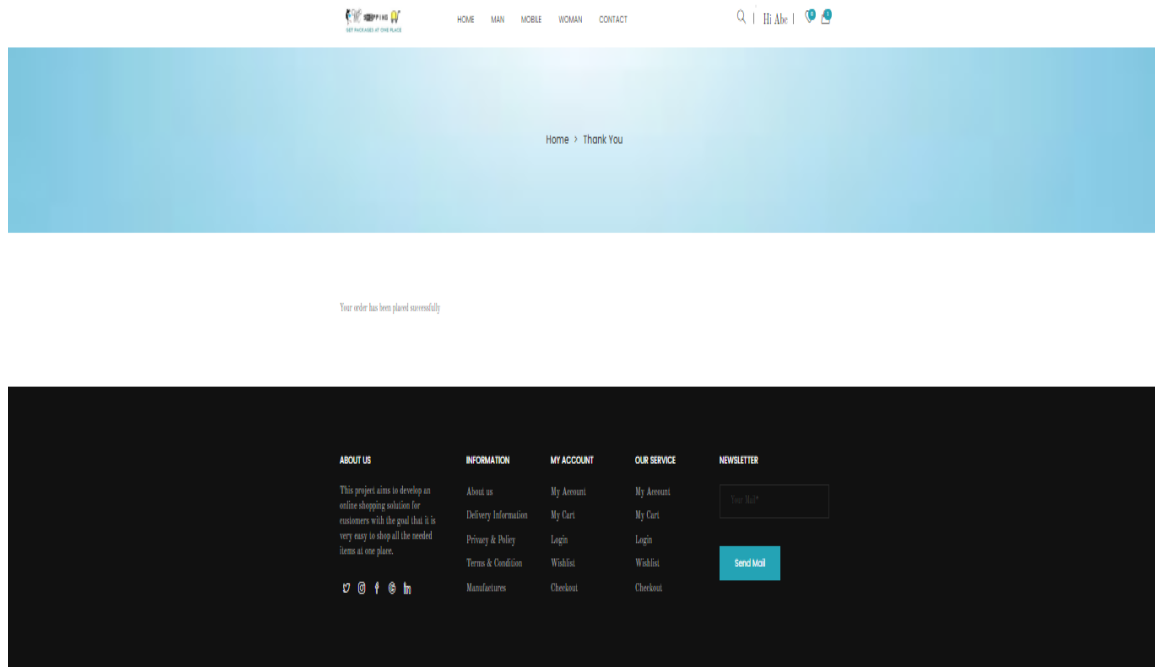


Figure 7.7: Order placed successfully

