Project Log Book

Group Members:

Entry Date	Work Done
January 15th, 2021	Discussed the basic plan to build the prototype for ECW on Whatsapp group, noting down all constraints to be taken care of. Furthermore, we decided our next group meeting would be on January 25th, 2021 (Monday) at 8:30 on ZOOM
January 20th, 2021	Meeting at ZOOM: We discussed about the project objective. Every group member shares her opinion towards ECW. Firstly we decide to download a template for Software Management Plan; we stepped through each section and discussed what was required and what resources were available to us. We also discussed how we are going to make the prototype of ECW and how it can be scalable and flexible for other countries. We also discuss that how we can make our software a buyable product.
January 25th, 2021	We Finished a rough story board telling the flow of ECW and in this meeting all the team members created their accounts on Github and share their personal Github link with each individual team member for coordination and completion of upcoming tasks using Github as a medium for interaction.
January 30th, 2021	On this day modules which we have stated earlier in our proposal is assigned each member of the group, Group members were asked to search on the module they have assigned in the proposal and then start making diagrams of their module separately that's how each member was responsible to know the scope of her module as well as completion of diagrams. The deadline for making diagram for each module is set to February 1st, 2021(Monday Night)
February 1st, 2021	The mistakes were corrected at the morning of February 2nd, 2021 by Jaweria Asif and Javeria Hassan which the team member has been done while analyzing requirements, scope and drawing diagrams and then a ZOOM meeting is created after rectifying the mistakes to acknowledge every team member. We communicate about the mistakes and try to overcome the confusions of each and every individual member
February 2nd , 2021	The document was reviewed again by All group members and further modification has been done to enhance the SRS for better understanding.
February 3rd , 2021	The remaining working in the SRS like writing functional requirements, products features, hardware software interface detail and all work except the modules done by Javeria Hassan and Jaweria Asif.
February 4th , 2021	After several reviews, the document was submitted by Kainat Fatima.

Last Updated on February 4th, 2021

Software Requirements Specification

For

E-Commerce Website

Jaweria Asif - 9442
Javeria Hassan - 9517
Kianat Fatima - 9413
Sania Kaleem - 9401
Midha Tariq - 9293

January 29, 2021

Version	Changes Made	Date
1.0	First Pass for Review	
1.2	Second Pass for Review	
1.3	Third Pass for Review	
1.4	CRM Review Version	

Table of Contents

1. Introduction
2. The General Description
3. Specific Requirements
4. Supporting Information

1. Introduction

1.1 Purpose

The E-Commerce Website is a web application which is supposed to provide complete solutions for customers as well as administrators through a single platform using the internet as a sole medium. It'll empower clients to buy online items without going by the shop physically. They can select item, they can effortlessly include them in their cart and wish list. The administration module will enable a system administrator to approve and reject requests for new orders by the customer of E-Commerce Website and maintain various lists of items in categories. This document is meant to discuss the features of E-Commerce Website, so as to serve as a guide to the developers on one hand and a software validation document for the prospective client on the other.

1.2 Scope In

Initial functional requirements will be:

- Secure registration and profile management facilities for users and customers.
- Any customer after login can easily watch our upcoming and recently added products and buy them through ECW
- Browsing through ECW a customer will be able to see the items that are there in each category of products (i.e: Category of Men's, Women's, Electronics and sports , This will further lead us towards stock maintaining
- A user can also change the quantity of a product (as His/her desired).
- Shop owners maintain the records of the items which are popular in each category
- Shop owners can see the records for maintenance of the website. (i.e: which product is out of stock)
- Maintaining and monitoring the database of regular customers for different needs of products which are selling more rapidly.
- Security for confidential data (user's details) is our first priority, Additionally, Sessional security is maintained.
- Services provided by ECW will be available 24/7 to facilitate our web and customers.
- For handling server traffic at peak time, we assure better component design to get better performance.
- We have advertisement space to effectively catch the customer's attention and as a source of revenue.
- ECW also allow customers filter searching.
- ECW will only support cash on delivery.
- Dynamic price model will be added if seemed necessary by which prices can be changed based on demand and supply
- This list is by no means, a final one. The final list will be dictated by implementation constraints, market forces and most importantly, by end user demands.

1.3 Scope Out

The following features will not be the part of this Project:

1. Machine learning will not be implemented as a Searching technique.
2. Debit or Credit system of payment will not be implemented
3. Frequent demand product will be crawl from other online stores and give admin suggestion to add those products in its own website will not be implemented
4. Security is not a concern of this project. As such, it is beyond the scope of this system to encrypt personal user data.
5. Forgot password or preventing unauthorized login attempts, or any other concern of this nature.
6. Verifying the email address provided by a user
7. Storing additional information about a product beyond the listed fields
8. Allowing users to edit their account details (username, password, mailing address, etc.)
9. Additionally, the system may need to later be extended to provide additional functions. One such example is added Adequate searching mechanisms for easy and quick access to particular products and services. Machine learning will be implemented to enhance the functionality of ECW (Searching technique of AI will be implement as soon as possible). Another additional feature might be the implementation of debit and credit payment methods.

1.3 Definitions, Acronyms, and Abbreviations.

The intended readers of this document are the developers of the site, testers, website owners, managers and coordinators.

PP - Project Plan
SDD - Software Design Description
SRS - Software Requirement Specification
SDS – Software Design Specification
SPMP - Software Project Management Plan
GUI – Graphical User Interface
QAM – Quality Assurance Manager
PDM – Project Development Manager
PMP – Project Management Professional
TBD – To be determined
UML – Unified Modeling Language
ECW– E-Commerce Website
C# – C#.Net MVC 5
SQL – SQL Server 2012
HTTP – Hypertext Transfer Protocol

1.4 References

SRS template is by IEE format.
Use case narration template referenced by OOAD by Benet (3rd Edition).
Project hosting domain
http://squareshop.somee.com/.

1.5 Overview

Chapter 2 of the SRS is a brief description of the characteristics of the software to be built, its functions, its users, its constraints and its dependencies.

Chapter 3 is about specific requirements, such as functional requirements, external interface requirements, performance requirements, and also design constraints and quality characteristics.

Finally, chapter 4 includes all the supporting information, such as the Table of Contents, the Appendices, and the Index.

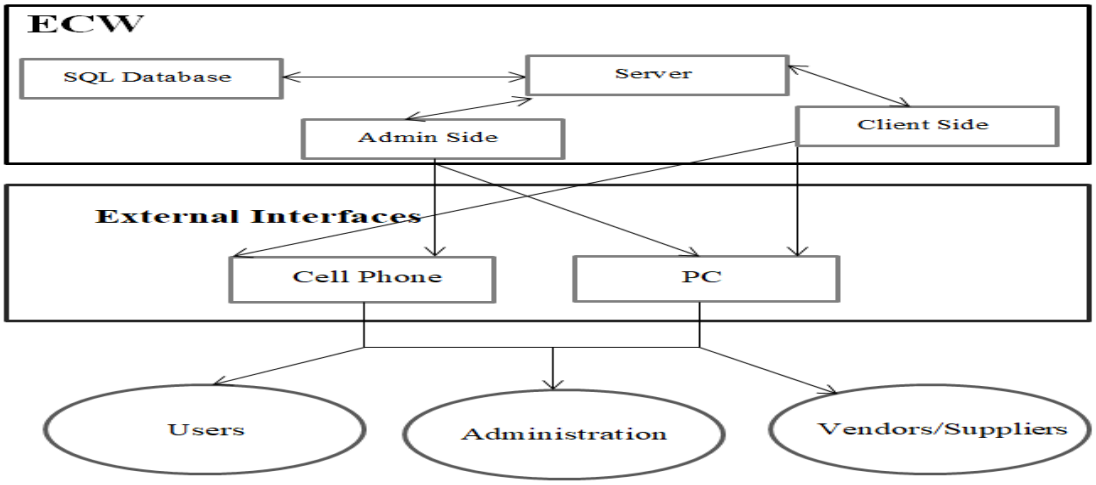
2. The General Description

This section includes details about what is and is not expected of the ECW system in addition to which cases are intentionally unsupported and assumptions that will be used in the creation of the ECW system.

2.1 Product Perspective

ECW is an online shopping website which supports a number of functions for both the consumer and store's management. The website must be available to anyone having the Computer. ECW is working correctly in both Google Chrome and Mozilla Firefox. There are no hardware or software requirements beyond these including, but not limited to, memory or specific software packages that need to be utilized nor software packages that need not be utilized.

Figure 2.1 Overview/Architecture Diagram of the ECW



Functions of System Components:

Database:

- Stores data
- Creates reports
- Provides access to data
- Updates information

Server:

- Provides access to the database
- Authenticates users
- Processes orders
- Performs backups
- Produces reports

Admin Side:

- Have direct access to admin panel using internet (Mobile/PC)
- Login
- View/Search/Edit/Add new users
- View/Search/Edit/Add new Employee
- View/Search/Edit/Add new Products
- Change Theme of Website
- View/Search/Edit/Add New Suppliers
- Manage Orders
- Update Profile

Client Sidé:

- Have direct Access to Client Side using internet (Mobile/PC)
- Sign Up
- Login
- Update Profile
- View Products
- Search Products
- Add to Wish List
- Add to Cart
- Edit Products Quantity in Cart
- Check Out
- Add Shipment Detail
- Select Payment Method
- Confirm Order

External Interfaces:

Personal Computers

- Users (General Users, Vendors/Suppliers/ administration) may use personal computers to obtain a direct access to admin /client side via the Internet.

Cell Phones

- Serve as a medium of accessing the client side and admin side via internet.
- Users may use cell phones and the latest telecommunication technologies to indirectly access the server and the database using client or admin side via Internet.

Computer Hardware and Peripheral Equipment to be used:

- 5 workstations, which include CPUs, monitors, keyboards, and mice
- Printers
- Network
- Cell phones to test connection to the server via remote access

2.2 Product Functions

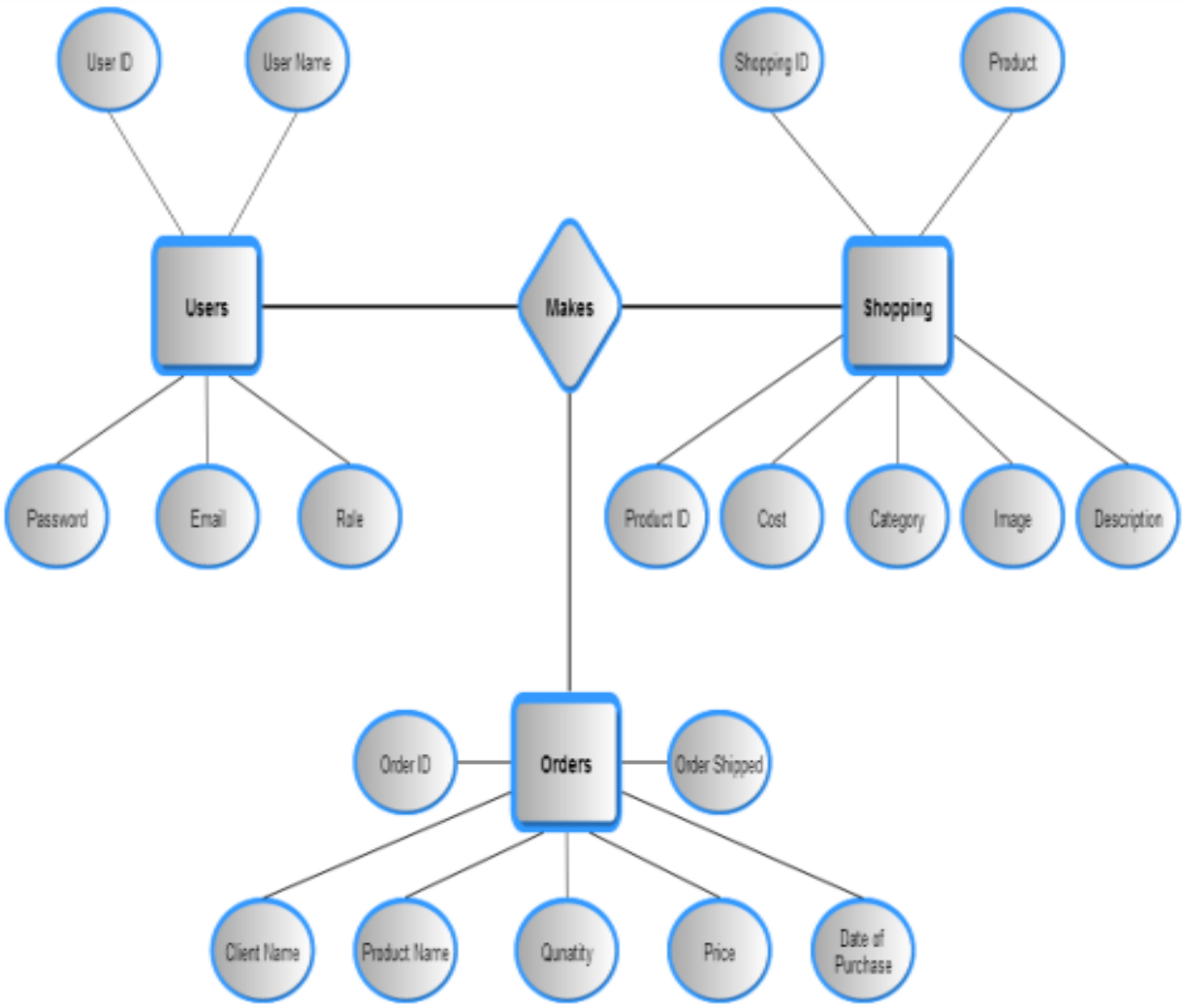
This section provides a summary of the functions that the software will perform.
ECW will provide a number of functions, each is listed below.

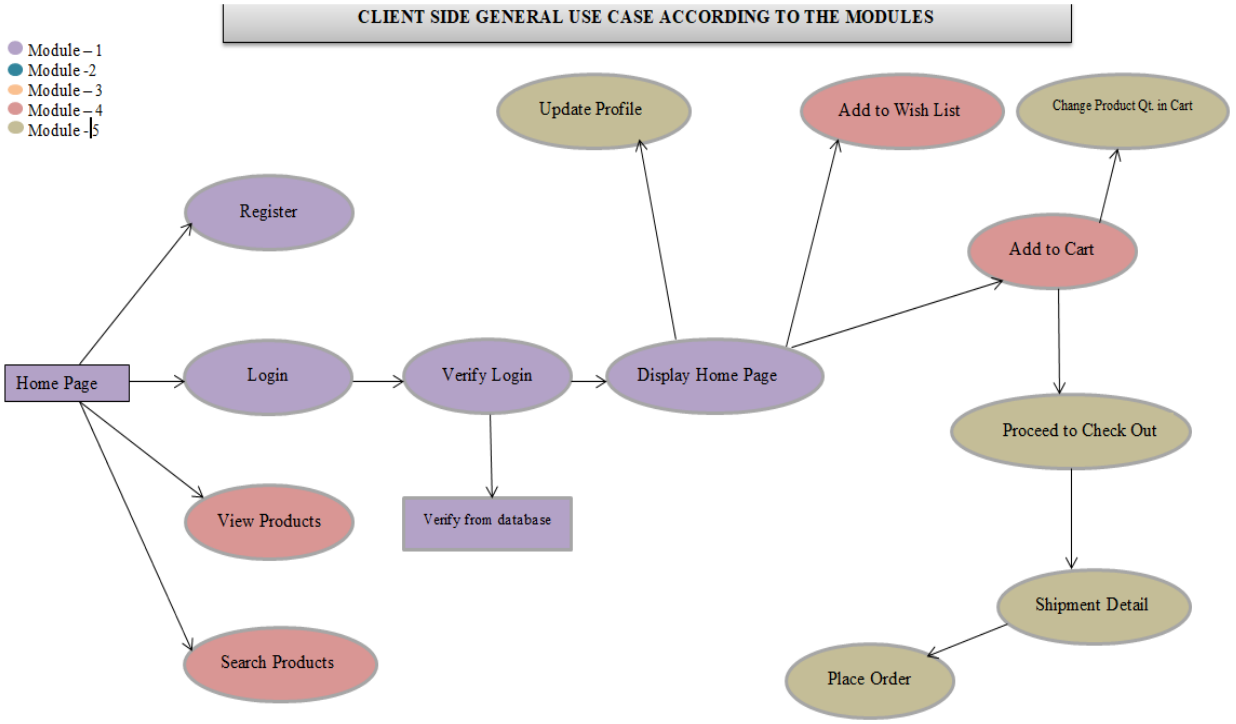
• Admin and user must be logged in to the database with a unique id assigned at the time of signup
• Admin and users are able to update his/ her profiles
• Maintain data associated with the inventory (a collection of products)
• A product has a title and price
• The inventory also keep track of the stock/quantity of each product
• Maintain records for every customer
• A customer must be a valid user.
• A customer has a username (unique across all users), password (no restrictions), email address (no restrictions), and postal address (unverified.)
• Anyone may sign up for a customer account.
• Allow any user to become a Customer.
• Show images of available products
• Allow customers and Admin to log in and out of the system.
• Anyone is able to add one or more product to the shopping cart.
• The shopping cart does not need to allow multiple copies of same product.
• Checkout is only available to logged-in customers. A user that is not logged in as a customer is given a chance to log in.
• The discount that is to be applied to an entire order will be in fixed amount.
• The discount is specified by the Admin at the time of the promotion's creation or most recent update/edit.
• Log/record the transaction
• Allow Admin to specify a stop-order for a product
• When the quantity a product falls below a threshold, the manager is notified that the needs to be reordered.
• Allow Admin to update stock quantities
• Allow Admin to change any product's price
• Allow Admin to view transaction logs
• A promotion is a percentage discount that can be applied to an entire order
• Promotions may only be used by valid customers

