E-COMMERCE SYSTEMS

1 CONTENTS

- Integration Testing
- Functional Testing
- White box Testing
- Blackbox Testing

AIM

To design a project on E-commerce System that allows people to buy and sell physical goods , services and digital products over the internet rather than shop to shop.

1. INTRODUCTION

Online Shopping System helps in buying of goods, products and services online by choosing the listed products from website (E-Commerce site). The proposed system helps in building a website to buy, sell products or goods online using internet connection. Purchasing of goods online, user can choose different products based on categories, online payments, delivery services and hence covering the disadvantages of the existing system and making the buying easier and helping the vendors to reach wider market.

The system helps in buying of goods, products and services online by choosing the listed products from website (E-Commerce site).

Problem definition:

In day to day life, we need to buy lots of goods or products from a shop. It may be food items, electronic items, house hold items etc. Now a days, it is really hard to get some time to go out and get them by ourselves due to busy life style or lots of works. In order to solve this, B2C E-Commerce websites have been started. Using these websites, we can buy goods or products online just by visiting the website and ordering the item online by making payments online.

Evidences of problem definition:

This existing system of buying goods has several disadvantages. It requires lots of time to travel to the particular shop to buy the goods. Since everyone is leading busy life now a days, time means a lot to everyone also there are expenses for travelling from house to shop. More over the shop from where we would like to buy something may

not be open 24x7x365.Hence we have to adjust our time with the shopkeeper's time or vendor's time.

Proposed solution:

In order to overcome these, we have e-commerce solution, i.e one place where we can get all required goods/products online. The proposed system helps in building a website to buy, sell products or goods online using internet connection. Purchasing of goods online, user can choose different products based on categories, online payments, delivery services and hence covering the disadvantages of the existing system and making the buying easier and helping the vendors to reach wider market

Scope:

- Most generic consumer to consumer e-commerce website, which covers almost all possible categories, with 2 level listing.
- Maximize benefits and minimize the disadvantages of a common e-commerce website.
- User friendly, Vendor friendly environment.

Objectives:

Our main objective is to choose products faster and easier at one place and also saves time travelling to the vendors/seller's place .It also include following objectives such as:

- Reports generated can be saved for further references.
- Alerts and real time reporting through E mails (to both vendor as well as buyers).
- Good/Trusted & tension free delivery services.

2. System Requirements:

Hardware Requirements:

- Processor: Pentium or Higher.
- RAM: 312MB or Higher.

Software Requirements:

- Operating System: Unix, Linux, Mac, Windows etc..
- Development tool: PHP Hypertext Pre processor, JavaScript, Ajax
- Data Base: MySQL

3.System Analysis:

System analysis is the process of gathering and interpreting facts, diagnosing problems and using the information to recommendimprovements on the system. System analysis is a problem solvingactivity that requires intensive communication between the system users and system developers. System analysis or study is an Important phase of any system development process.

The system is viewed as a whole, the inputs areidentified and the system is subjected to close study to identify theproblem areas. The solutions are given as a proposal. The proposalis reviewed on user request and suitable changes are made. This loop tends as soon as the user is satisfied with the proposal.

4.Functional Requirements:

- **Master Maintenance:** This module consists of information about the products and services. This includes two sub-modules, Product master and Price master.

- **Product Master:** Product master includes the information about particular product, such as product number, item name, category, images of products, description, features, constraints of products which are to be displayed on the website.

- **Price master:** Price master deals with the cost of the product, discounts applicable for the particular product of a vendor /seller.

- **Transactions:** All transactions undergoing in the website will be controlled and managed by this module. Transactions in the sense, Shopping Cart management
- **Reporting:** This module deals with report management of the entire system. This includes three sub-modules Stock Report, Order Report and Delivery Report.

- **Order Report:** Order Report will have the list of products ordered and the customer details who have bought that product, which are undelivered.

- **Delivery Report:** Delivery Reports will generate products list, which are delivered to customers.

- **Housekeeping Module:** This module deals with backing up of data for future references and hence to reduce the database size.

5. Data Dictionary

Table: -Tbl _ User

Description: -

This table store information of User like Name, Address, Contact No, and Email Address. Each User has associated reference in User, which stores projects belong to User, P roduct which stores Product Information belong to User.

Fields:

FIELD NAME	DATA TYPE	DESCRIPTION	ALLOW NULL
vcID	varchar(50)	User Name	Primary key
vcPass	Varchar(20)	Password	Not Null
vcFsNm	Varchar(50)	First Name	Not Null
vcLsNm	Varchar(50)	Last Name	Not Null
vcGender	Varchar(6)	Gender	Not Null
vcAdd	Varchar(50)	Address	Not Null
vcCity	Varchar(50)	City	Not Null
vcState	Varchar(50)	State	Not Null
vcZipcode	Varchar(10)	Zip code	Not Null
vcCnctNo	Varchar(20)	Contact no	Not Null
vcEmailId	Varchar(50)	Email id	Not Null
vcConPass	Varchar(20)	Conformpassword	Not Null

Table :Tbl _ Product

Description:

- This table stores Information about Product of each User.

Fields:

FIELD NAME	DATE TYPE	DESCRIPTION	ALLOW NULL
nmID	Numerical(4,0)	Product ID	Primary key
vcNm	Varchar(50)	Product Name	Not Null
txtDes	Text	Description	Not Null
nmPrice	Numerical(4,0)	Price	Not Null
nmQuan	Numerical(4,0)	Quantity	Not Null
nmDis	Numerical(4,0)	Discount	Not Null
Image	Image	Product image	Not Null
nmCtgryID	Numerical(4,0)	Category ID	Foreign Key

Table:-Tbl_Category

Description:

- This table stores Information about Category of each User.

Fields:

Field Name	Data Type	Description	Allow Null
nmctgryID	Numerical(3,0)	Category Id	Primary key
vcNm	Varchar(50)	Category name	Not Null
txtDes	Text	Description	Not Null

Table:-Tbl_ Shopping Cart

Description:

- This table stores Information about Cart.