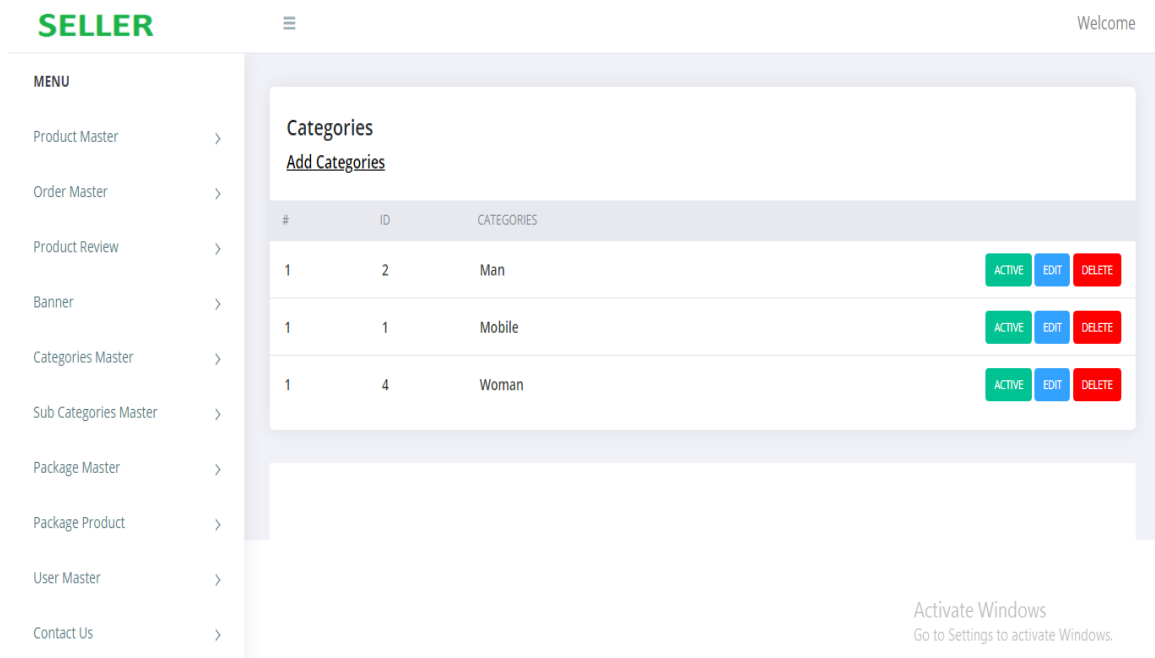
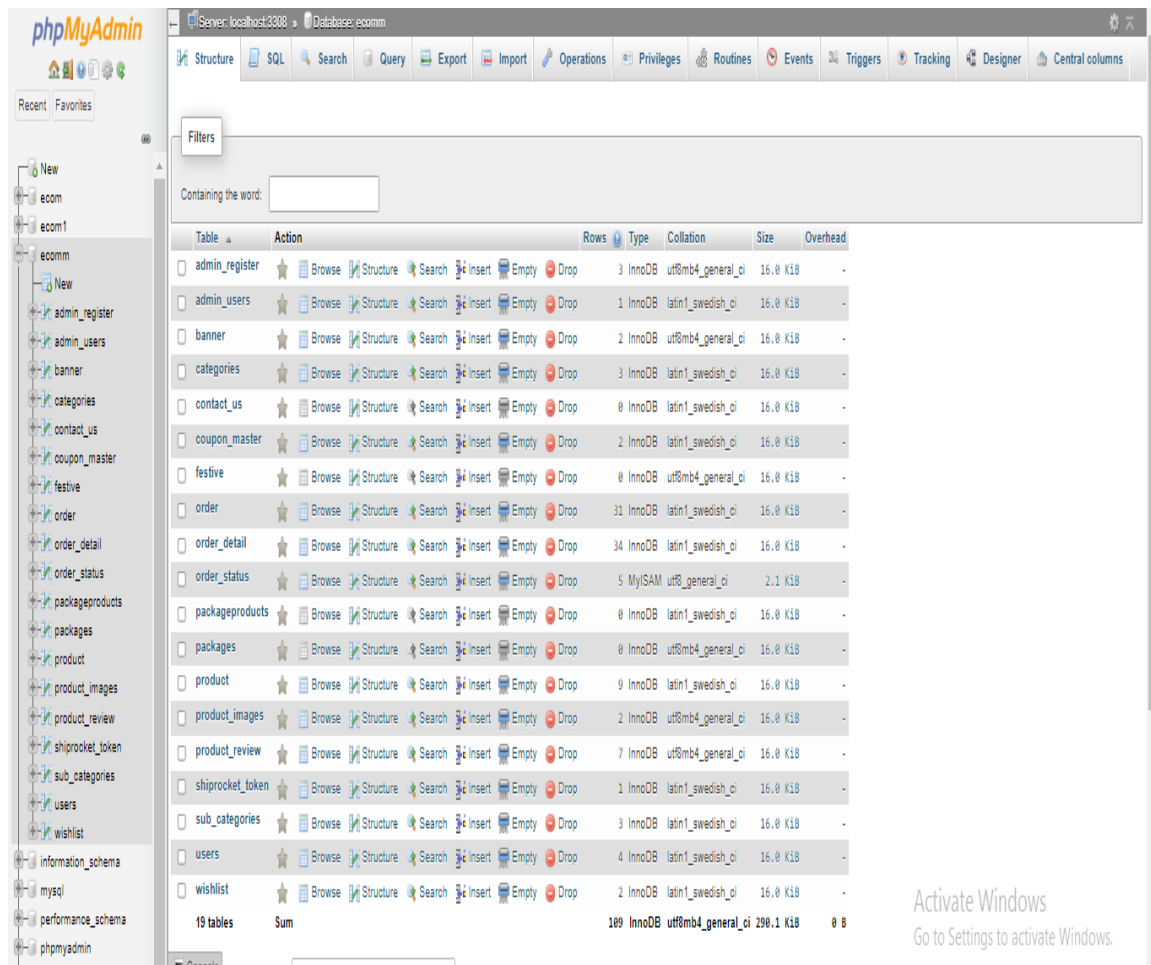