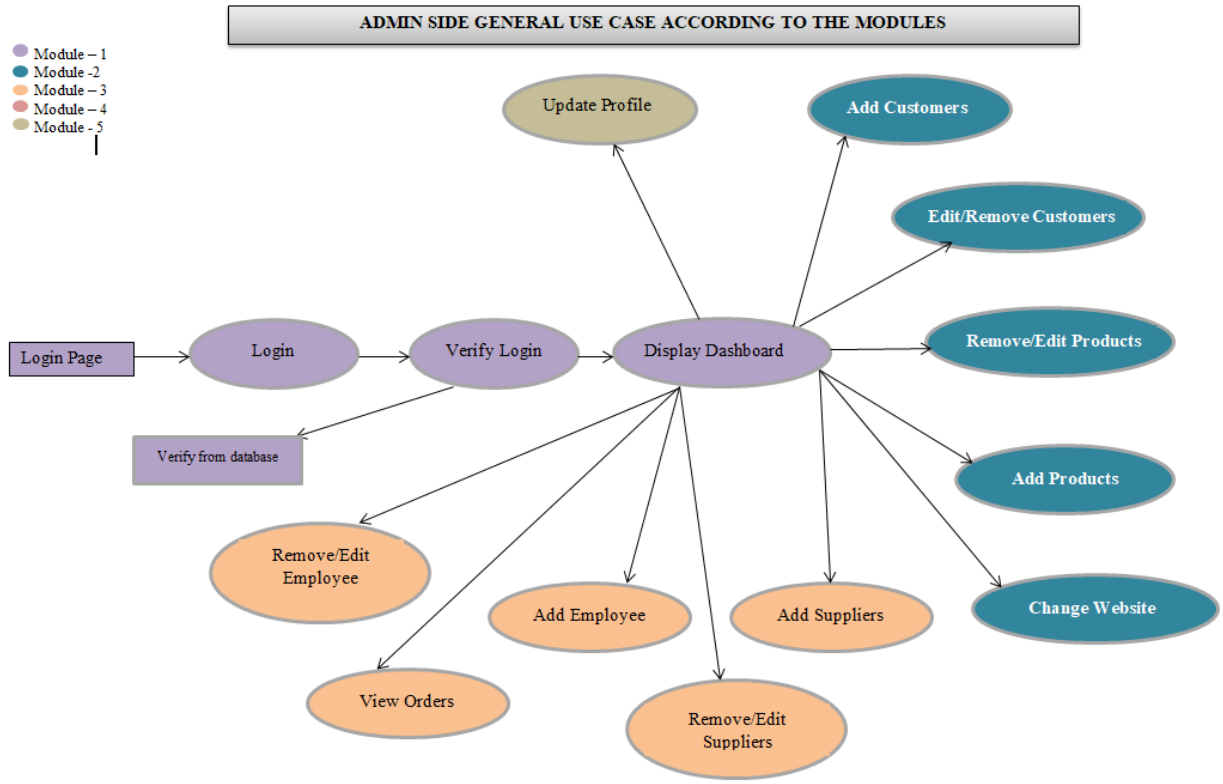
2.2.1 Function Relationships

Figure 2.2 to 2.6 depict the relationships among the functions to be implemented by the system.

Figure 2.2 ECW General Function Relationship/**Higher Level Use case** Diagram




CLIENT SIDE GENERAL USE CASE ACCORDING TO THE MODULES
Module – 1
Module -2
Module – 3
Module – 4
Module - 5
Update Profile
Add to Wish List
Change Product Qt. in Cart
Register
Add to Cart
Home Page
Login
Verify Login
Display Home Page
Proceed to Check Out
View Products
Verify from database
Shipment Detail
Search Products
Place Order


ADMIN SIDE GENERAL USE CASE ACCORDING TO THE MODULES
Module – 1
Module -2
Module – 3
Module – 4
Module - 5
Update Profile
Add Customers
Edit/Remove Customers
Login Page
Login
Verify Login
Display Dashboard
Remove/Edit Products
Verify from database
Add Products
Remove/Edit Employee
Add Employee
Add Suppliers
Change Website
View Orders
Remove/Edit Suppliers

2.2.2 Function Descriptions (Functional Requirement Listings)

2.2.2.1 Log in Function

Description: This function ensures that only authorized users gain access to the databases. An authorized user is a user who has an account on the system. Users include general user and admins. The user must type a valid username and password to gain access.

2.2.2 Module 1: Jaweria Asif (9442): Module 1 [***Login*** + ***Sign-up Module Implementation*** + ***Customer Side & Admin Side Interface Design***]

Description: This function allows the user to interact with E-commerce website through GUI. In this module we will build an interactive user interface for customers to catch them toward our website. In our website, we will assure in this module that user experience easy and fully understandable. In this module, we will implement all interfaces of web application including both panels like Client Panel and Admin Panel. Following interfaces we will build in this module:

- Login
- Sign Up
- User Side Slider
- Home Page
- View/Edit/Add to Cart Page
- View/Edit/Add to Wish List Page
- View Products page
- Check Out Page
- Search Bar
- User Profile Page
- Admin Panel Home Page
- Admin Profile
- View/Edit/Add Products page
- View/Edit/ Add Users Page
- View/Edit/Add Employee Page
- Change Theme Page
- View/ Orders Page

Besides this, in this module, we will implement functionality of register a user and login. Only registered users can access the panels.

2.2.3 Module 2: Javeria Hassan (9517): Module 2 [***Admin Side (Change Website theme + Add/Edit/Delete Products + Add/Edit/Delete Customers)***]

Description: In this module, we will implement the functionality on admin panel that after successful login, admin can change the theme of website (Dark or Light Mode). Secondly, in this module admin can add new products in website database that will display on client side. Admin can also update those added products either delete them or update data. Thirdly, Admin can view all registered users, can add new users using his own panel. Also, admin can delete users if he/she notices any irrelevant activity of that user.

2.2.4 Module 3: Sania Kaleem (9401): Module 3 [***Admin Side (Add/Edit/Delete Suppliers + View Status of Orders + Add/Edit/Delete Employee***]

Description: In this module, we will implement the functionality on admin side that after successful login, admin can add new suppliers in database. Admin can also delete existing suppliers or update their data. Secondly, Admin can view new and existing orders. Thirdly, admin can add new employee in database and provide new user name and password to that employee to login in an admin panel. Similarly, admin can delete data of any employee.

2.2.5 Module 4: Kainat Fatima (9413): Module 4 [***Customer Side (Add/ Delete Product to Wish list + Add/Delete Product in Cart + Search Product)***]

Description: In this module, we will implement functionality on client side that users can add/ delete their desired products into their wish list for accessing them later. Secondly, add products into cart from the wish list interface or direct from the view product interface. Thirdly, remove products from cart. Lastly, users can search a product by applying different filters such as price and category

2.2.6 Module 5: Midha Tariq (9293): Module 5 [***Customer Side (Change Product Quantity in Add to Cart View + Check Out + Add Shipment Detail +Update Profile)***]

Description: In this module, we will implement functionality on client side that user can change quantity of products in cart menu. Price will change according to the quantity. Secondly, User can proceed to check out after adding products into his cart. Thirdly, adding shipment detail of user. Lastly, user's (general user, admin) can update their profile except username and password.

2.3 User Characteristics

The typical ECW user is simply anyone that has access to the Internet and a web browser who will buy the products. It is assumed that the user is familiar enough with a computer to operate the browser, keyboard and mouse and is capable of browsing to, from and within simple websites. Through ECW a customer can purchase products based on their demands on cash on delivery and the admin will be responsible to tackle the orders, Admin has the authority to watch the log of accept, reject or pending the orders. The graphical interface gives a straightforward way of utilizing the ECW with least of training.

2.4 General Constraints

The constraints for the project are:

- Security is not a concern for this system. The database may store passwords in plain text and there doesn't need to be a password recovery feature nor lockout after numerous invalid login attempts. As such, the system may not work correctly in cases when security is a concern.
- Real-life credit card validation and Banking system is not implemented.
- Limited to HTTP/HTTPS.
- There is maintainability of back up so availability of ECW might get affected.

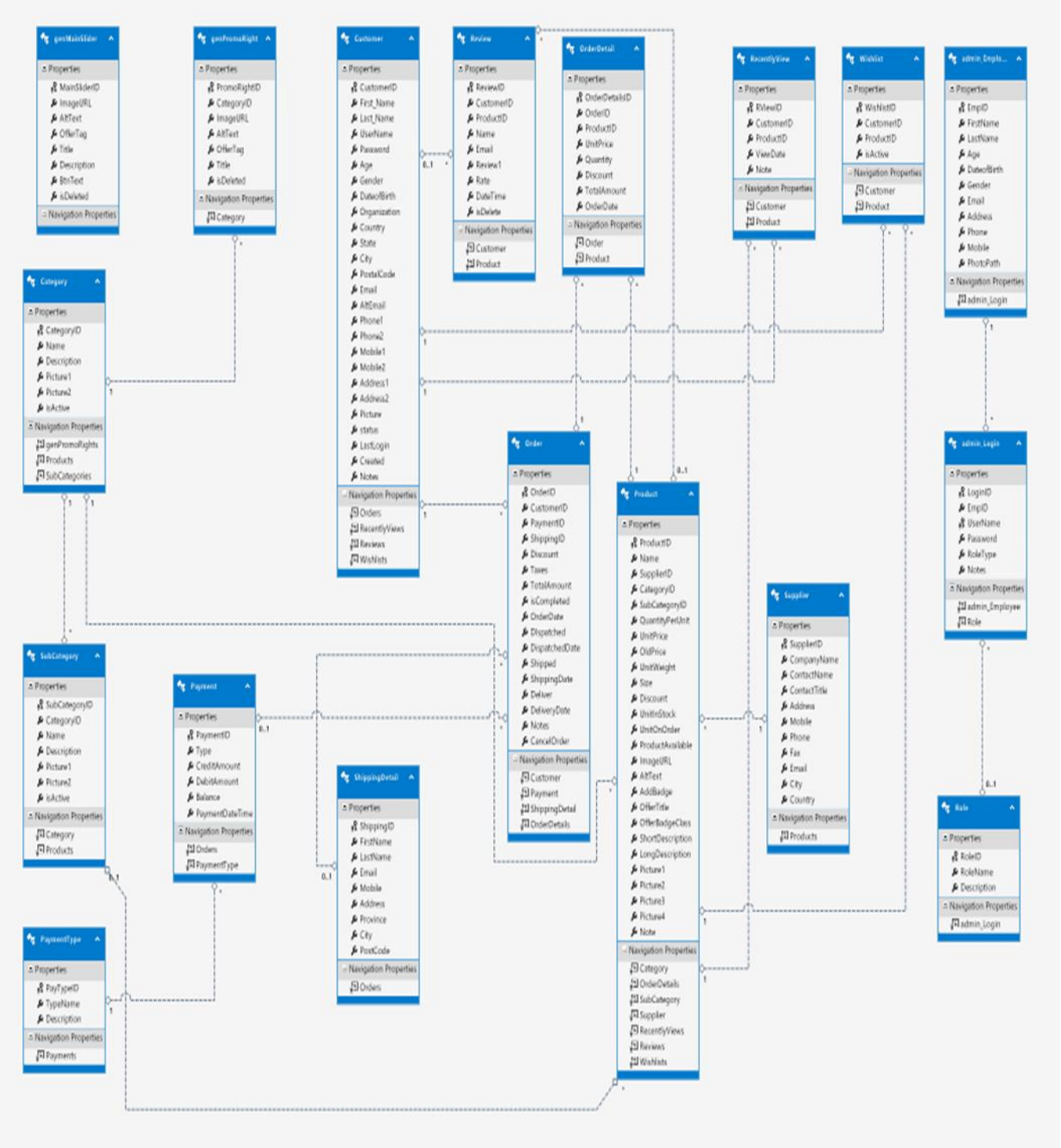
2.5 Assumptions and Dependencies or Business Logic

The assumptions for the project are:

- Client: We have assumed that all of the computer systems of our users are in proper working condition and that the user is capable of operating these system's basic functions including but not limited to being able to power on the system, login and open either Internet Explorer, Google Chrome or Mozilla Firefox, and navigate the browser to the address of this ECW.
- Provider: We have assumed that the ECW will be running on a properly working web server and database system with an Internet connection that allows this system to perform all communications with clients.
- Assumptions: The Admin cannot be a customer.

<ADD OOAD REPORT DIAGRAMS HERE>

GENERAL ERD DIAGRAM OF ECW



3. Specific Requirements

This section of the SRS contains design requirements for the E-Commerce Website.

3.1 Functional Requirements

3.1 Functional Requirements

3.1.1 Module 1: Login + Sign Up Module Implementation + Customer Side & Admin Side Interface Design

a) ***Description:*** This function ensures that only authorized users gain access to the ECW databases. An authorized user is a user who has an account on the system. Users include general users and admins. The user must type a valid username and password to gain access.

b) ***Usage Scenario/ Use case Description/ Specification:***

USE CASE NARRATION
E_COMMERCE SHOP

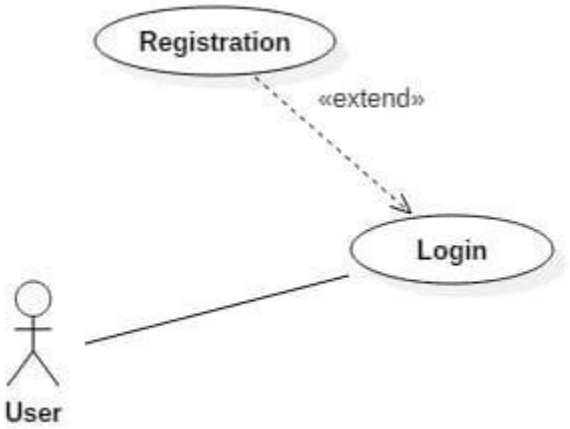
Author: __Jaweria Asif_____ Date: ___03-02-2021__

Version: ____01_____

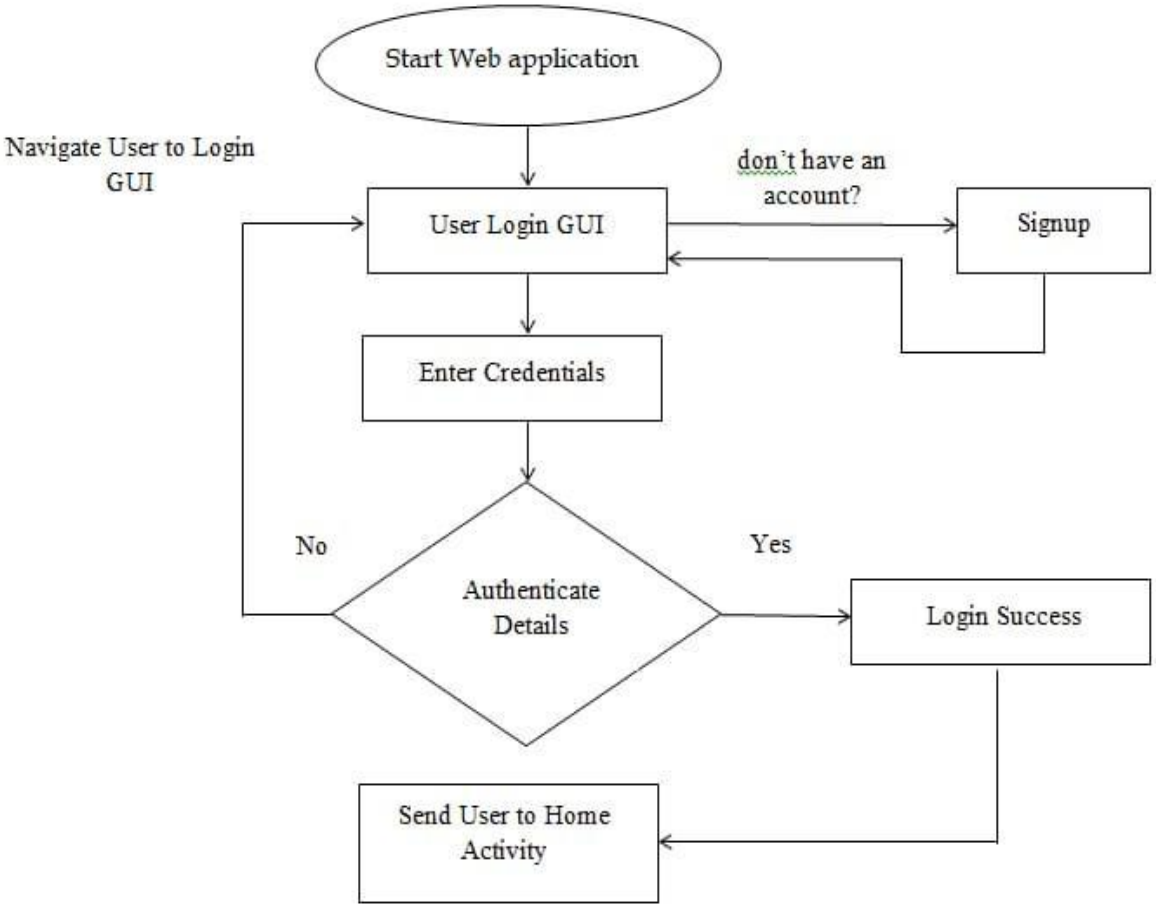
Use Case Name:	**Add/Update/Remove**	**Use Case Type:**
Use Case ID:	01	○ ***Business Requirement*** ○ ***System Analysis***
Priority:	High	
Source:		
Primary Business Actor:	○ Admin ○ Customer	
Primary System Actor:	○ Database	
Other Participated Actors:	○ Accounts (External server) ○ Database	
Other Interested Stockholders:	○ None.	
Description:	This use case describes the event of an admin when he tries to log in his dashboard. Before reaching The dashboard the admin has to first pass the authentication process, Likewise if a new admin is going to login so firstly he has to sign up by entering several fields of data like F Name, L Name, Mobile, City, Address, Email and Password. When all the fields are correctly entered by the admin then this data is saved into database and admin login with his Email and password, If password is incorrect then system show a notification on GUI otherwise navigate Admin to the Dashboard. Same process is followed for customers the Customer has to first pass the authentication process, Likewise if a new customer is going to login so firstly he has to sign up by entering several fields of data like F Name, L Name, Mobile, City, Address, Email and Password.	