Field:

Field Name	Data Type	Description	Allow Null
nmId	Numerical(4,0)	Product ID	Primary key
vcNm	Varchar(50)	ProductName	Not Null
nmQuan	Numerical(18,0)	Quantity	Not Null
nmprice	Numerical(18,0)	Price	Not Null

Table:-Tbl-Order detail

Description:

- This table stores Information about Order of each User.

Fields:

Field Name	Data Type	Description	Allow Null
nmNo	Numerical(4,0)	Order No	Primary key
nmID	Numerical(4,0)	Product ID	Not Null
nmQuan	Numerical(18,0)	Quantity	Not Null
nmPrice	Numerical(18,0)	Order Price	Not Null
nmAmt	Numerical(18,0)	Total Amount	Not Null

Table:-Tbl_Admin

Description:

- This table stores Information about Admin.

Fields:

Field Name	Data Type	Description	Allow Null
vcID	Varchar(50)	Admin Id	Primary key
vcPass	Varchar(20)	Admin Password	Not Null
txtEmailId	Varchar(50)	Admin EmailId	Not Null

6. What are UML Diagrams?

UML (Unified Modeling Language) diagrams includes the major actors, roles, actions, artifacts, or classes, in order to better understand the information .Software engineers uses UML modeling language to create diagrams. That is to provide ready-to-use, expressive modeling examples to users (programmers).

The UML Diagrams are categorized into two types:

STRUCTURAL DIAGRAMS : The Structural UML Diagrams represents the rightful structure.

BEHAVIOURAL DIAGRAMS: Behavioural UML Diagrams illustrates the System's behaviour towards the users and data handling.

The following UML diagrams describe the process involved in the E-COMMERCE SYSTEM

- Use case diagram
- Class diagram
- Sequence diagram
- Collaboration diagram
- Activity diagram
- Component diagram
- Package diagram

Use case Diagram:

A use case diagram purpose is to present a graphical overview of the functionality provided by the system in terms of actors, their goals, and any dependencies between those use cases. A use case is an interaction between users and a system in a particular environment. It captures the goal of the users and the responsibility of the system to the user. It is represented using ellipse.

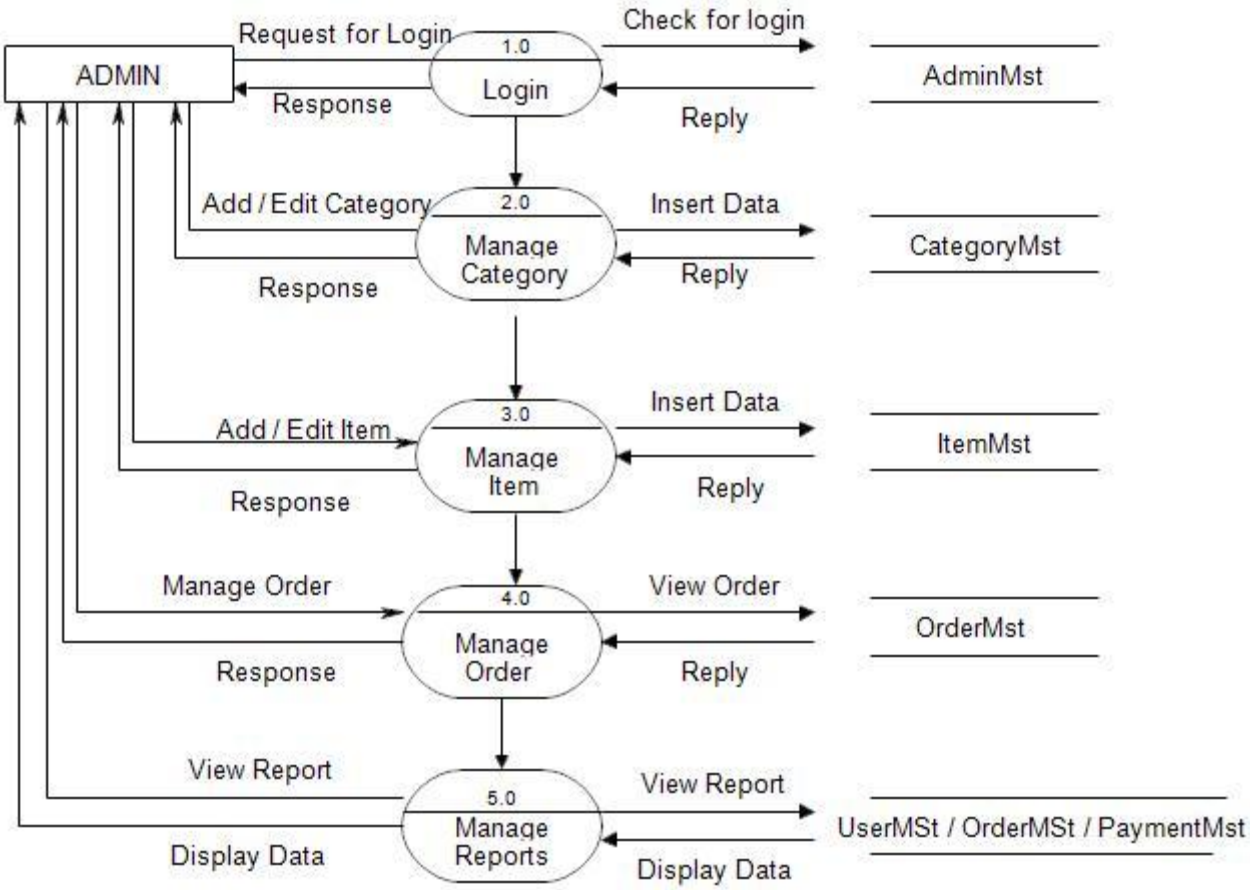
DOCUMANTATION OF USECASE DIAGRAM

Actors are Admin, seller , customer

Admin Activity:

- Manage Accounts
- Delete Accounts
- Login

Admin Side DFD - 1st Level



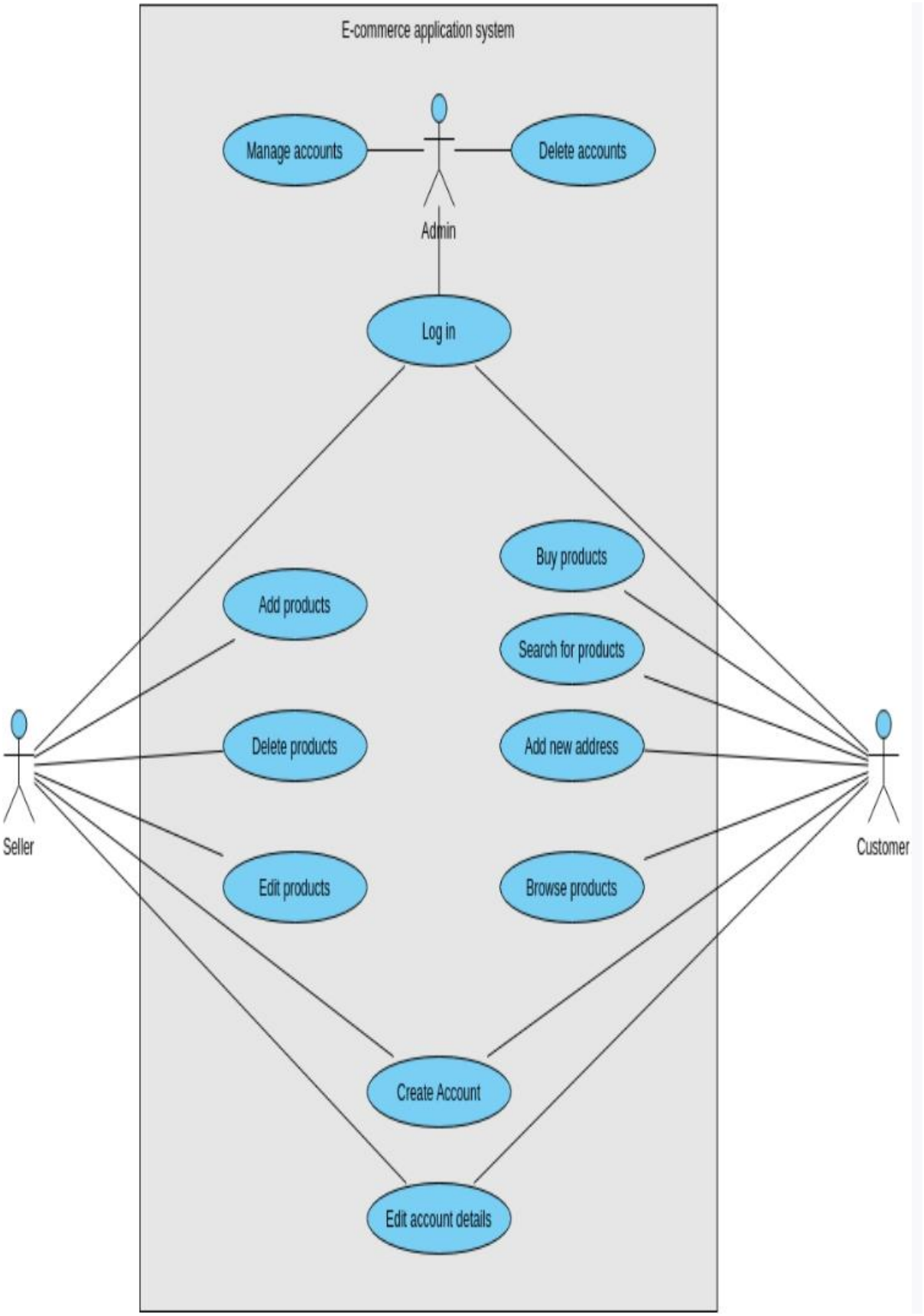
Seller Activity :

- Add products
- Delete products
- Edit products
- Login
- Create account
- Edit account Details

Customer Activity:

- Buy products

- Search for products
- Add new address
- Browse product
- Create account
- Edit account details
- login


E-commerce application system
Manage accounts
Delete accounts
Admin
Log in
Buy products
Add products
Search for products
Delete products
Add new address
Seller
Customer
Edit products
Browse products
Create Account
Edit account details

CLASS DIAGRAM

A class diagram is a type of static structure diagram that describes the structure of a system. The classes in the class diagram represent both the main objects and or interactions in the application.

The CLASS DIAGRAM is represented using rectangular boxes each of which contains three parts.

- The upper part holds the name of the class.
- The middle part contains the attributes of the class.
- The bottom part gives the operations or methods the class undertakes.

DOCUMENTATION OF CLASS DIAGRAM

This class diagram consists of seven classes

Delivery: Is the class name consists of id, name, date, address as attributes. The operation performed is update.

Payment: Is the class name consists of id, card number, amount as attributes. The operations performed are add, update.