Figure 7.8: Seller page for adding products



Server: localhost:3308 Database: ecomm

Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers Tracking Designer Central columns

Filters

Containing the word:

| Table | Action | Rows | Type | Collation | Size | Overhead |
|------------------|---|------|--------|--------------------|-----------|----------|
| admin_register | Browse Structure Search Insert Empty Drop | 3 | InnoDB | utf8mb4_general_ci | 16.0 KiB | - |
| admin_users | Browse Structure Search Insert Empty Drop | 1 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| banner | Browse Structure Search Insert Empty Drop | 2 | InnoDB | utf8mb4_general_ci | 16.0 KiB | - |
| categories | Browse Structure Search Insert Empty Drop | 3 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| contact_us | Browse Structure Search Insert Empty Drop | 0 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| coupon_master | Browse Structure Search Insert Empty Drop | 2 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| festive | Browse Structure Search Insert Empty Drop | 0 | InnoDB | utf8mb4_general_ci | 16.0 KiB | - |
| order | Browse Structure Search Insert Empty Drop | 31 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| order_detail | Browse Structure Search Insert Empty Drop | 34 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| order_status | Browse Structure Search Insert Empty Drop | 5 | MyISAM | utf8_general_ci | 2.1 KiB | - |
| packageproducts | Browse Structure Search Insert Empty Drop | 0 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| packages | Browse Structure Search Insert Empty Drop | 0 | InnoDB | utf8mb4_general_ci | 16.0 KiB | - |
| product | Browse Structure Search Insert Empty Drop | 9 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| product_images | Browse Structure Search Insert Empty Drop | 2 | InnoDB | utf8mb4_general_ci | 16.0 KiB | - |
| product_review | Browse Structure Search Insert Empty Drop | 7 | InnoDB | utf8mb4_general_ci | 16.0 KiB | - |
| shiprocket_token | Browse Structure Search Insert Empty Drop | 1 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| sub_categories | Browse Structure Search Insert Empty Drop | 3 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| users | Browse Structure Search Insert Empty Drop | 4 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| wishlist | Browse Structure Search Insert Empty Drop | 2 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| 19 tables | Sum | 109 | InnoDB | utf8mb4_general_ci | 290.1 KiB | 0 B |

Activate Windows
Go to Settings to activate Windows.

Figure 7.9: Database of the website

7.3 Summary

In this chapter we discussed the implementation details of the E-Marketplace for Customize Package Shopping and also the implementation of various features included in the application.

Chapter 8

Testing

This chapter includes the details of Formal Technical Review meetings and describes the process carried during the review process. It also includes the Test Plan adopted for testing the E-marketplace Website.