	When all the fields are correctly entered by the customer then this data is saved into database and customer is navigated to the login GUI and then login with his Email and password, If password is incorrect then system show a notification on GUI otherwise navigate Customer to the Home page.	
Precondition:	Admin or customer must have an account for using ECW	
Trigger:	This use case is initiated when a customer or admin wants to login in the system.	
Typical Course of Events:	**Actor Action**	**System Response**
	Step 1: The admin or customer open up a web browser and request for shop.pk through entering the URL	**Step 2:** System display the GUI of login page
	Step 3: The admin or customer tries to login	**Step 4:** System checks whether he provided all email and password exists in the database, If no system shows the dialog of singing up first.
	Step 5: Admin and customer navigate to Signup form and entered the fields required for signing up.	**Step 6:** If Admin and customer leave any field blank and click on submit then system request customer and admin to enter all the fields.
	Step 7: After a customer or admin has done entering the data in all the fields and click on submit.	**Step 8:** The System save the signup information into database and navigate customer or admin to login GUI
	Step 9: The admin or customer login by entering email and password	**Step 10:** If password or username is incorrect then system shows a dialog of incorrect username and password
	Step 11: The admin or customer must correctly enter both fields and then click on login.	**Step 12:** System checks whether he provided email and password is correct or not, If password is correct then system navigates admin to its dashboard and system navigates customer to Home page

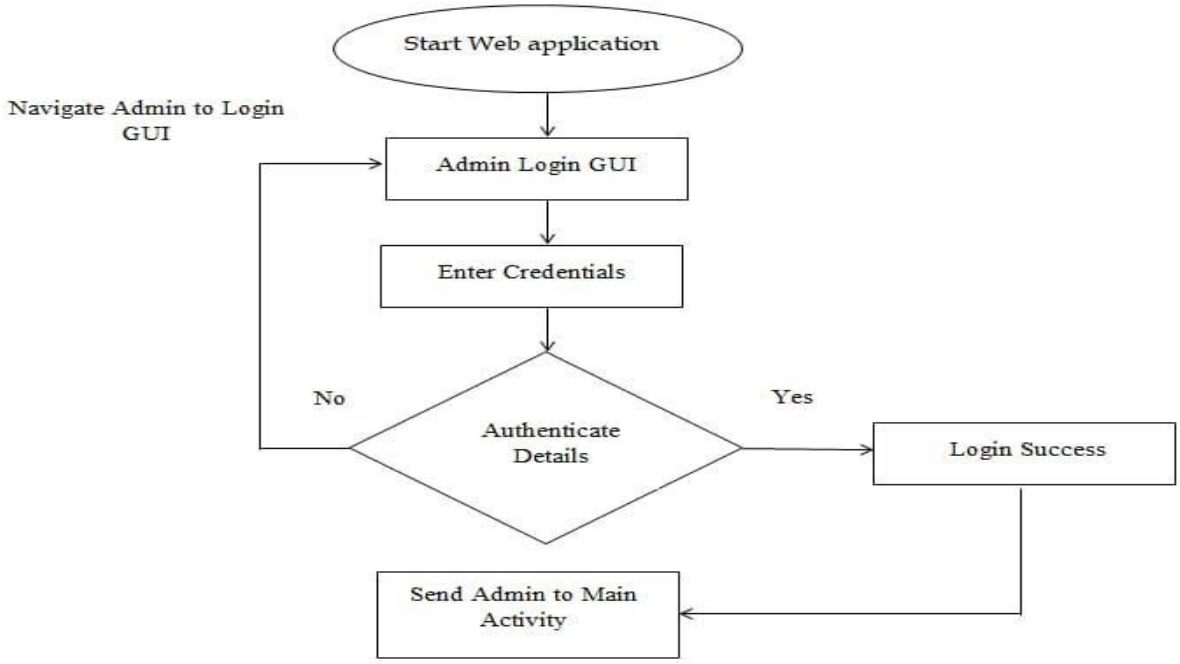
c) ***Detailed Use case Diagram***



d) ***Flow of Event or Data Flow Diagram USER SIDE***

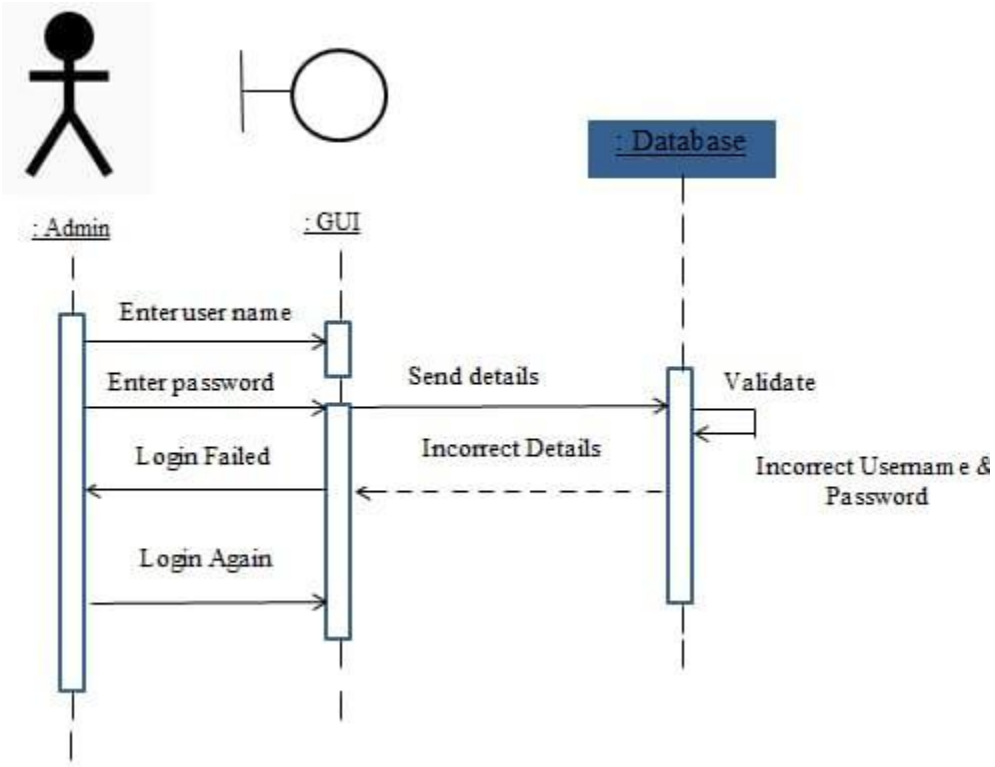


a) ***Flow of Event or Data Flow Diagram ADMIN SIDE***

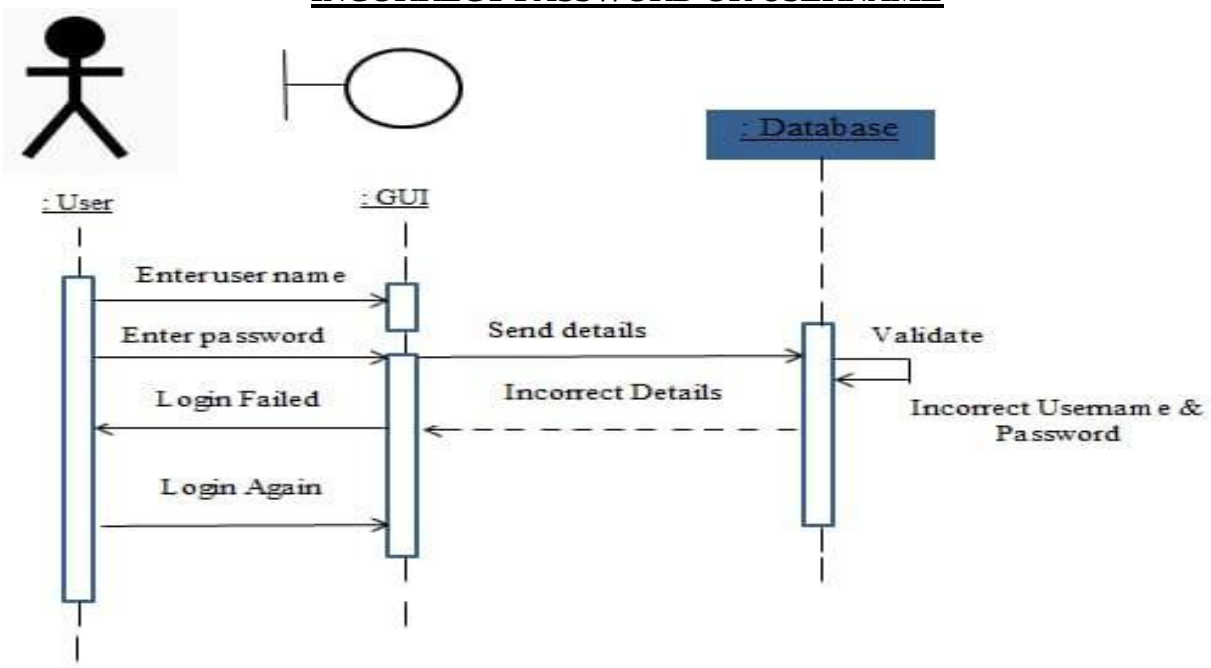


b) ***Sequence Diagram***

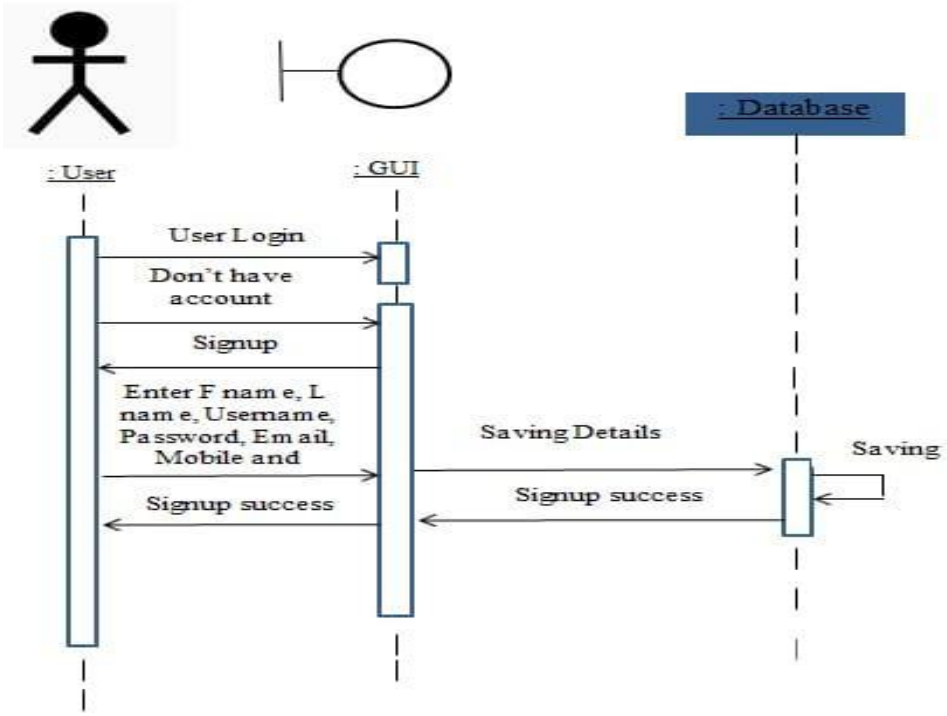
ADMIN SIDE LOGIN SEQUENCE DIAGRAM IN CASE WHEN ADMIN ENTERS INCORRECT PASSWORD OR USERNAME



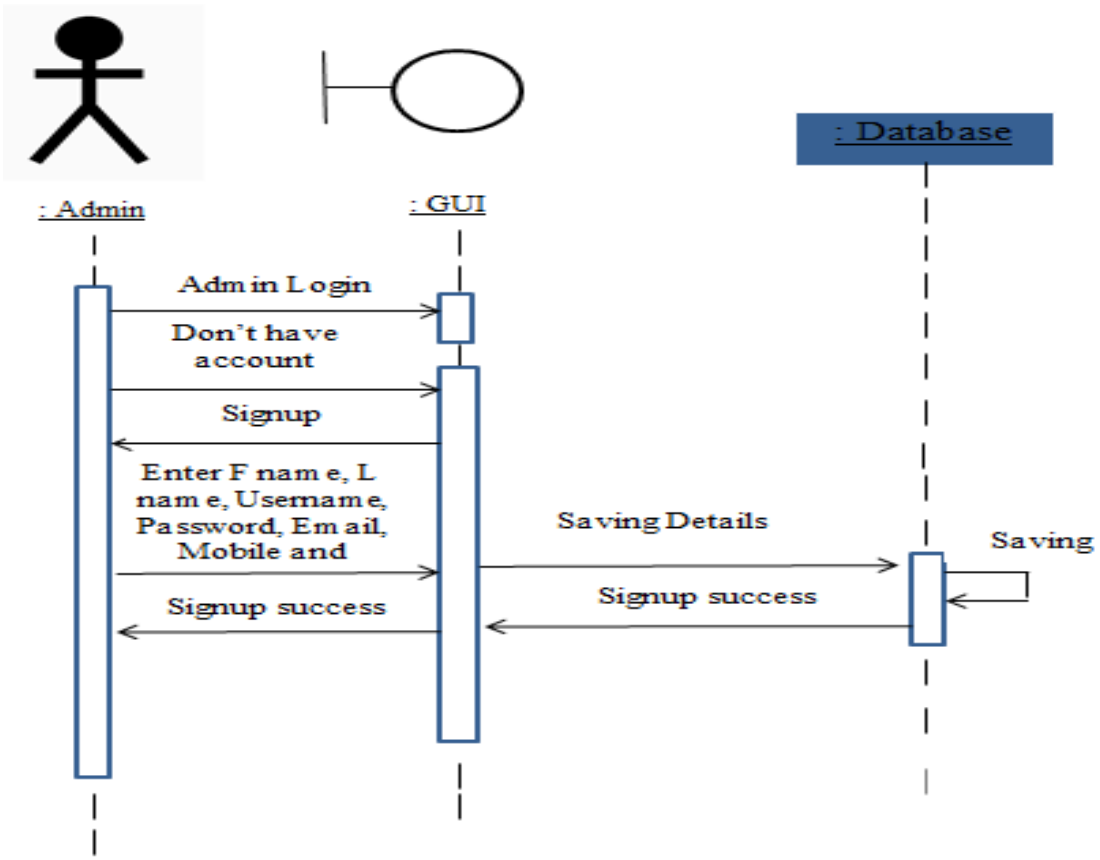
USER SIDE LOGIN SEQUENCE DIAGRAM IN CASE WHEN USER ENTERS INCORRECT PASSWORD OR USERNAME