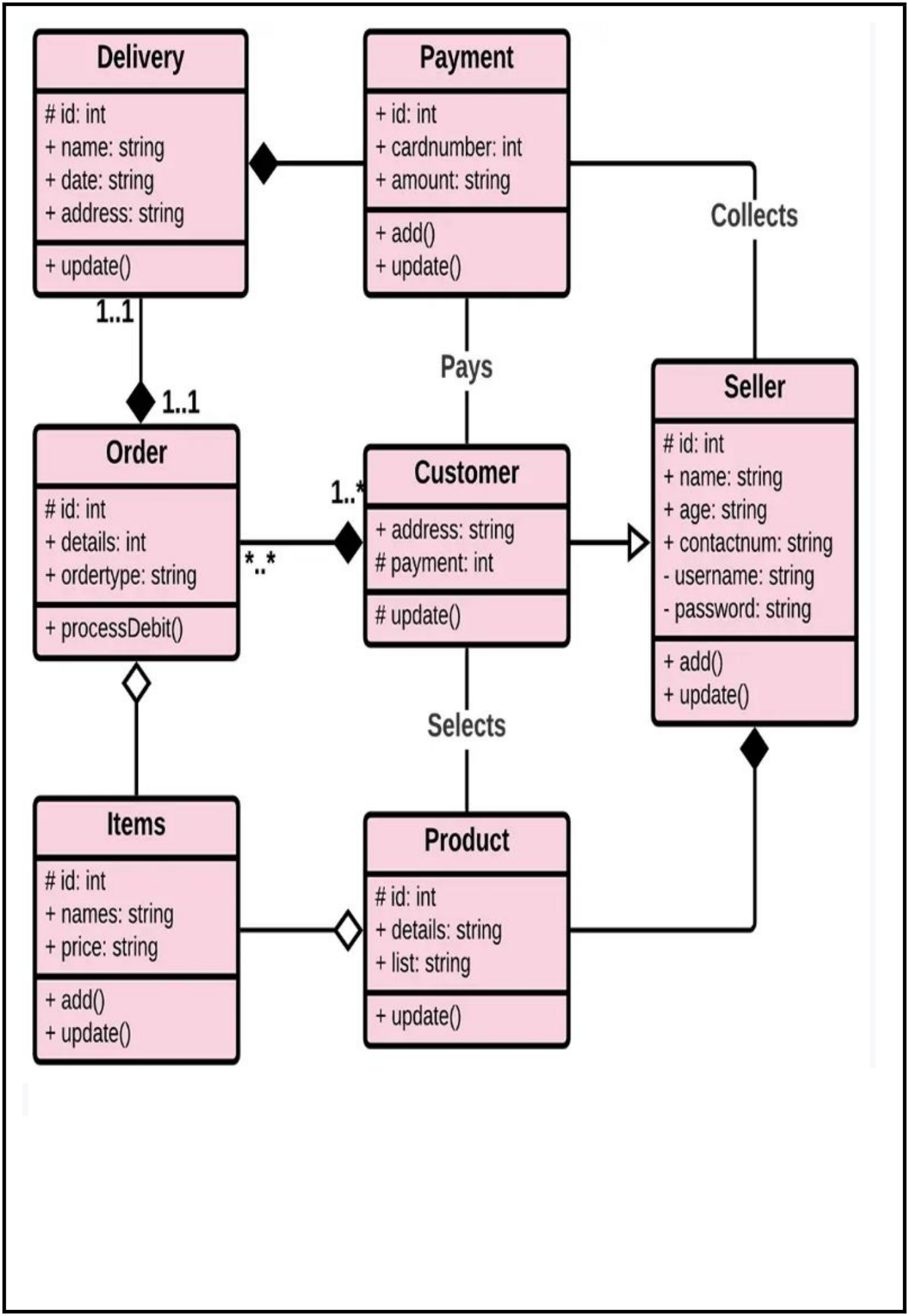
Order: Is the class name consists of id, details , order type as attributes. The operation performed is process Debit.

Customer: Is the class name consists of address, payment as attributes. The operations performed is update.

Seller: Is the class name consists of book id, name, age, contact num , username, password as attribute. The operations performed are add, update.

Items: Is the class name consists of id, name, price as attributes. The operations performed are add, update.

Product: Is the class name consists of id, details, list . The operations performed is update.


Delivery
id: int
+ name: string
+ date: string
+ address: string
+ update()
Payment
+ id: int
+ cardnumber: int
+ amount: string
+ add()
+ update()
Collects
1..1
1..1
Pays
Seller
id: int
+ name: string
+ age: string
+ contactnum: string
- username: string
- password: string
+ add()
+ update()
Order
id: int
+ details: int
+ ordertype: string
+ processDebit()
1..*
..
Customer
+ address: string
# payment: int
# update()
Selects
Items
id: int
+ names: string
+ price: string
+ add()
+ update()
Product
id: int
+ details: string
+ list: string
+ update()

SEQUENCE DIAGRAM

A sequence diagram in unified modelling language is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. Sequence diagrams are sometimes called event diagrams, event scenarios, and timing diagrams. This diagram shows a parallel vertical lines called lifelines.

There are two dimensions in this diagram

1. Vertical dimension-represents time.

2. Horizontal dimension-represent different object.

DOCUMENTATION OF COLLABORATION DIAGRAM

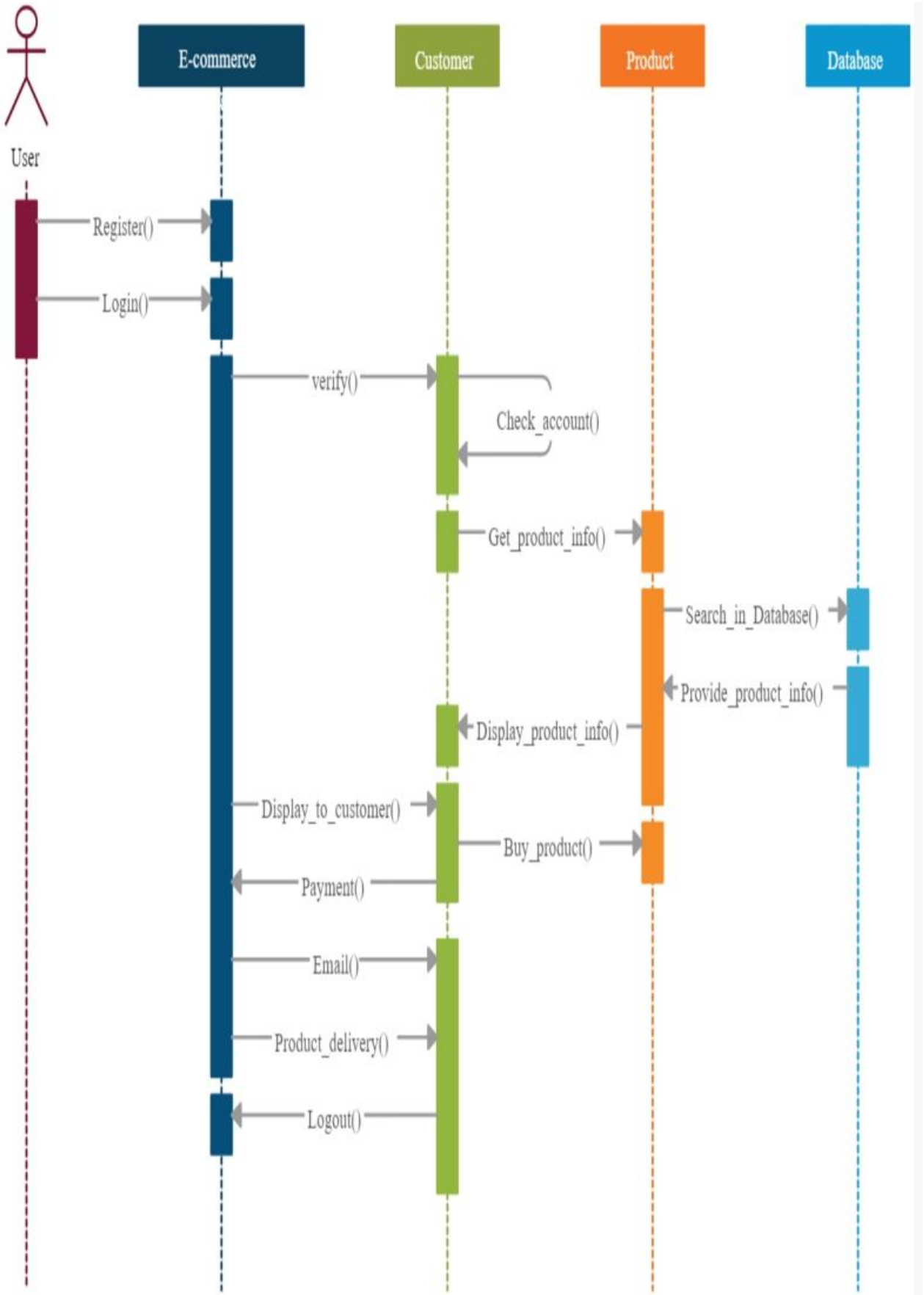
The sequence diagram represents:

- The user logins to the E-commerce website and it verify the customer.
- Customer search the product , check the availability of the

  Product and buy the product

- Database searches the product and gives the product

  And provide the information


User
E-commerce
Customer
Product
Database
Register()
Login()
verify()
Check_account()
Get_product_info()
Search_in_Database()
Provide_product_info()
Display_product_info()
Display_to_customer()
Buy_product()
Payment()
Email()
Product_delivery()
Logout()

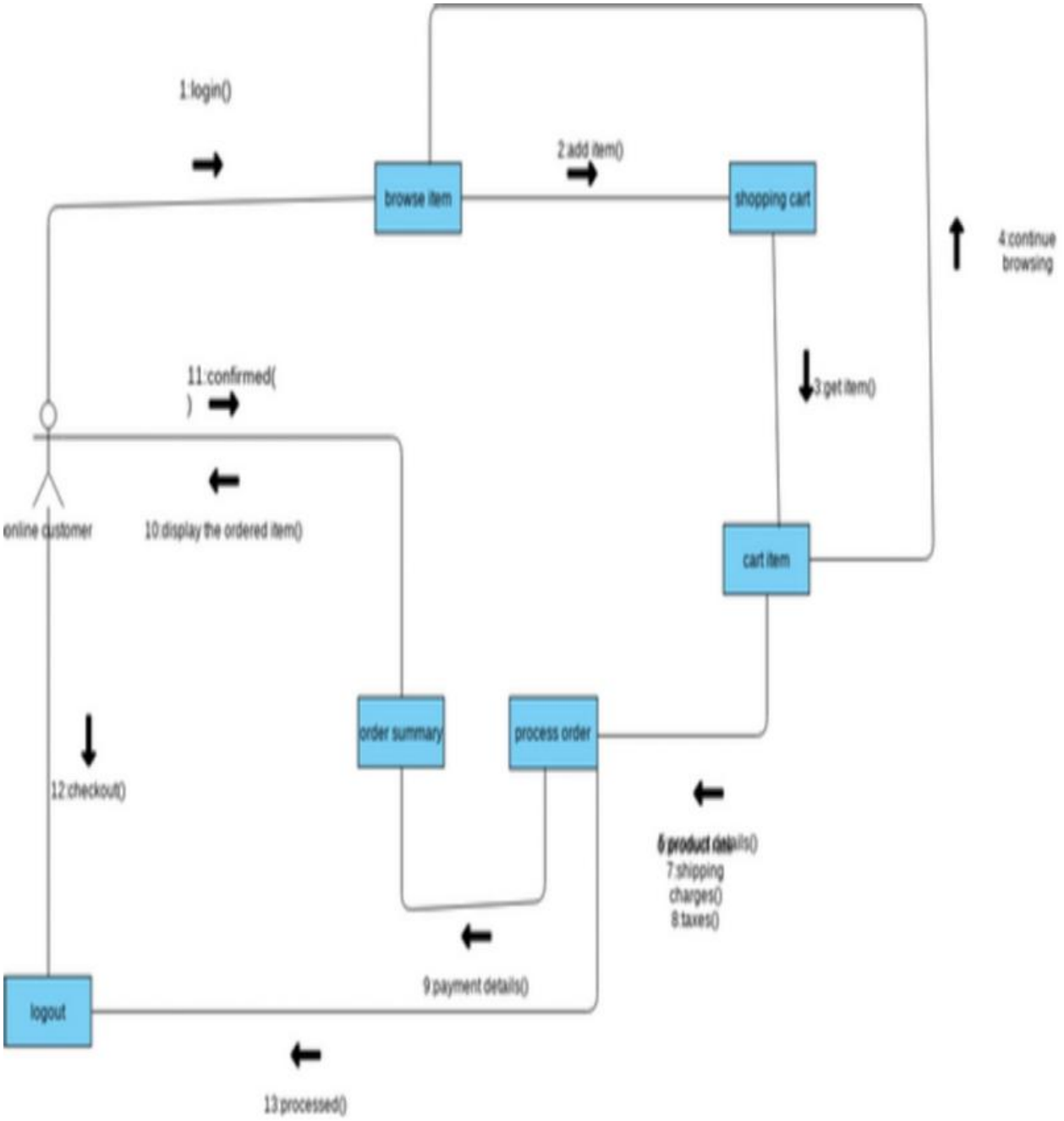
COLLABORATION DIAGRAM:

A collaboration diagram belongs to a group of UML diagrams called Interaction Diagrams, collaboration diagrams, like sequence diagrams, show how the objects interact over the course of time. collaboration diagrams show the sequence by numbering the messages on the diagram.