8.1 Formal Technical Review

Formal Technical Reviews and Inspections of documents or software are performed to identify and remove defects. The Formal Technical Review of our project was carried at regular intervals in the form of online meetings and brainstorming sessions conducted in presence of our project guide. The process included verification of the checklist which was developed for the review process ,the code review checklist template is as follows:

8.2 Test Plan

| Module being Tested | Expected Result | Actual Result | Verdict |
|----------------------------------|--|--|---------|
| Basic Login and Register feature | When a user wants to buy a product he/must be given a register/login option. After registering the customer should be able to login. | On registering the customer is able to login by using the details provided while registration. | PASS |

| | | | |
|----------------------------|---|---|------|
| Product addition by Seller | The seller should be able to add the product at its login and that product should be seen on the website | After adding the products by seller, its visible at web-site. | PASS |
| Adding Product to Cart | Customer should be given option of Add to cart when the customer don't want to buy the product instantly. | Add to cart option is given to the customer for adding the products so he can buy it later. | PASS |
| Payment Option | When customer wants to buy the product various payment option should be provided. | Payment option like cash on delivery and online payment mode given. | PASS |
| Package addition by Seller | The seller should be able to add various packages like diwali package,baby products package etc | Packages are added by the seller and shown on website end. | PASS |

Table 8.1: Test Plan for E-Marketplace for customized package shopping

8.3 Summary

In this chapter we have described the formal technical reviews and the outcome of those. We have described the Test Plan which was successfully carried out at regular development phases.

Chapter 9

Technical Specifications

In this chapter we will discuss the advantages and limitations of the E-Marketplace System. We will also go through the applications and have a brief study about the technical requirements.

9.1 Advantages

A key benefit is Customers can purchase items from the comfort of their own homes or work place. Shopping is made easier and convenient for the customer through internet. It is also easy to cancel the transactions. Online stores do not have space constraints and a wide variety of products can be displayed on websites. It helps the analytical buyers to purchase a product after a good search. Due to rapid growth of technology, business organizations have switched over from the traditional method of selling goods to electronic method of selling goods. Business organizations use internet as a main vehicle to conduct commercial transactions. Online consumers can track the order status and delivery status tracking of shipping is also available.

Following are some more advantages of E-Marketplace:

- Saves Time and Efforts.
- Online stores are usually available 24 hours and many consumers have internet access. So it is very convenient for them to shop online.
- Due to customize packaging, no need to go different places, everything at one place only.

- Increases employability as anyone can register if they want to sell something.
- Retailer can sell the seasonal products according to requirement.
- No intermediary service.

9.2 Limitations

Though internet provides a quick and easy way to purchase a product, some people prefer to use this technology only in a limited way. They regard internet as a means for gathering more information about a product before buying it in a shop.

Long duration and lack of proper inventory management result in delays in shipment. Though the duration of selecting, buying and paying for an online product may not take more than 15 minutes; the delivery of the product to customer's doorstep takes about 1-3 weeks. This frustrates the customer and prevents them from shopping online. Lack of touch-feel-try creates concerns over the quality of the product on offer.

9.3 Applications

The purpose of online shopping is to save time, save money. Through online shopping one can save his valuable time. One can watch and select things he wants to buy.

- Online Marketing and purchasing.
- Retail and wholesale

9.3.1 Hardware Requirements

- Microsoft® Windows® 7/8/10 (64-bit)
- 4 GB RAM minimum, 8 GB RAM recommended.
- 2 GB of available disk space minimum, 4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
- 1280 x 800 minimum screen resolution.

9.3.2 Software Requirements

- VScode
- Database SQL Server

9.4 Summary

In this chapter we were made aware of the various advantages and also the limitations of the project. We also saw the hardware and software requirements of the project.

Chapter 10

Conclusion

This project idea gives details about the application based “E-Marketplace for customised package shopping.” Our project provides a solution for customer as well as seller to buy and sell products online with a feature of customize packaging and selling seasonal products. As there is no intermediary service the customer can directly connect to the shopkeeper. Our proposed solution will help the customer to find the nearby shops easily and will save the time of the customer. Also most of the online stores are usually available 24 hours and many consumers have internet access both at work and home. So it is very convenient for them to shop online.

The E-Marketplace for customized package shopping is designed to provide a solution that would make searching, viewing and selection of a product easier. The search engine provides an easy and convenient way to search for products where a user can Search for a product interactively and the search engine would refine the products available based on the user’s input. The user can then view the complete specification of each product. They can also view the product reviews and also write their own reviews. So this will be more helpful for the customer while selection of product.

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