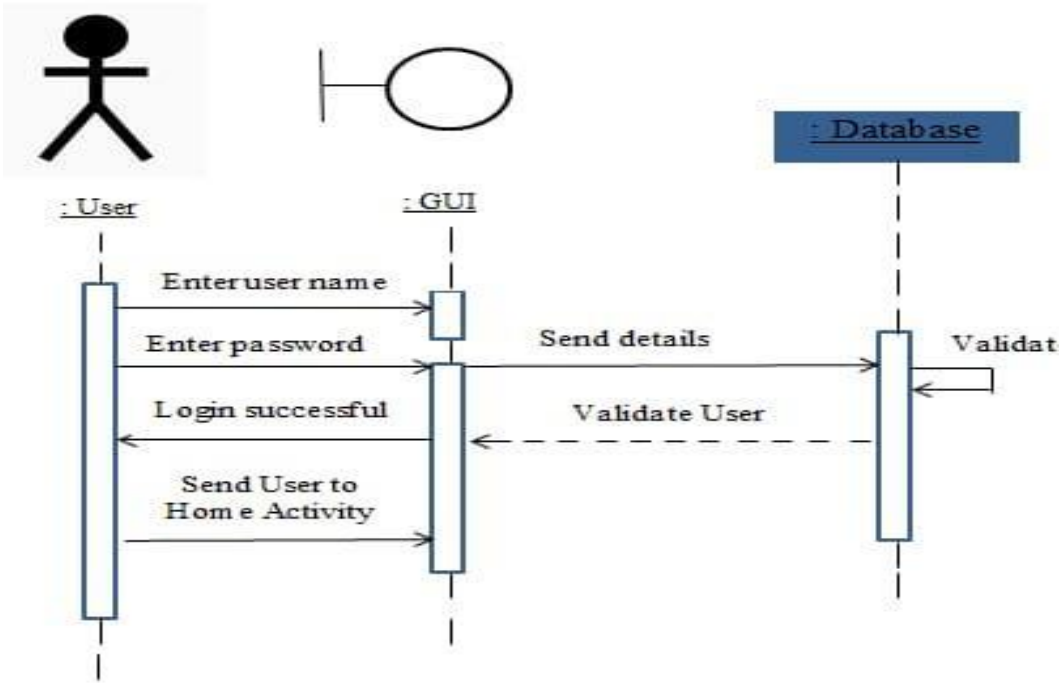
USER SIDE SIGNUP SEQUENCE DIAGRAM



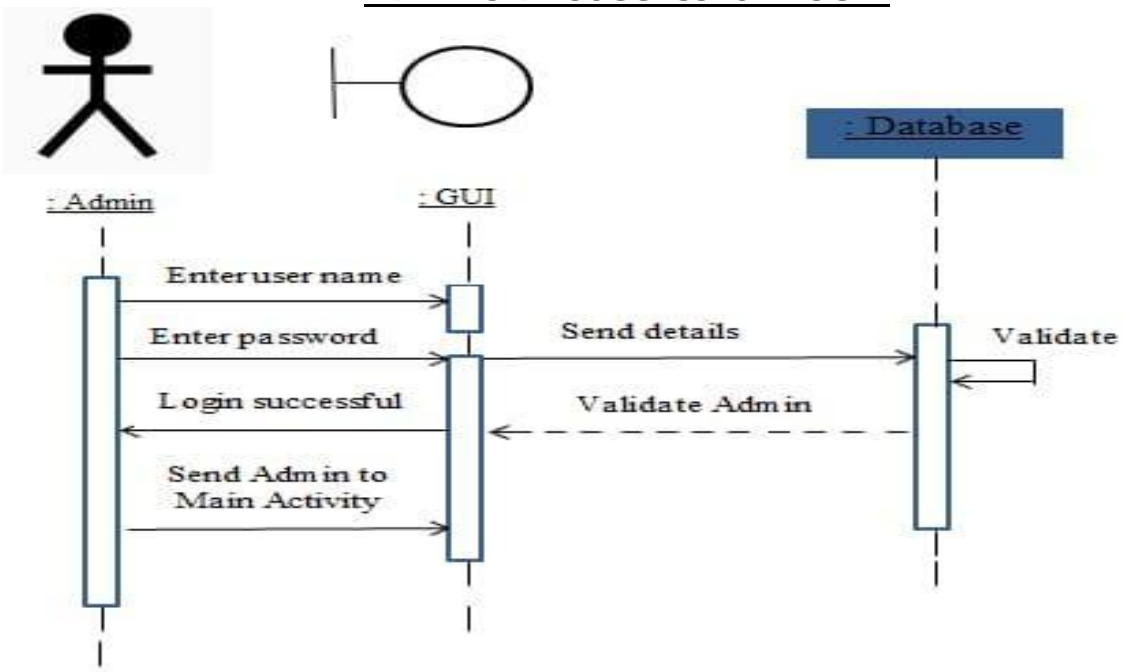
ADMIN SIDE SIGNUP SEQUENCE DIAGRAM



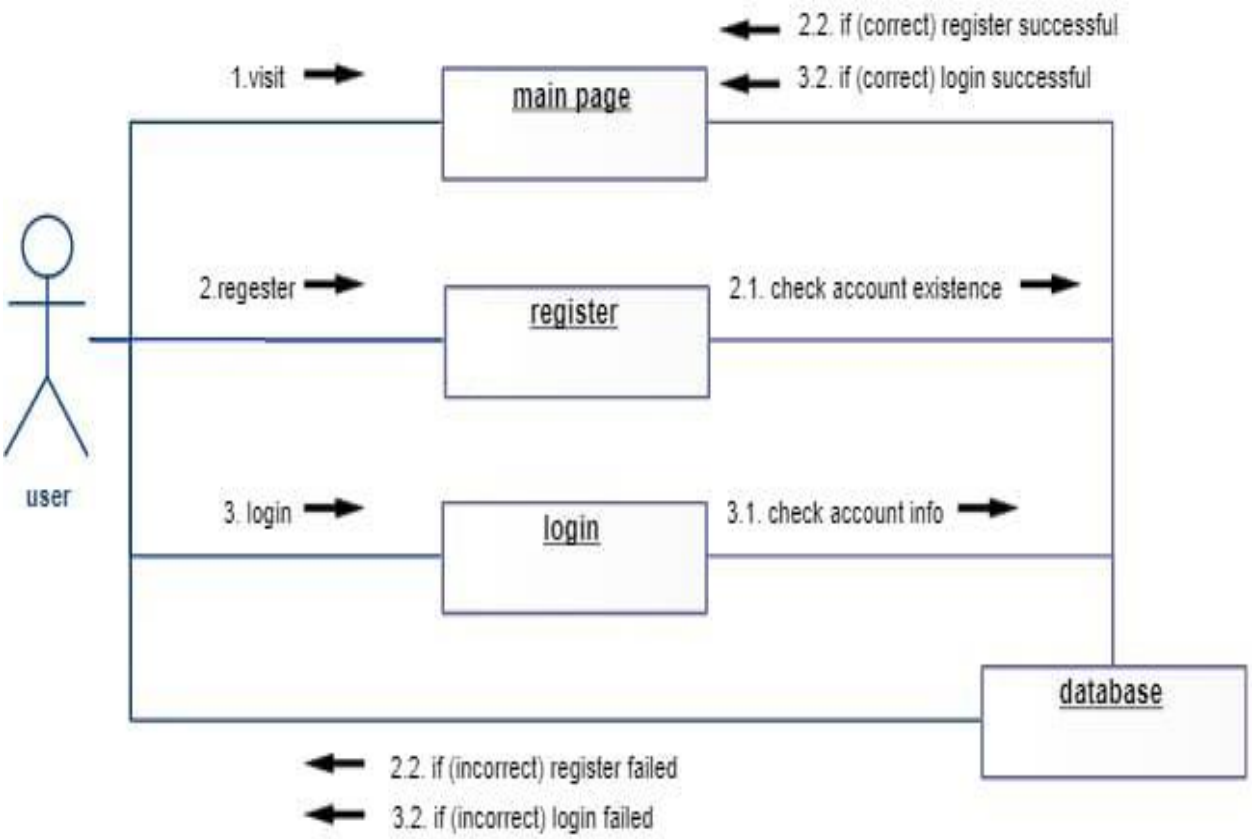
USER SIDE SUCCESSFUL LOGIN DIAGRAM



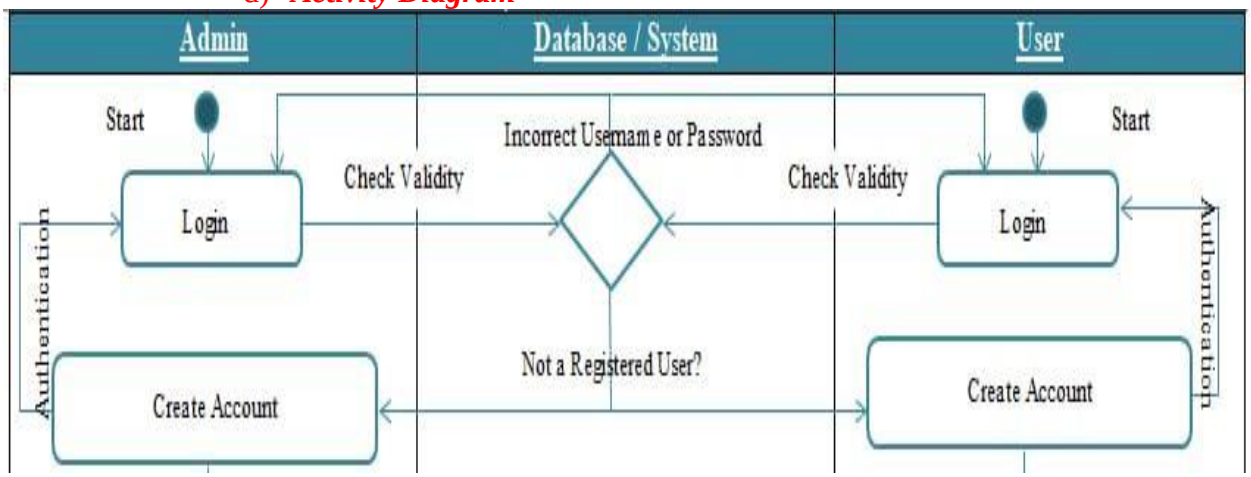
ADMIN SIDE SUCCESSFUL LOGIN



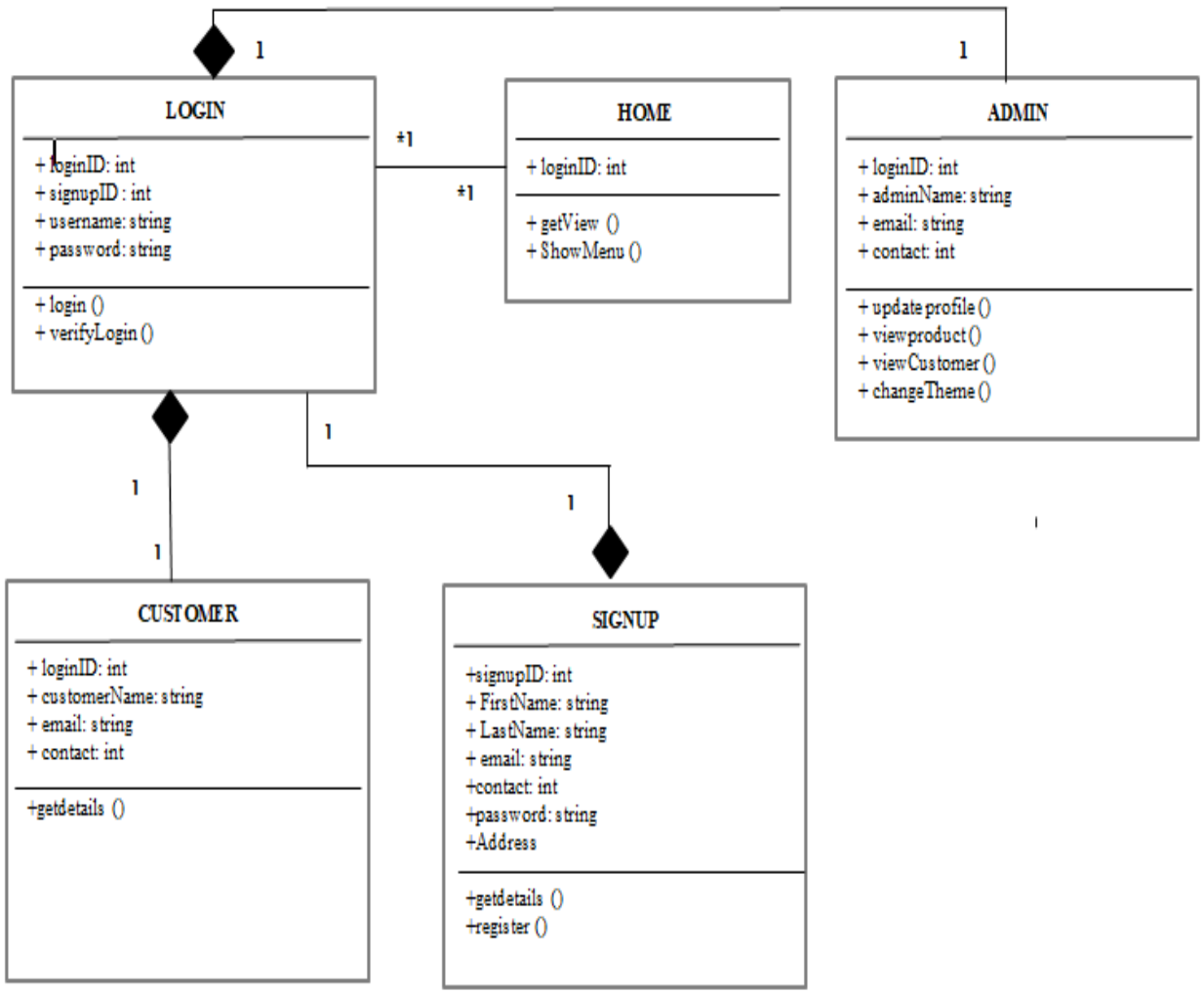
c) ***Collaboration Diagram***



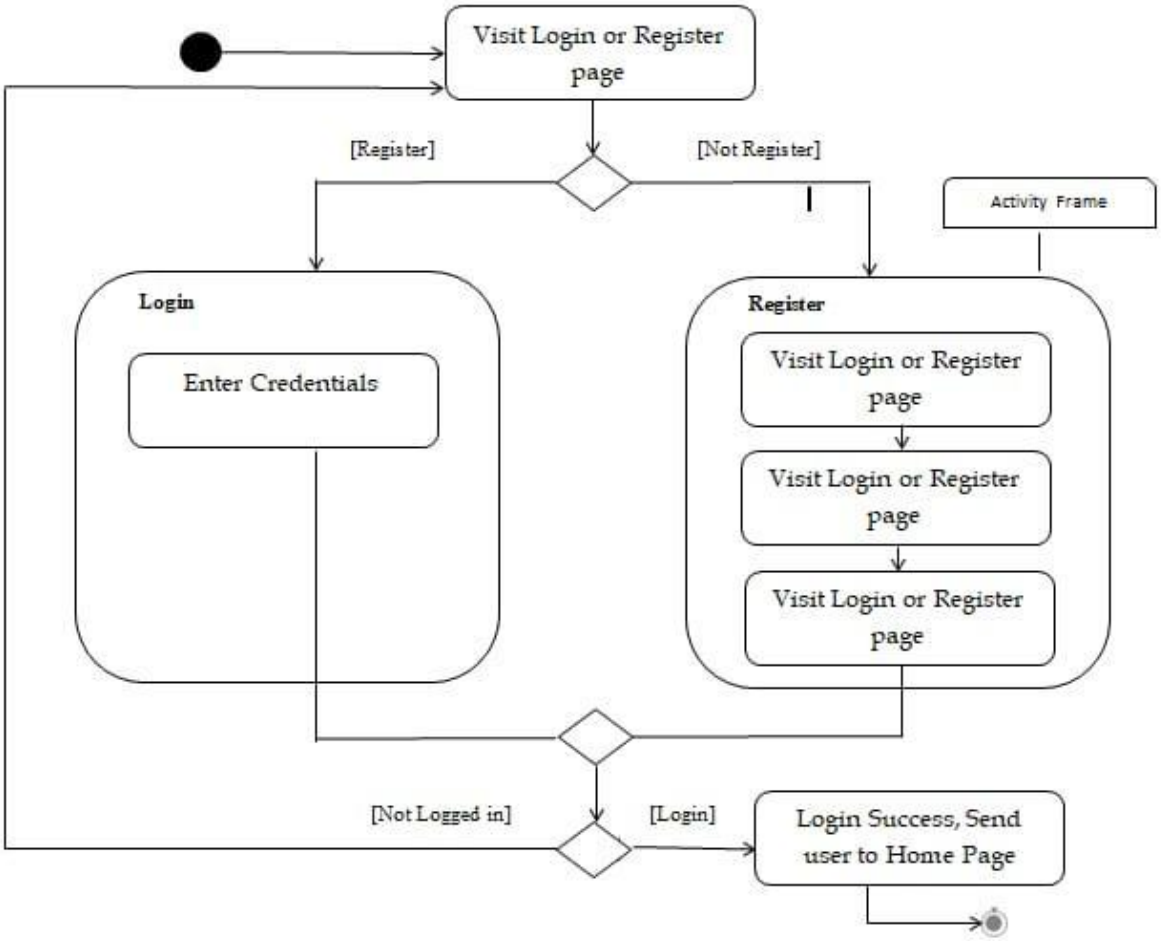
d) ***Activity Diagram***



e) ***Class Diagram***



f) ***State Chart Diagram***



3.1.2 **Module 2 complete CRUD Admin Side (Change the theme of website + Add/Edit/Delete Products + Add/Edit/Delete Customers)**

a) ***Description:*** This function allows the admin to view/add/delete/update product and customer. Admin can also change website theme in this module.

b) ***Usage Scenario/ Use case Description/ Specification:***

USE CASE NARRATION
E_COMMERCE SHOP

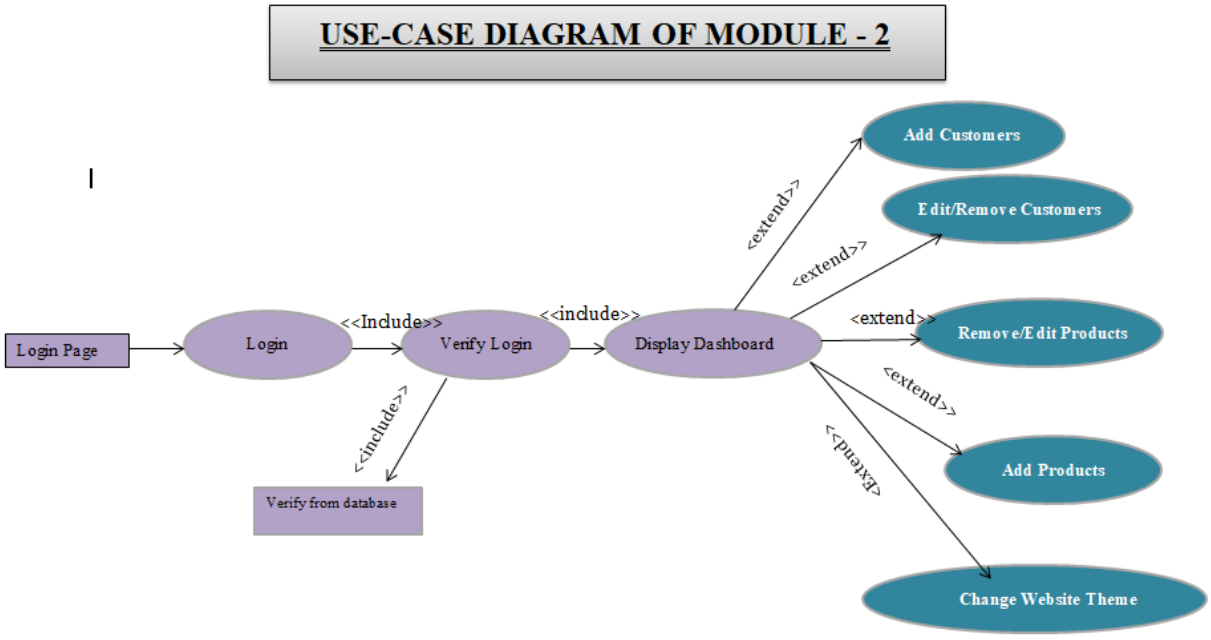
Author: __Javeria Hassan_____ Date: ___03-02-2021__