DOCUMENTATION OF COLLABORATION DIAGRAM

The collaboration diagram shows that searching a item and giving it as per the request by the user from the e commerce website

It represents how user login to t website from which we get information of product.



ACTIVITY DIAGRAM

The activity diagram used to describe flow of activity through a series of actions. Activity diagram is a important diagram to describe the system. The activity described as a action or operation of the system.

ACTIVITY DIAGRAM FOR USER SIDE

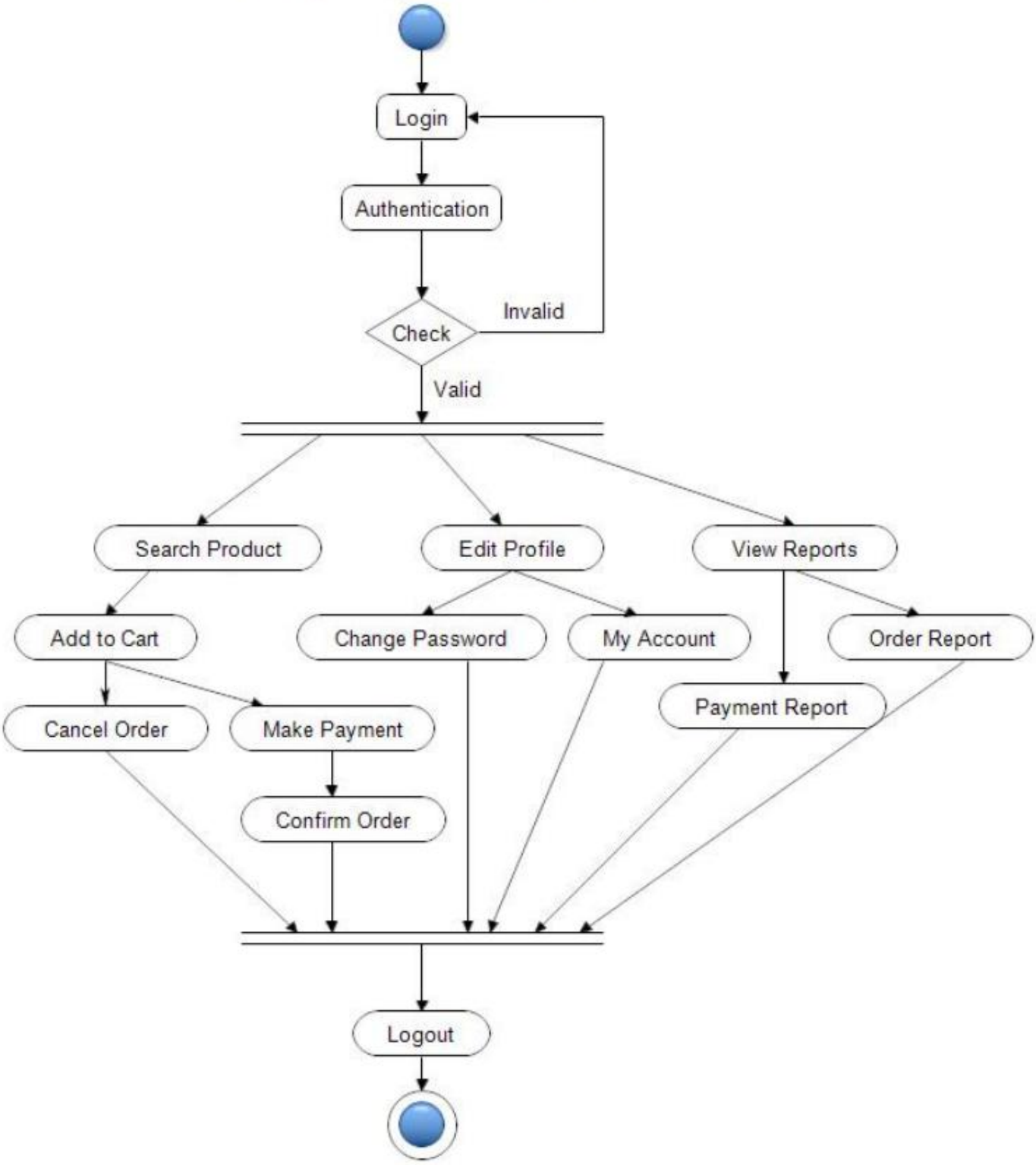
In user side activity diagram describe all the functionality