Version: ____01_____

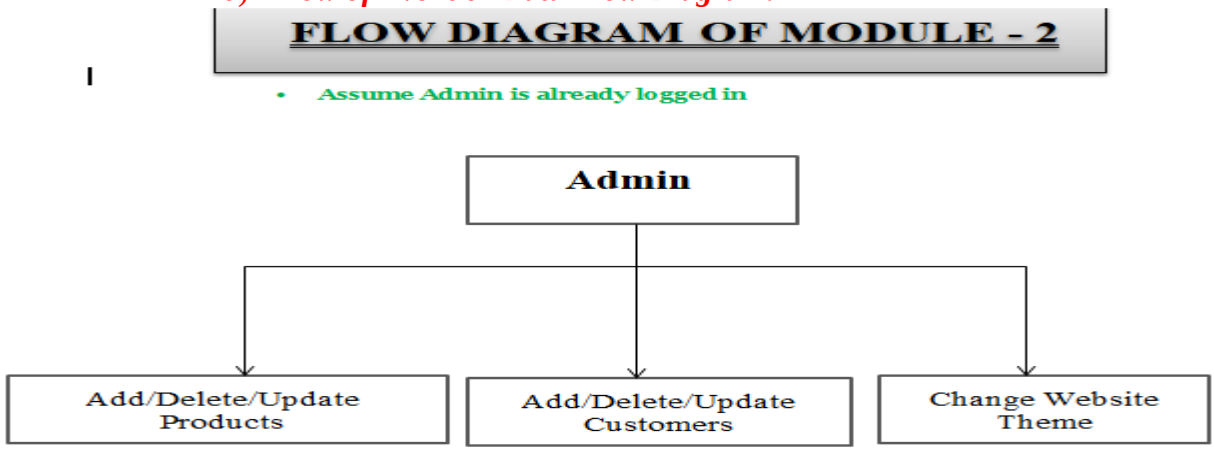
Use Case Name:	**Add/Update/Remove**	**Use Case Type:** ○ ***Business Requirement*** ○ ***System Analysis***
Use Case ID:	02	
Priority:	High	
Source:		
Primary Business Actor:	○ Admin	
Primary System Actor:	○ Admin	
Other Participated Actors:	○ Suppliers (Supply customer order) (External server) ○ Ware House (Alias, Distributor)(External Server) ○ Vendors (We buy products from Vendors) (External server) ○ Accounts (External server) ○ Database	
Other Interested Stockholders:	○ Marketing------ Interested in product sales activity in order to plan new promotions.	
Description:	This use case describes the event of an admin when he logged in his dashboard. The dashboard shows several options to admin to select and perform action. This use case describes the event of add/view/delete/update product and customer and change of website theme. When admin selects option of product from side menu bar, then he can add and update product but he has to provide all required fields. Similar for add and update of customer. Lastly, when admin selects option of change theme of website, he has to select necessary options then theme will be changed.	
Precondition:	Admin must logged in and have rights to do changes in database.	
Trigger:	This use case is initiated when an admin logged in and selects option of product, customer and change theme.	
Typical Course of Events:	**Actor Action**	**System Response**
	Step 1: The admin requests the option to view products.	**Step 2:** System display products from the database.
	Step 3: The admin browses the available products and selects the ones he or she wants to edit.	**Step 4:** System checks whether he provided all required fields and correct information or not. If yes, then system will update the product, otherwise it shows error.

	Step 5: If admin select the option of add product	**Step 6:** System checks whether he provided all required fields and correct information or not. If yes, then system will add the product, otherwise it shows error.
	Step 7: If admin selects option of remove product	**Step 8:** The System remove the product
	Step 9: The admin requests the option to view customers.	**Step 10:** System display customers from the database.
	Step 11: The admin browses customers and selects the ones he or she wants to edit.	**Step 12:** System checks whether he provided all required fields and correct information or not. If yes, then system will update the customer info, otherwise it shows error.
	Step 13: If admin selects option of remove customer.	**Step 14:** System display customers from the database
	Step 15: If admin selects option of change website theme.	**Step 16:** The system will ask the admin to select required changes which admin wants to apply then system will apply those changes on website.

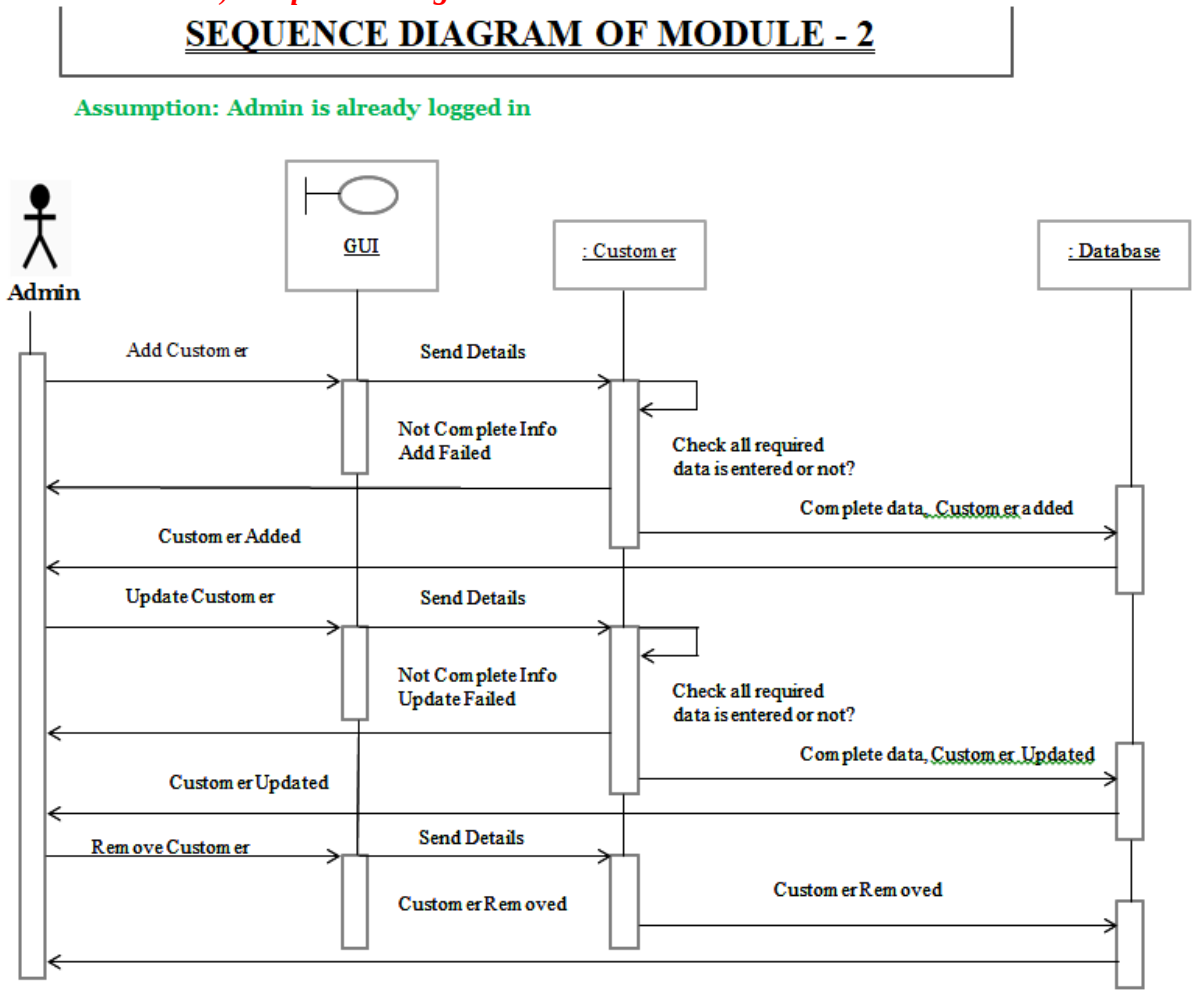
c) ***Use case Diagram:***



d) ***Flow of Event or Data Flow Diagram:***

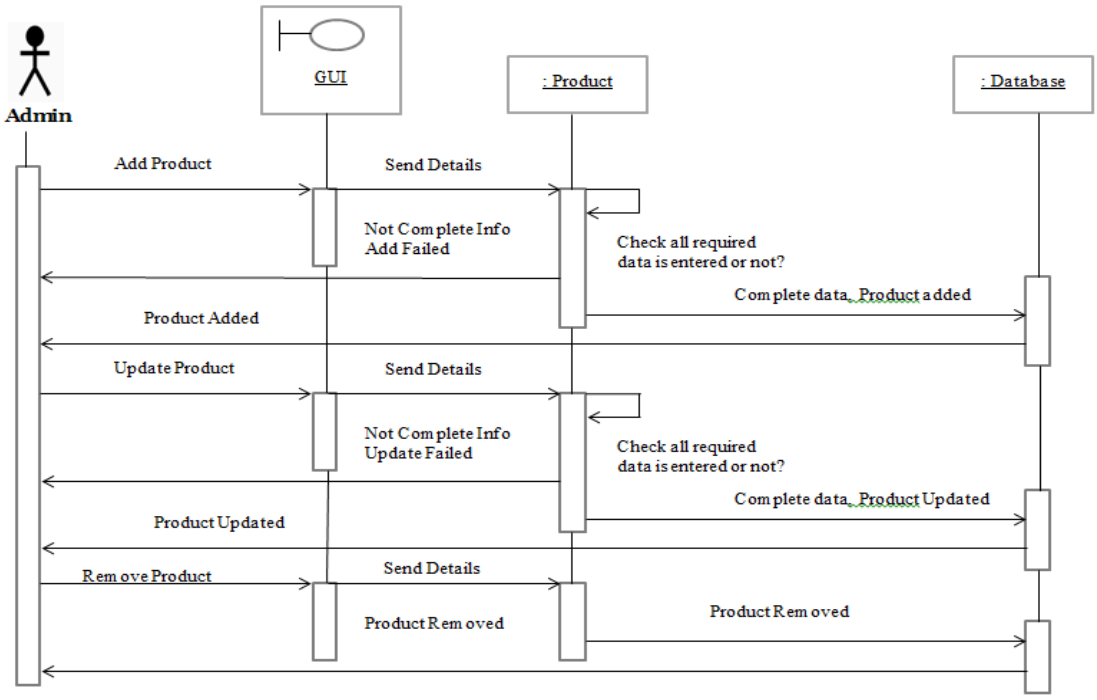


e) ***Sequence Diagram:***



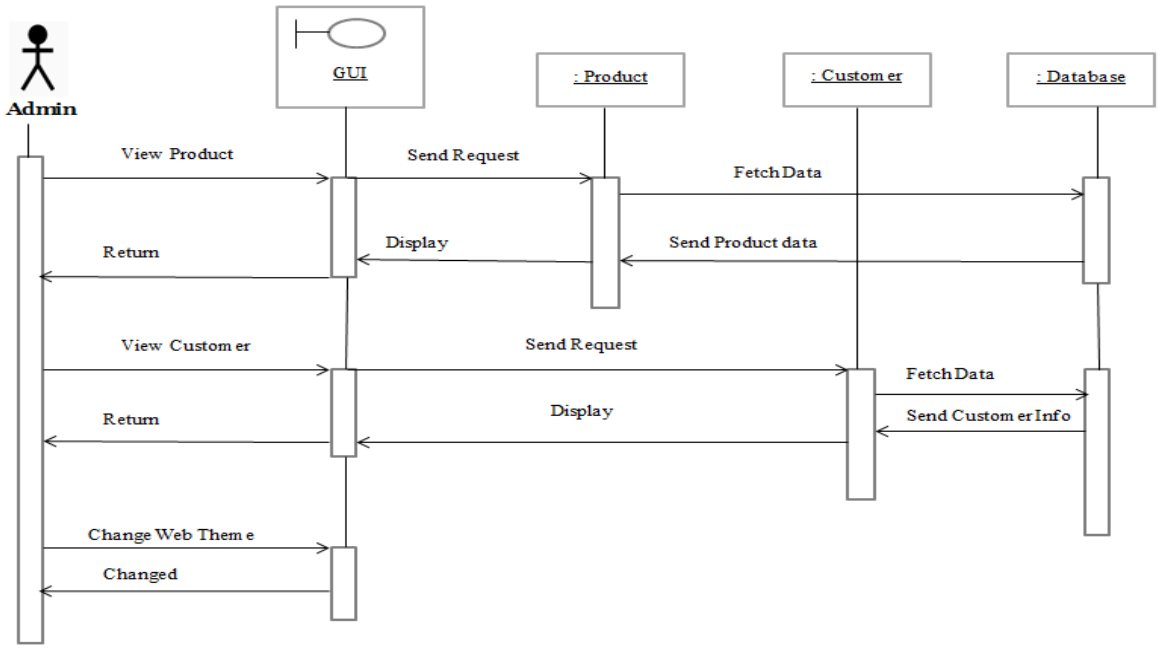
SEQUENCE DIAGRAM OF MODULE - 2

Assumption: Admin is already logged in

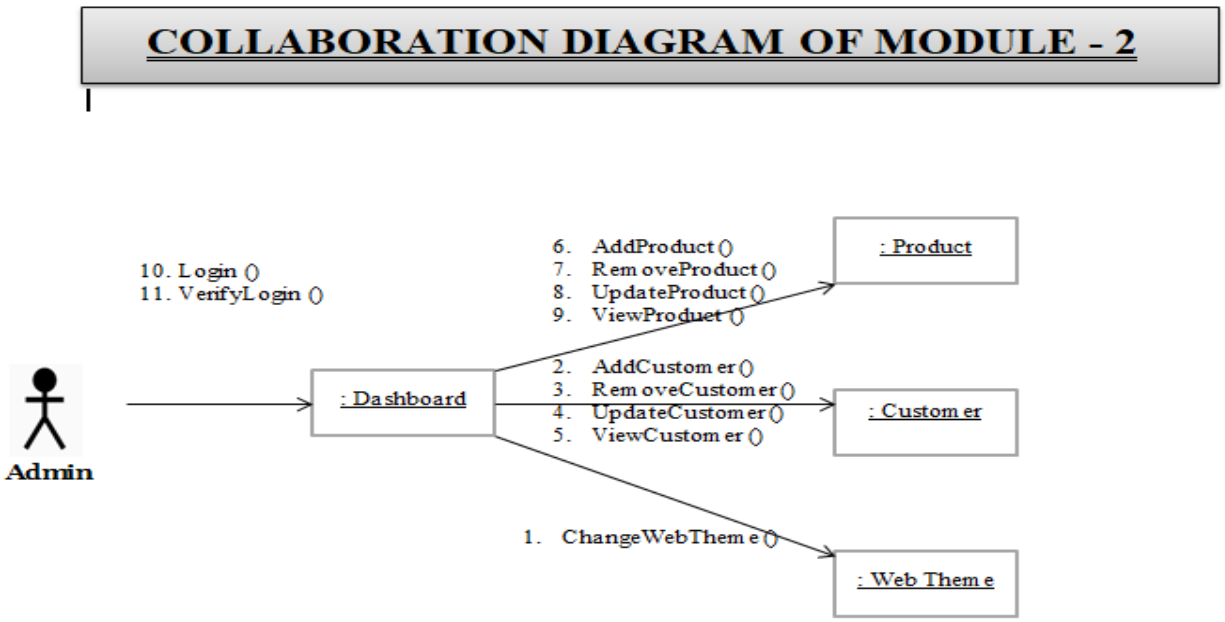


SEQUENCE DIAGRAM OF MODULE - 2

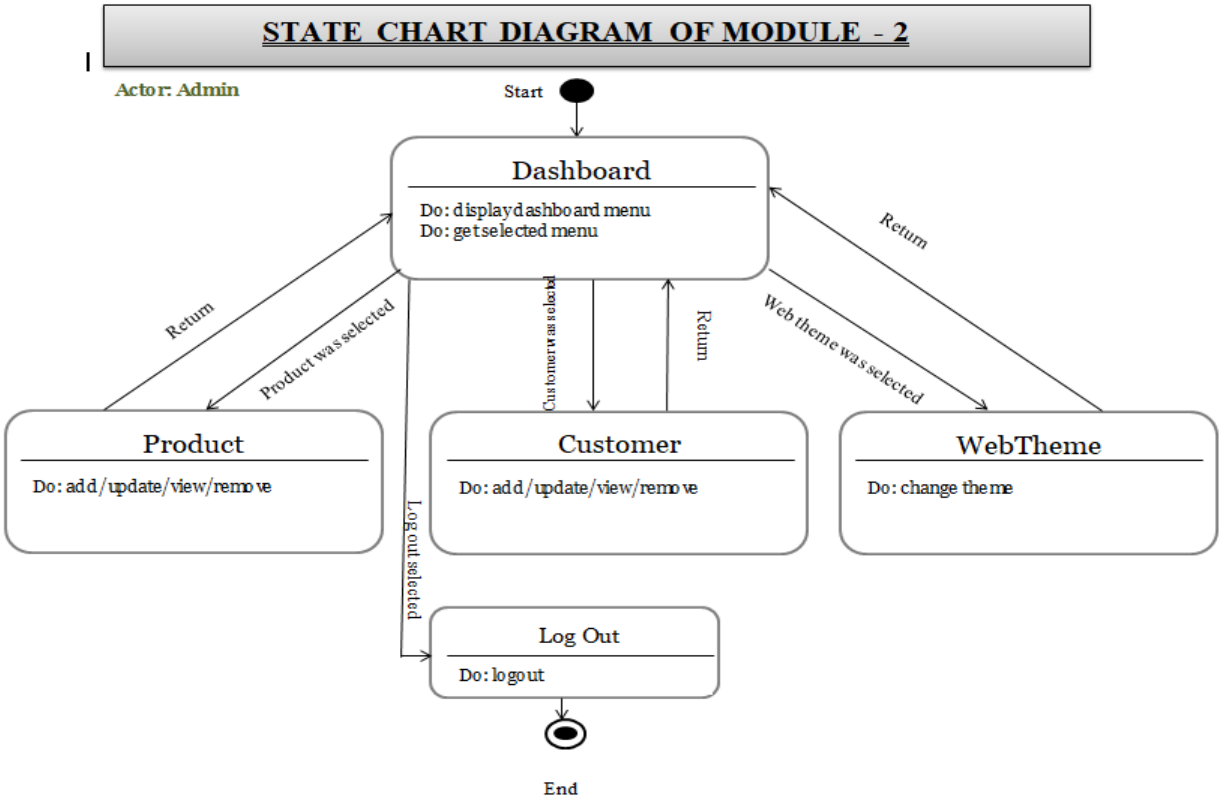
Assumption: Admin is already logged in



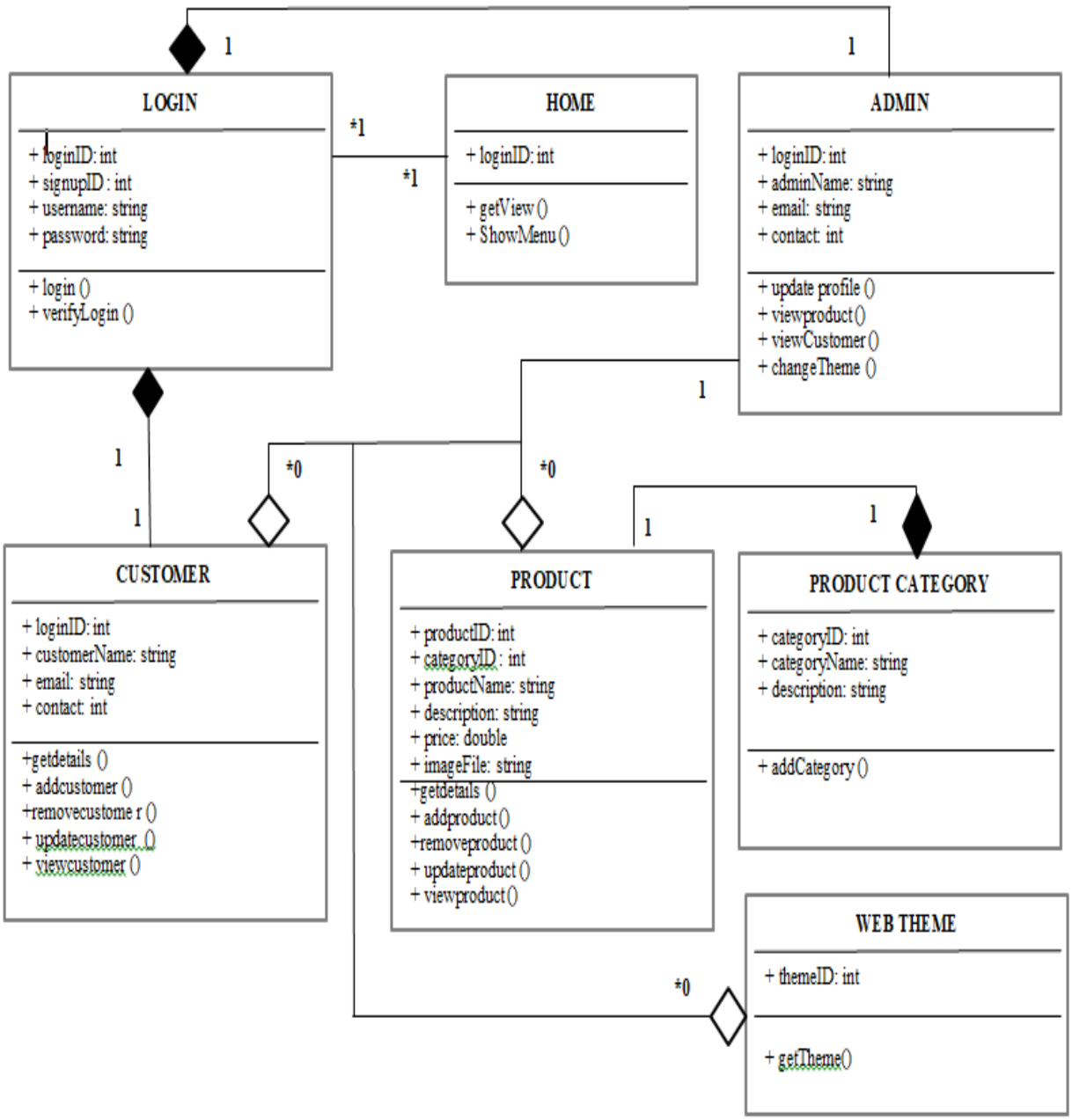
f) ***Collaboration Diagram:***



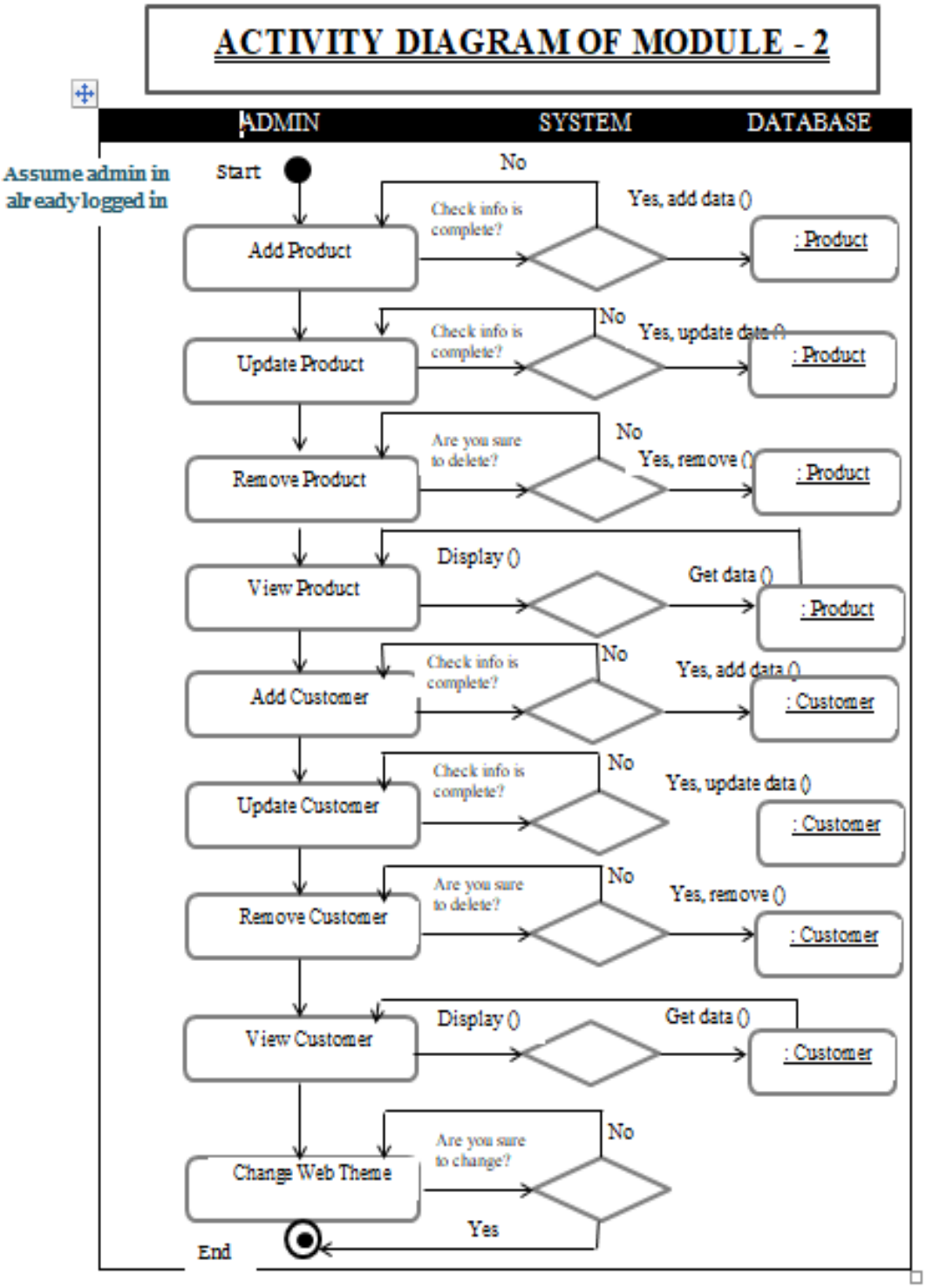
g) ***State Chart Diagram:***



h) ***Class Diagram:***



i) ***Activity Diagram:***



3.1.3 Module 3 complete CRUD **Admin Side (Add/Edit/Delete Suppliers + Approve/Delete /Change Status of Orders + Add/Edit/Delete Emplyee)**

i. ***Description:*** In this module, we will implement the functionality on admin side that after successful login, admin can add new suppliers in database. Admin can also delete existing suppliers or update their data. Secondly, Admin can view new and existing orders. Thirdly, admin can add new employee in database and provide new user name and password to that employee to login in an admin panel. Similarly, admin can delete data of any employee.

ii. ***Use Case Narration:***

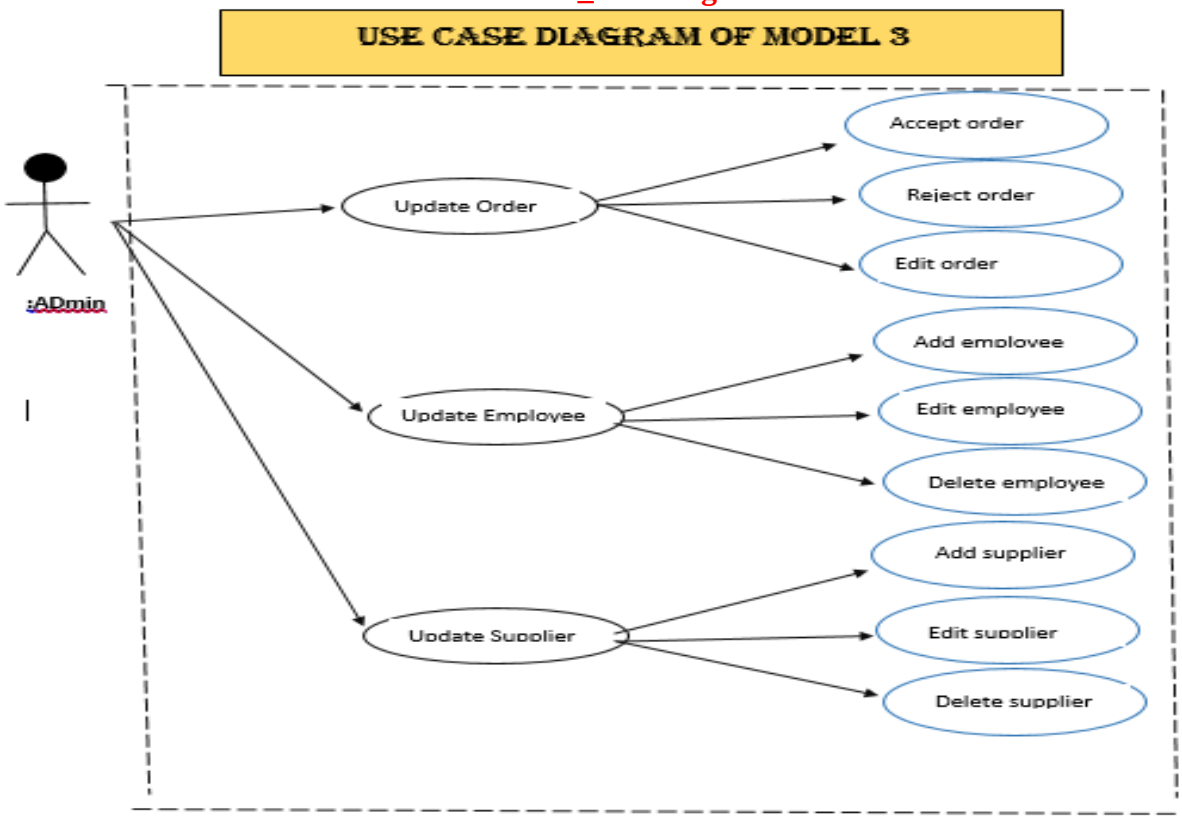
E_COMMERCE SHOP

___03-02-2021__

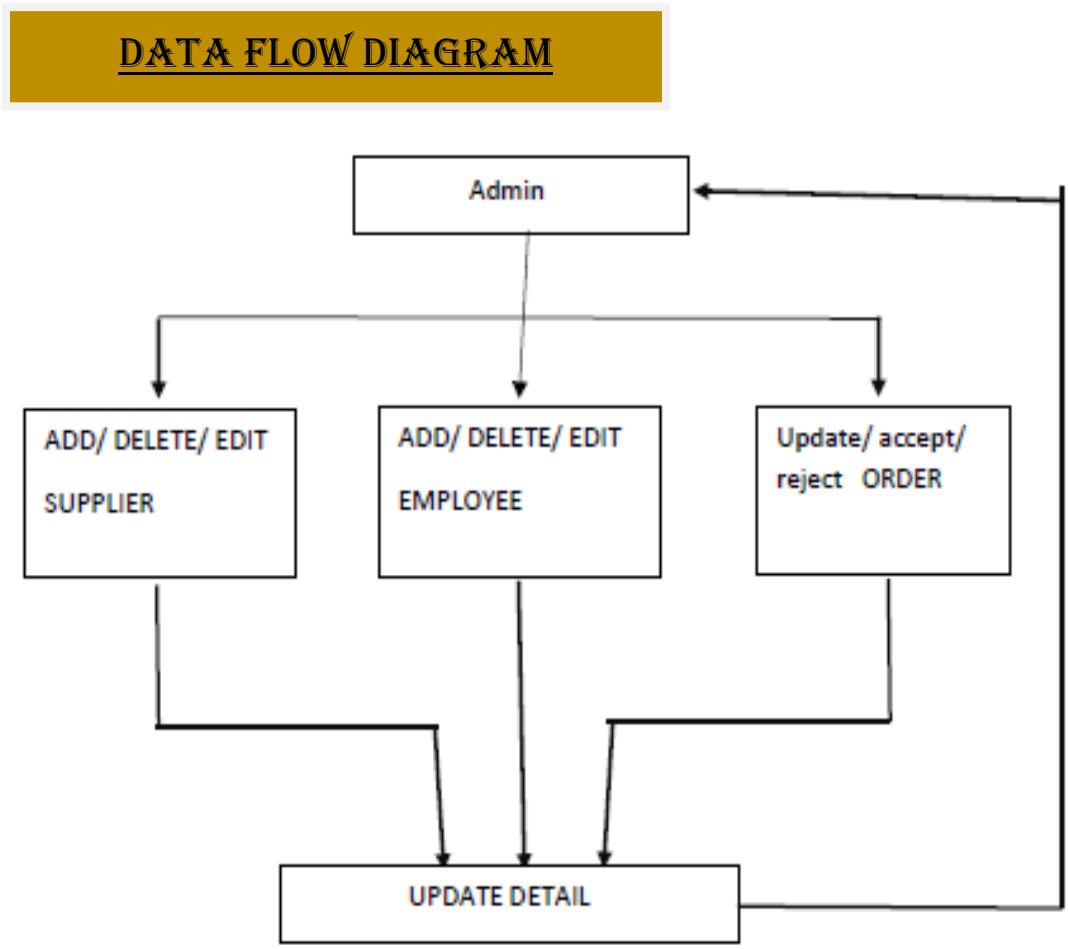
Use Case Name:	**Add/Edit /Delete**	**Use Case Type:** ○ ***Business Requirement*** ○ ***System Analysis***
Use Case ID:	03	
Priority:	High	
Source:		
Primary Business Actor:	○ Admin	
Primary System Actor:	○ Admin	
Other Participated Actors:	○ Suppliers (Supply Employee Order) ○ Database	
Description:	This use case describes the event of an admin when he logged in his dashboard. The dashboard shows several options to admin to select and perform action. This use case describes the event of add/edit/delete Supplier and Employee and Order. When admin selects option of Order from side menu bar, then he can add and update Order but he has to provide all required fields. Similar for add and update of employee. . Similar for add and update of order.	
Precondition:	Admin must logged in and have rights to do changes in database.	
Trigger:	This use case is initiated when an admin logged in and selects option of employee , order and supplier.	
Typical Course of Events:	**Actor Action**	**System Response**
	Step 1: The admin requests the option to view employee.	**Step 2:** System display employee from the database.
	Step 3: The admin browses the available employee and selects the ones he or she wants to edit.	**Step 4:** System checks whether he provided all required fields and correct information or not. If yes, then system will update the employee, otherwise, it shows error.
	Step 5: If admin select the option of	**Step 6:** System checks whether he

	add Employee	provided all required fields and correct information or not. If yes, then system will add the Employee, otherwise, it shows error.
	Step 7: If admin selects option of delete employee	**Step 8:** The System delete the employee
	Step 9: The admin requests the option to view order.	**Step 10:** System display oder from the database.
	Step 11: The admin browses order and selects the ones he or she wants to edit.	**Step 12:** System checks whether he provided all required fields and correct information or not. If yes, then system will update the customer info, otherwise, it shows error.
	Step 13: If admin selects option of reject order.	**Step 14:** System display order from the database
	Step 15: If admin selects option of Supplier.	**Step 16:** The system will ask the admin to select required changes which admin wants to do system will update those changes.