Or operation of users can do on our website

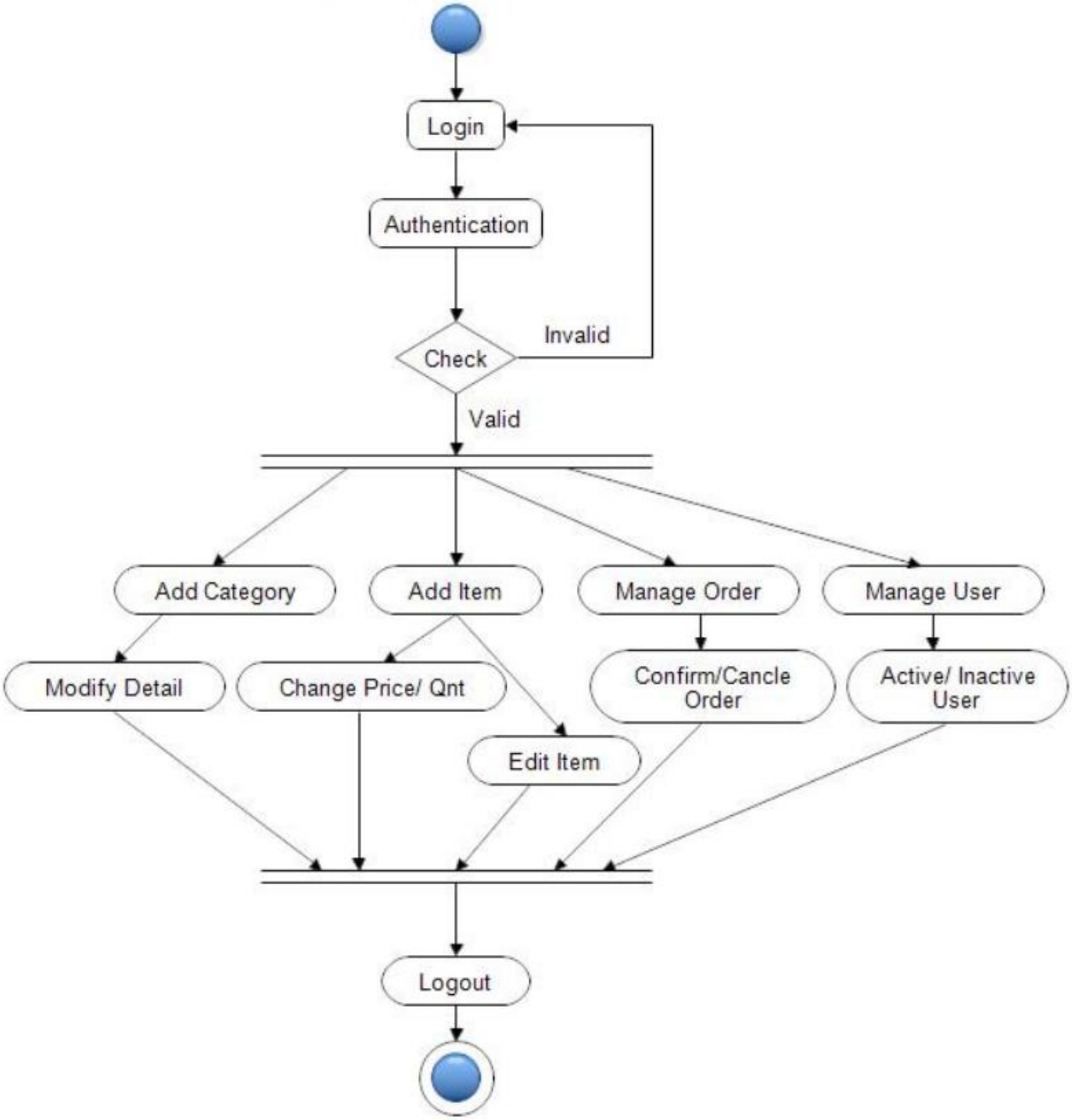
ACTIVITY DIAGRAM FOR ADMIN SIDE

In Admin side activity diagram describe all the functionality or Operation of admin can do on website

Activity Diagram for User Side



Activity Diagram for Admin Side



intComponent Diagram

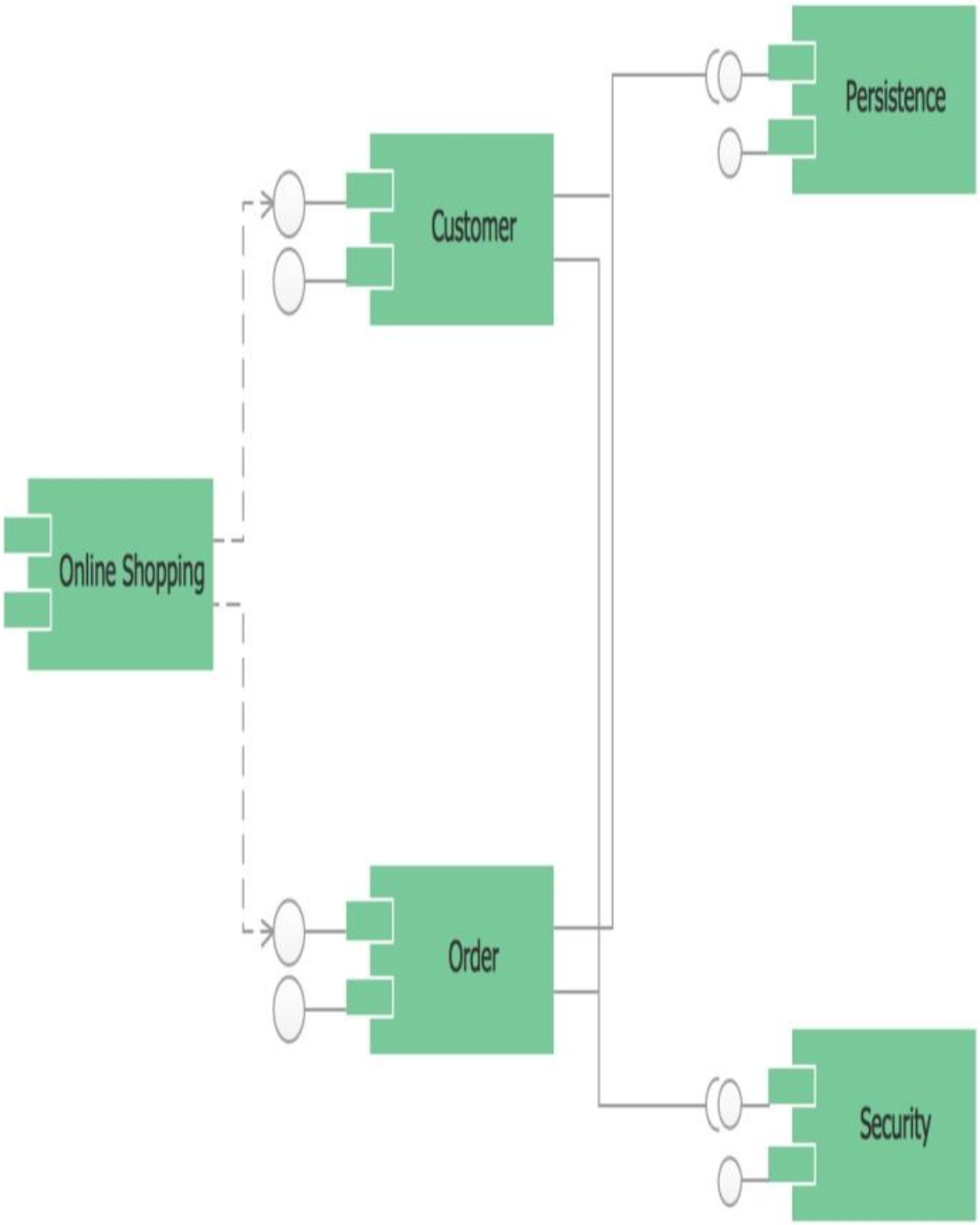
A component diagram depicts how the components are wired together to form larger components and or software systems. Components are wired together by using an assembly connector to connect the required interface of one component with the provided interface of another component.

DOCUMENTATION OF COMPONENT DIAGRAM

The main component in the component diagram is library management system. The user(buyer) who wants login and take items and seller who is selling the products

Components:

This component diagram shows the structure of the e-commerce website, which consists of the software components and their interfaces, accounts database, transaction information, and financial information. Their dependencies explain how they work together. You can use component diagrams to show how software systems work at a high level, or you can use them to show how each component works at a lower level, like in a package.


Persistence
Customer
Online Shopping
Order
Security

PACKAGE DIAGRAM

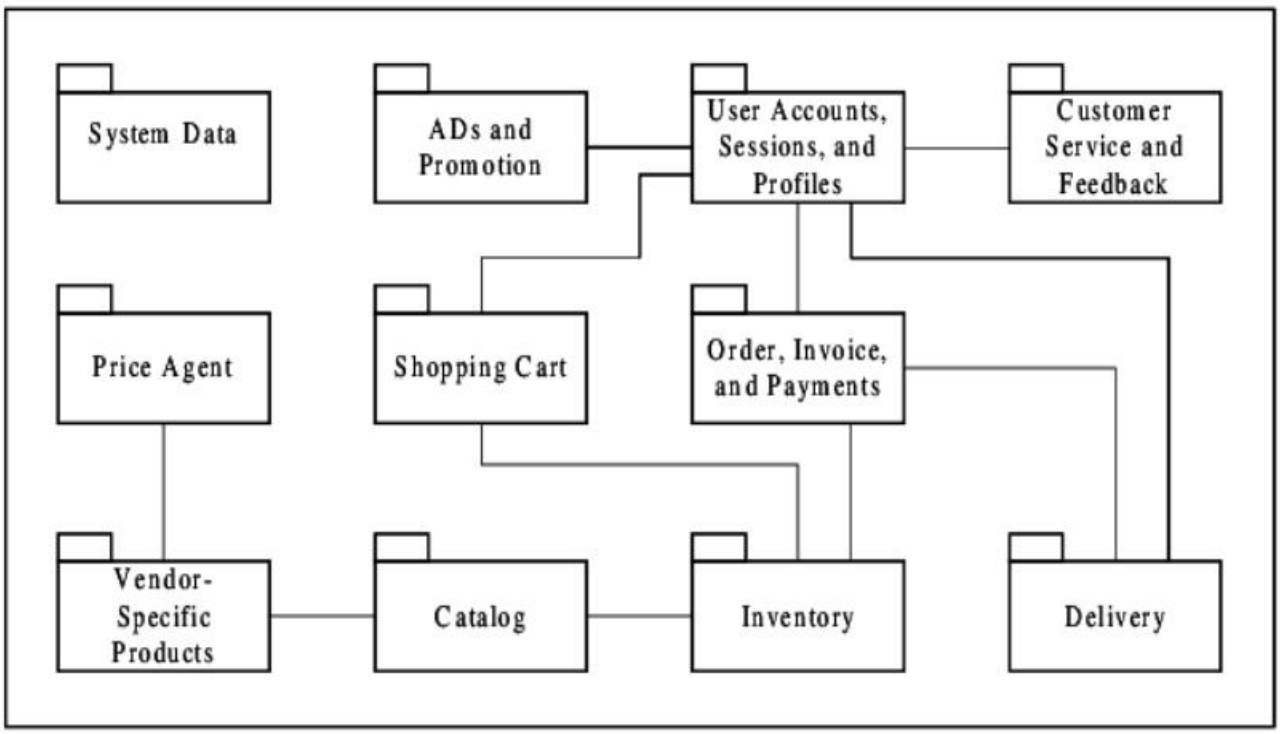
A package diagram in the unified modelling language depicts the dependencies between the packages that make up a model. It provides a way to group the elements. There are three types of layers in package diagram. They are

- Utility
- User interface
- Business processing

DOCUMENTATION OF DEPLOYMENT DIAGRAM

Package Diagram depicts the dependencies between the packages that make up a model. Package Diagram illustrates the functionality of a software system. There are two special types of dependencies defined between packages:

- package import
- package merge



7.SOFTWARE TESTING

UNIT TESTING:

Unit testing involves the design of test cases that validate that the internal program logic. It is the testing of individual software units of the application.

INTEGRATION TESTING:

Integration tests are designed to test integrated software components to determine if they are actually run as one program.

FUNCTIONAL TESTING:

Functional testing provide the systematic demonstration of the functions that perform in this process.

WHITE BOX TESTING:

It is the testing in which the software has the knowledge of the inner workings, structure and language of the software.

BLACK BOX TESTING:

Black box testing is the testing software without any knowledge of the inner workings, structure or language of the module being tested.

Conclusion:

Technology has made significant progress over the years to provide consumers a better online shopping experience and will continue to do so for years to come. With the rapid growth of products and brands, people have speculated that online shopping will overtake in-store shopping. While this has been the case in some areas, there is still demand for brick and mortar stores in market areas where the consumer feels more comfortable seeing and touching the product being bought. However, the availability of online shopping has produced a more educated consumer that can shop around with relative ease without having to spend a large amount of time. In exchange, online shopping has opened up doors to many small retailers that would never be in business if they had to incur the high cost of owning a brick and mortar store. At the end, it has been a win-win situation for both consumer and sellers.