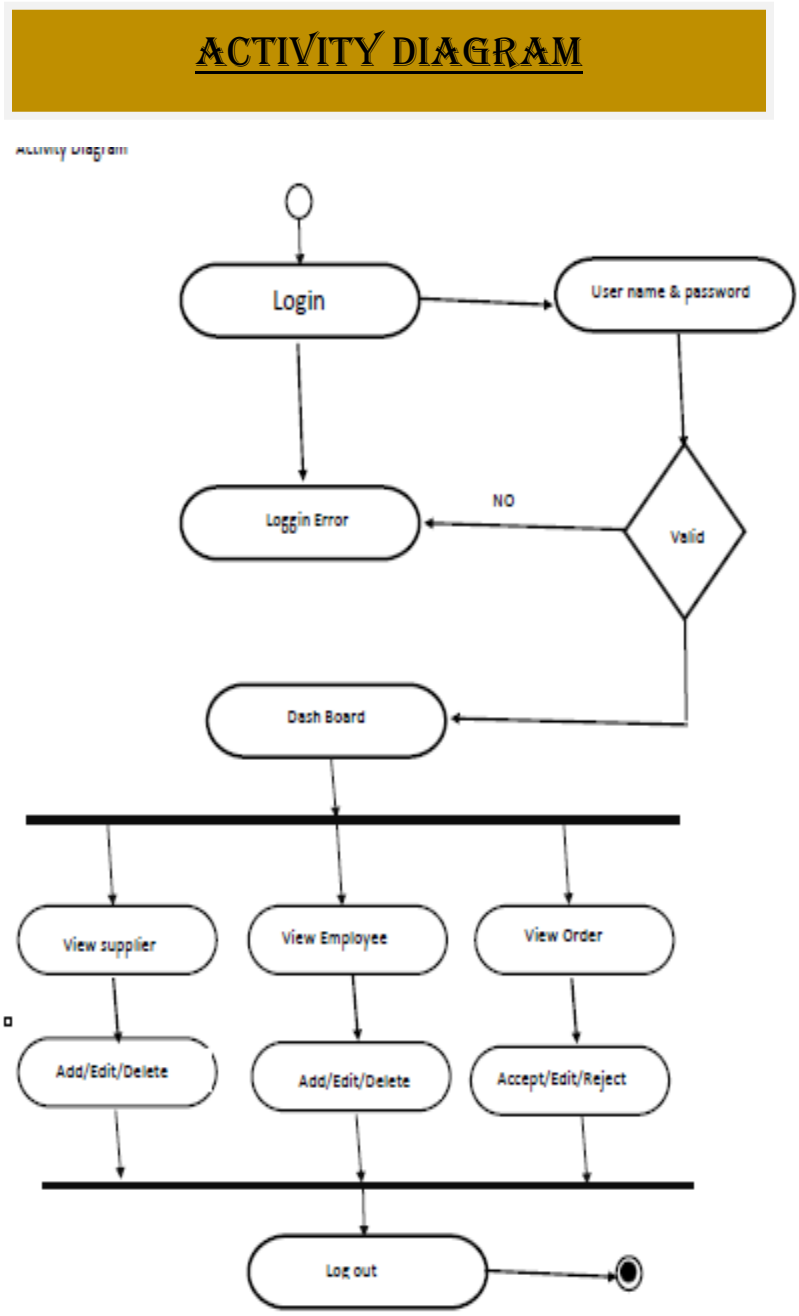
iii- **Use_case diagram:**



iv- **Data flow diagram:**



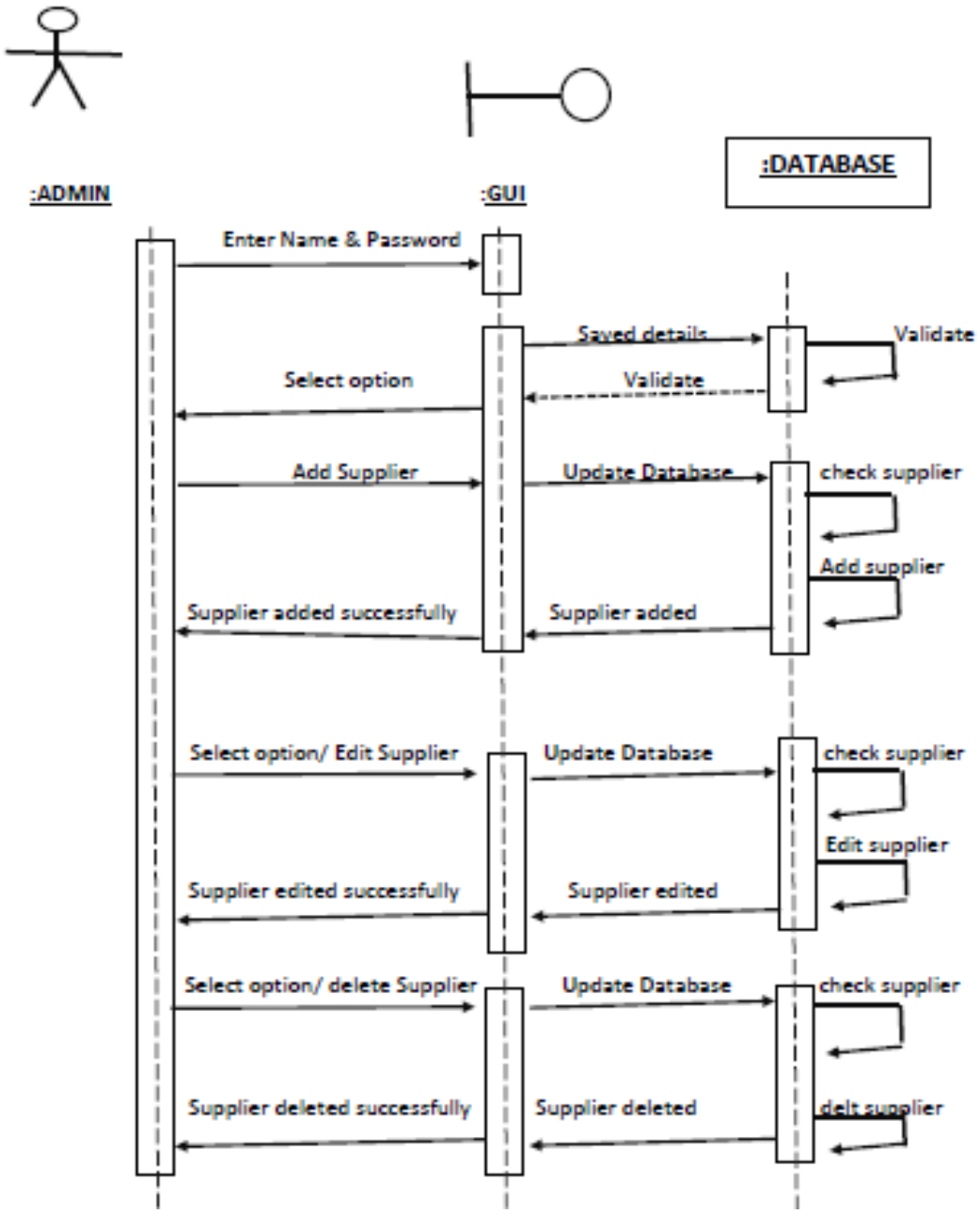
v- Activity diagram:



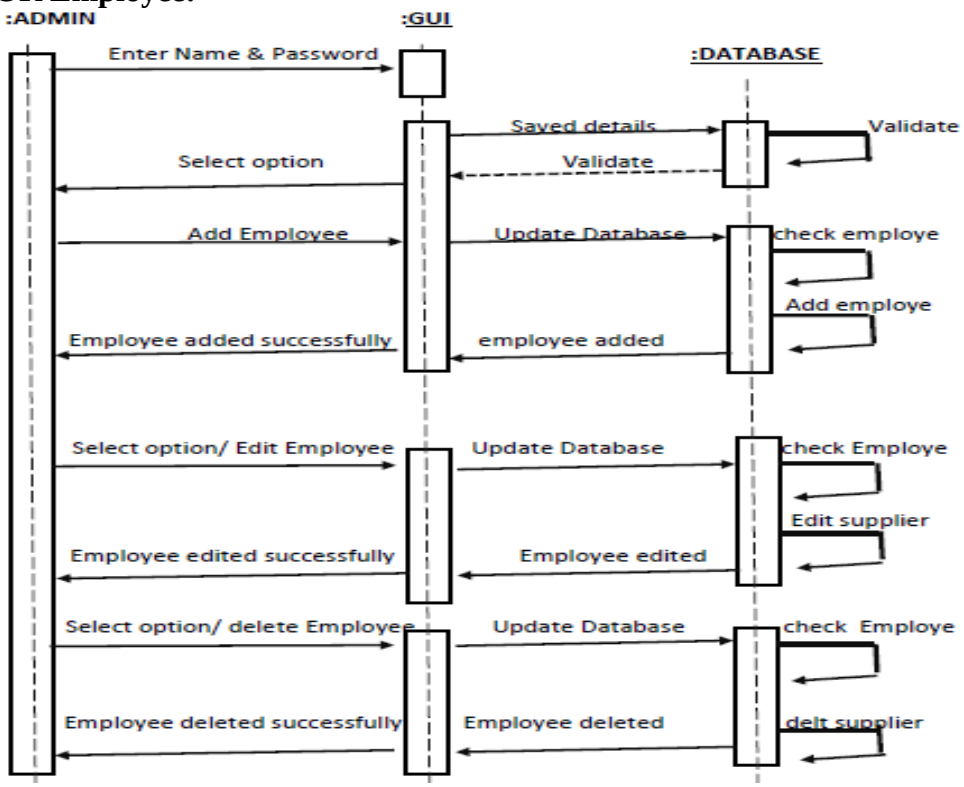
vi- **Sequence diagram:**

SEQUENCE DIAGRAM

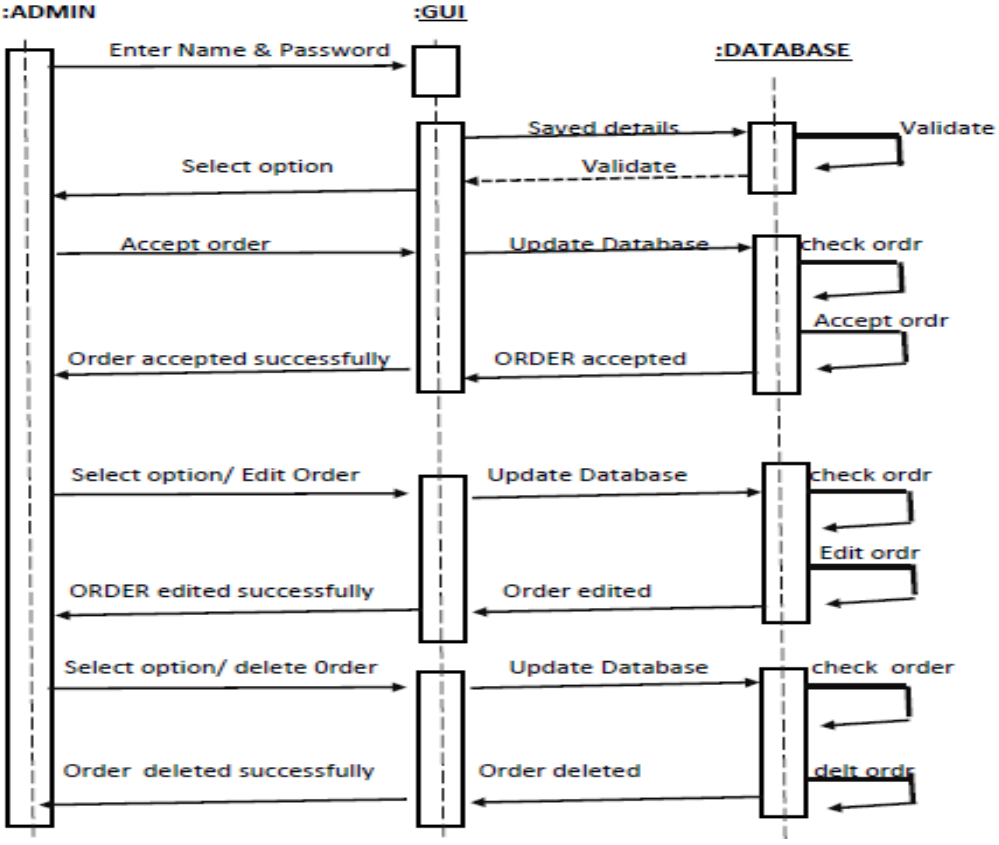
FOR SUPPLIER:



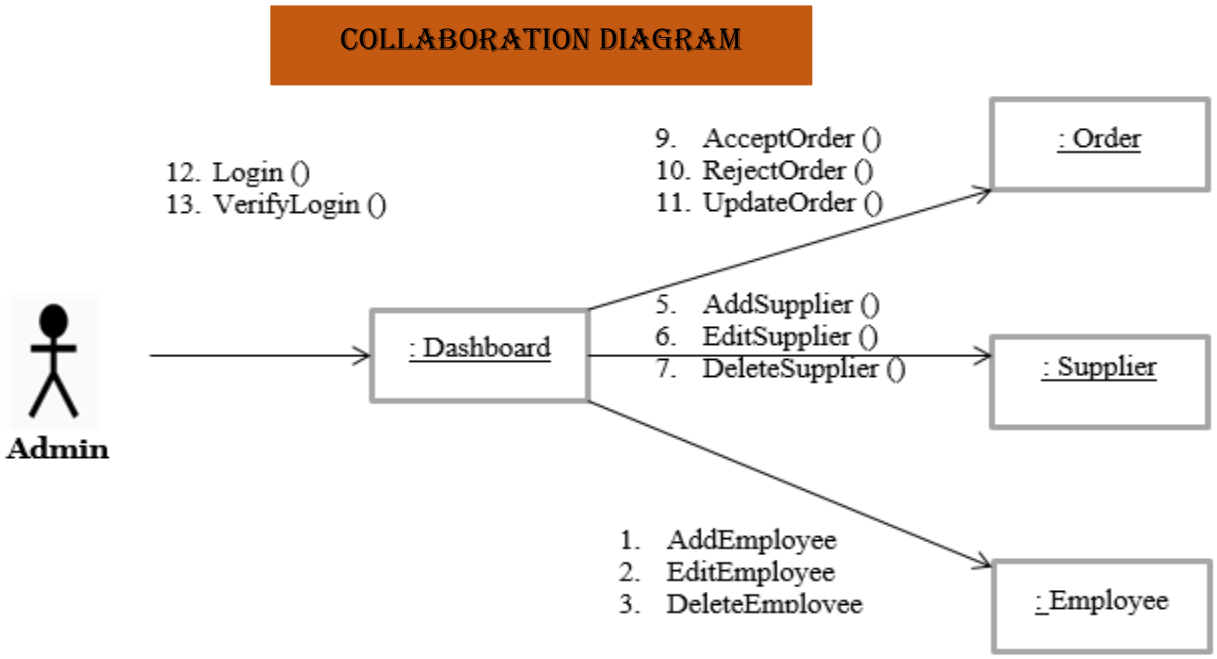
FOR Employee:



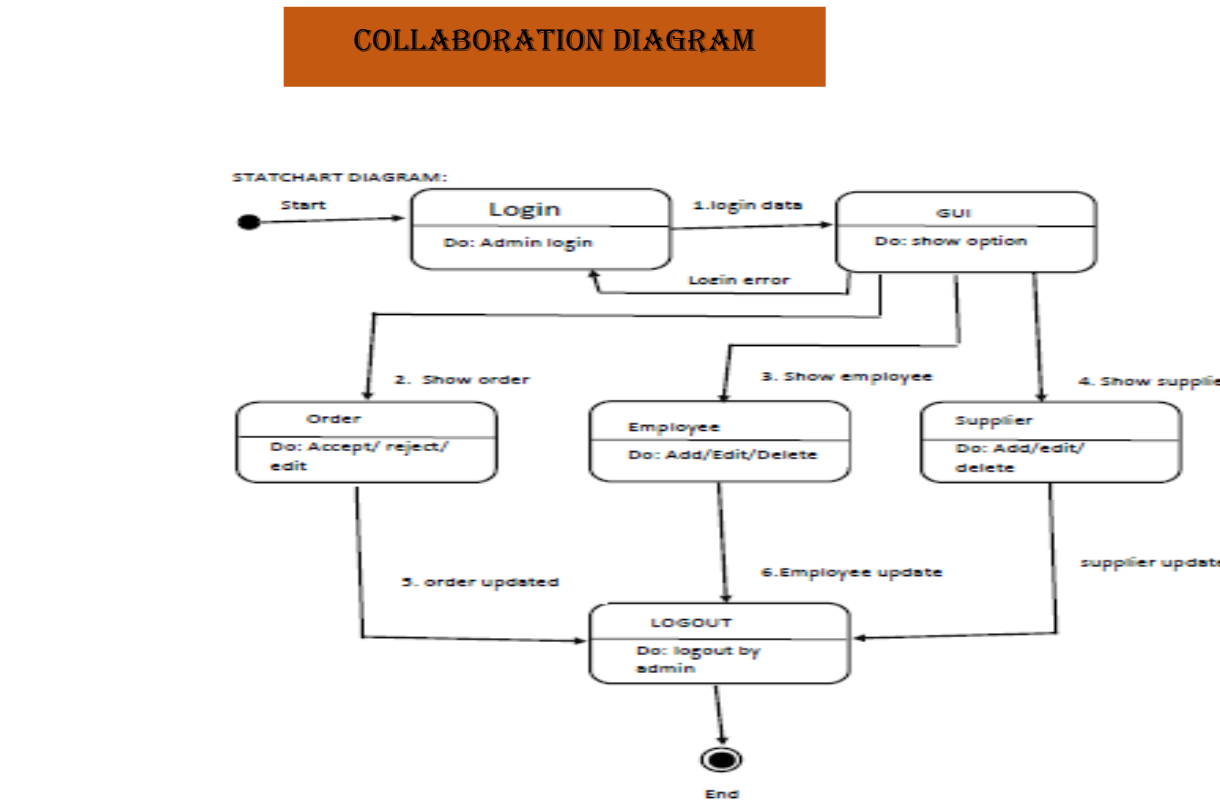
For Order:



vii- **Collaboration diagram:**

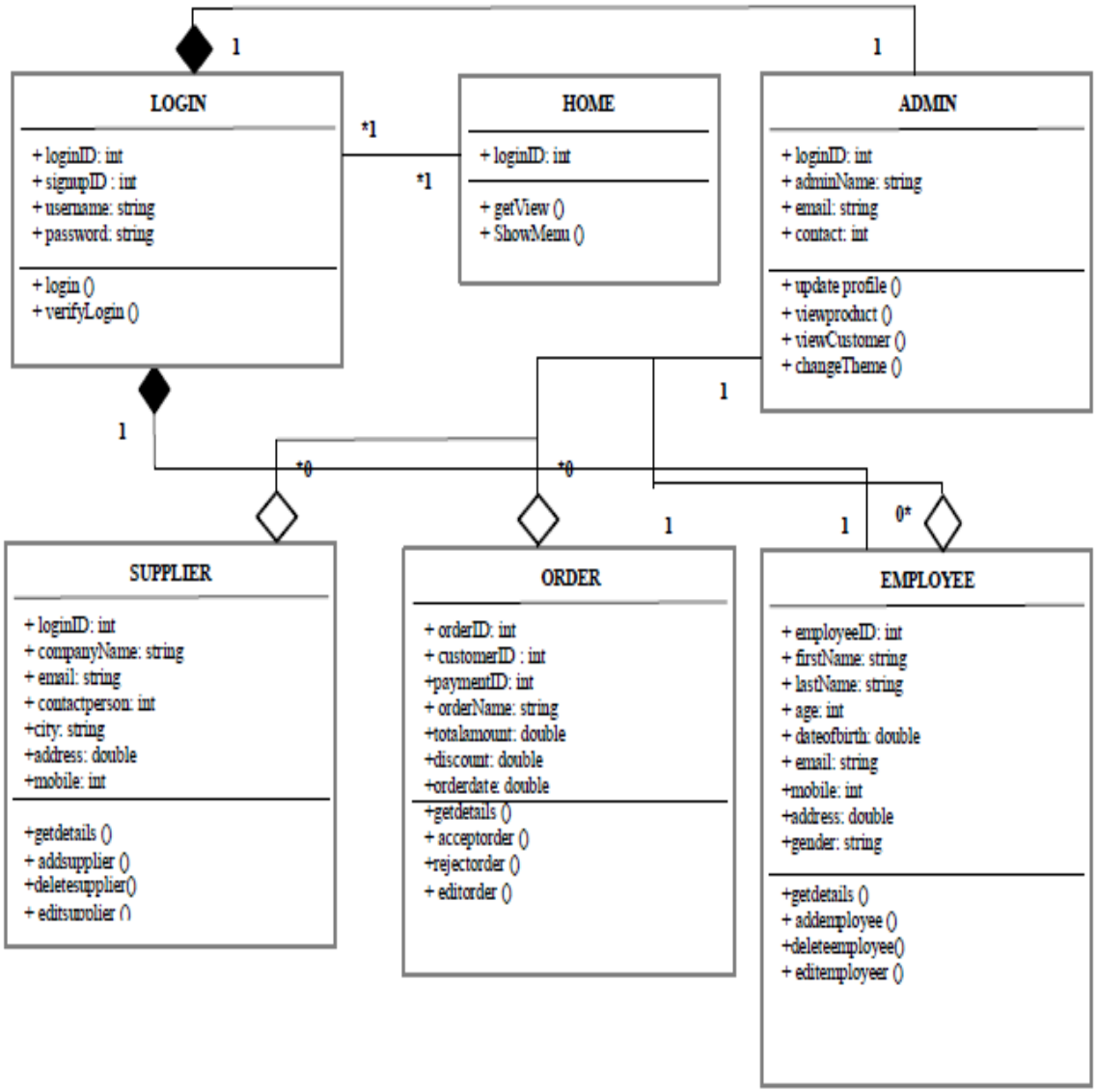


viii- **Statchart diagram:**



ix- **Class diagram**

COLLABORATION DIAGRAM



3.1.4 Module 4 complete CRUD Customer Side (Add/ Delete Product to Wishlist + Add/Delete Product in Cart + Search Product)

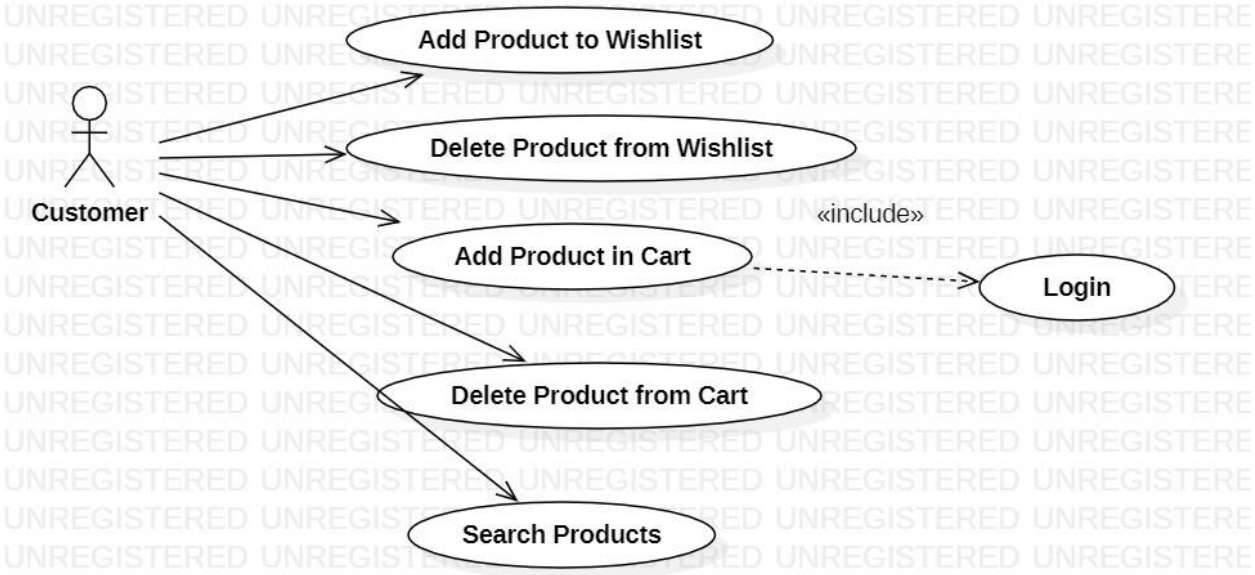
a.Description:

In this module, we will implement functionality on client side that users can add/ delete their desired products into their wish list for accessing them later. Secondly, add products into cart from the wish list interface or direct from the view product interface. Thirdly, remove products from cart. Lastly, users can search a product by applying different filters such as price and category

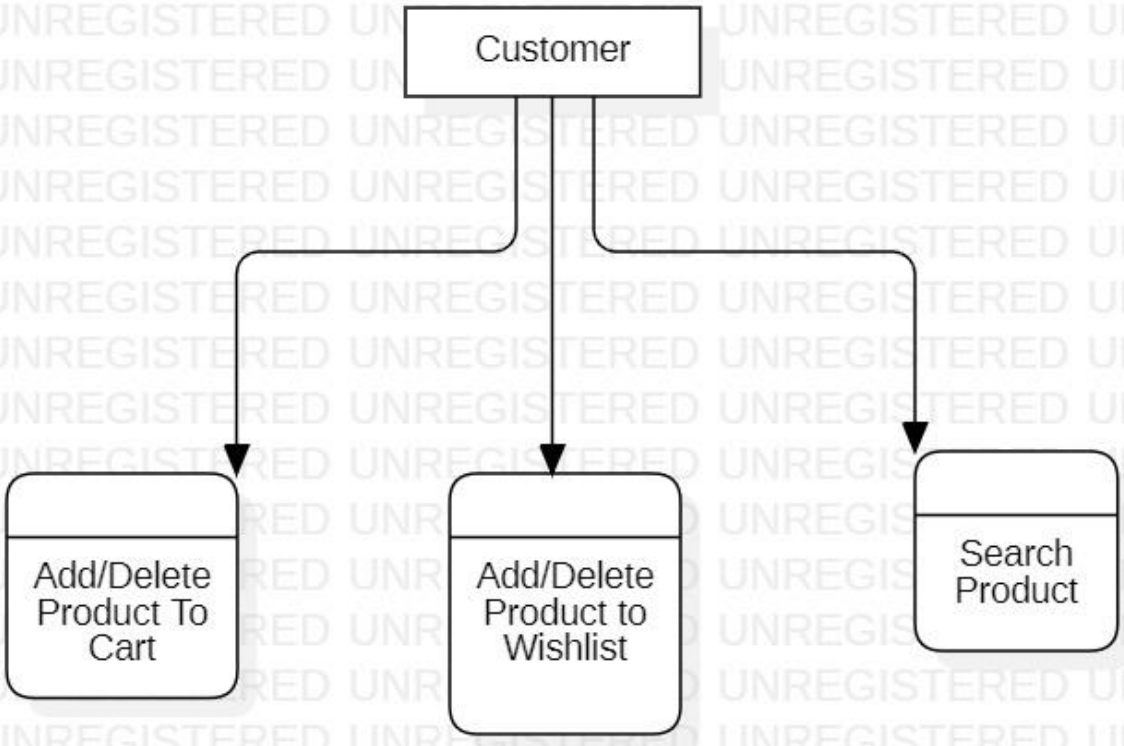
b. Usage Scenario/ Use case Description/ Specification:

Use Case Name:	Add_ProductTo Cart and Wishlist	
Use Case Id:	04	
Priority:	High	
Source:		
Primary Business Actor:	Customer	
Primary System Actor:		
Other Participated Actors:		
Other Intrested Stakeholders:		
Descriptions:	This usecase describes that customer will add a product to its cart and select other products to buy.	
Precondition:	This usecase will only be applicable for customer when customer is login with complete validation.	
Trigger:	This usecase will initiate when customer select the item to buy.	
Typical Course of Events:	Actor Action	System Response
	Step1:The Customer will view the products.	Step2:System will show the products to customer on the customer portal/site.
	Step3:The customer will select and add the item to add on cart along with the quantity but if customer doesnot want to buy at the moment just want to add on wishlist to buy later.	Step4:System will update the count in cart according to the customers selections, and if customer will only add in wishlist then update the wishlist counts.
	Step5:After finishing the shopping ,customer proceed to cart and will review its cart.	Step6: system will calculate the total bill for all items.

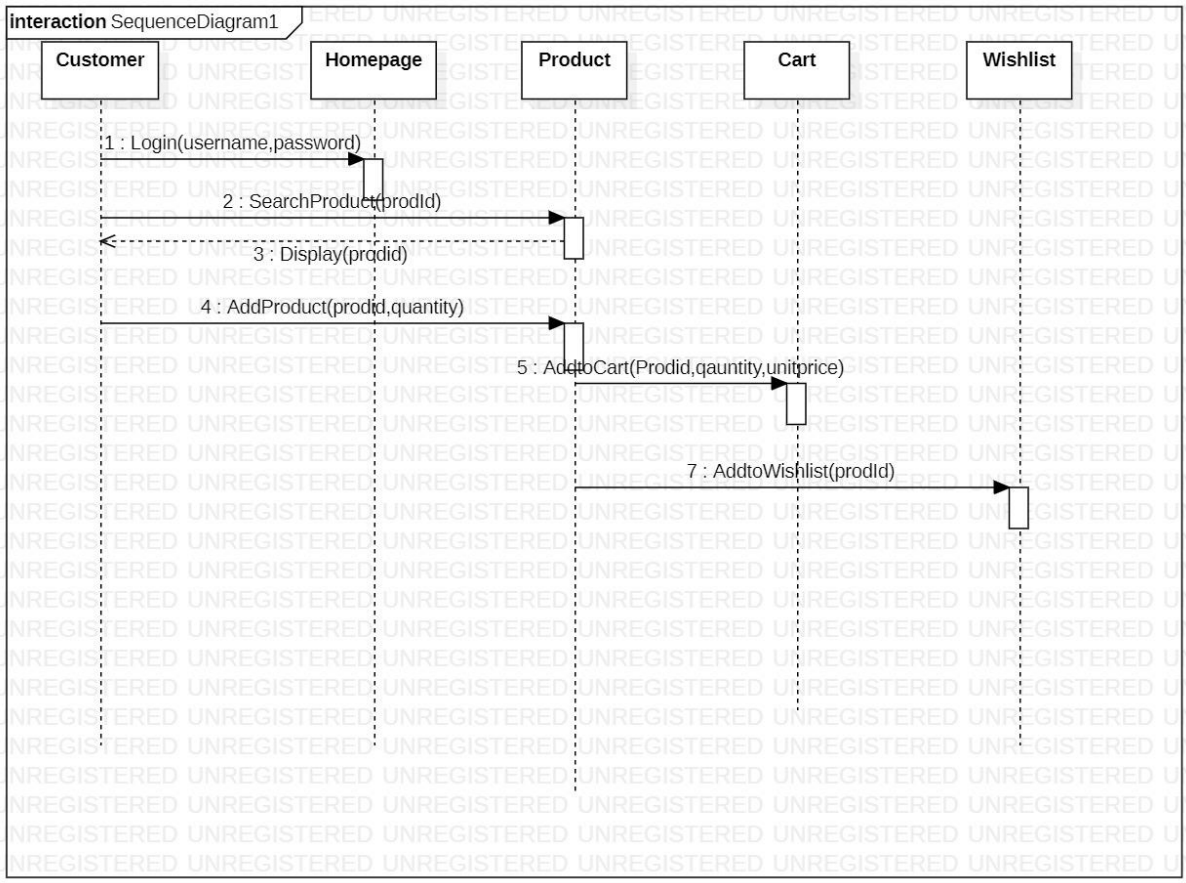
c.Use case Diagram:



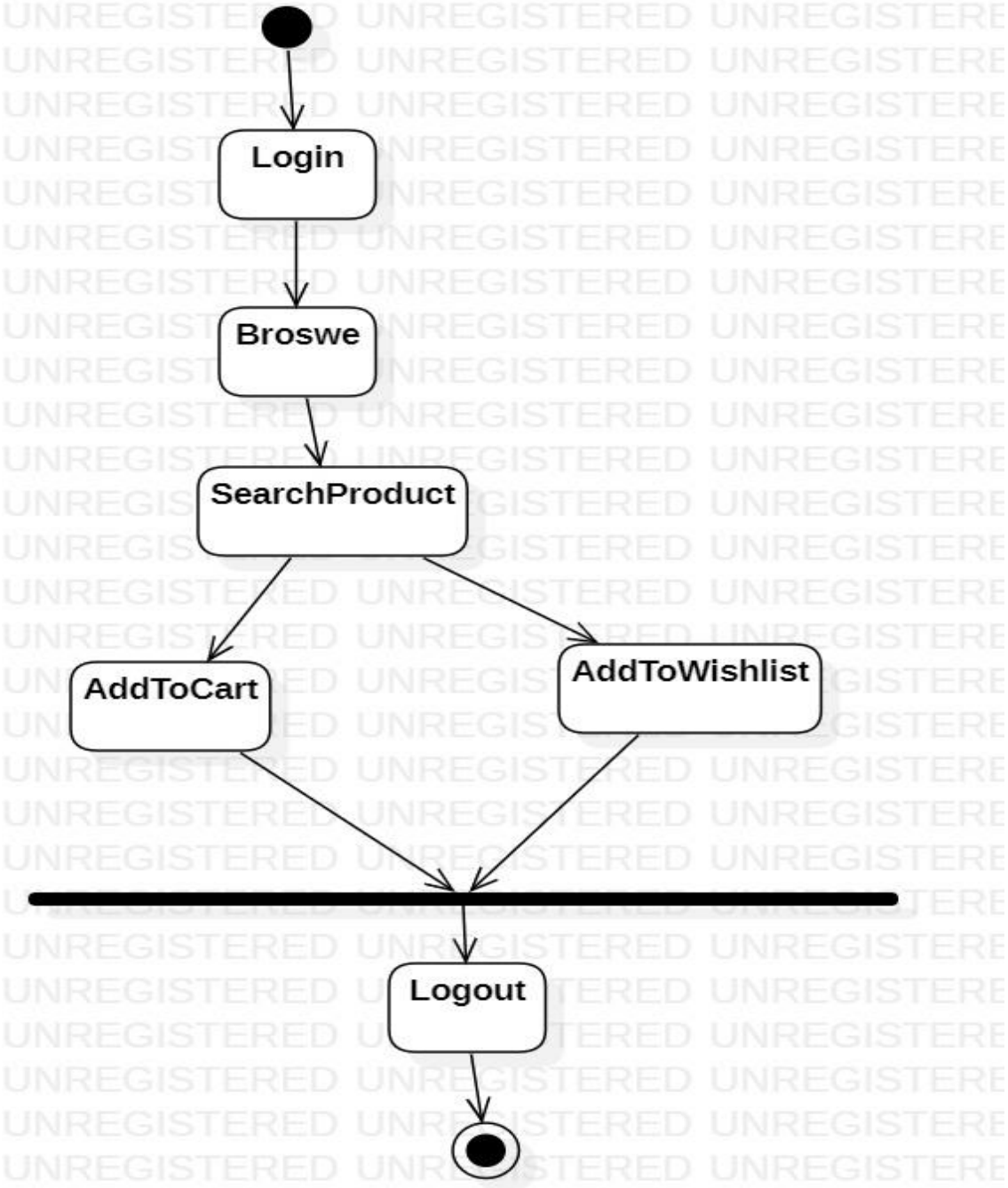
d.Data flow diagram:



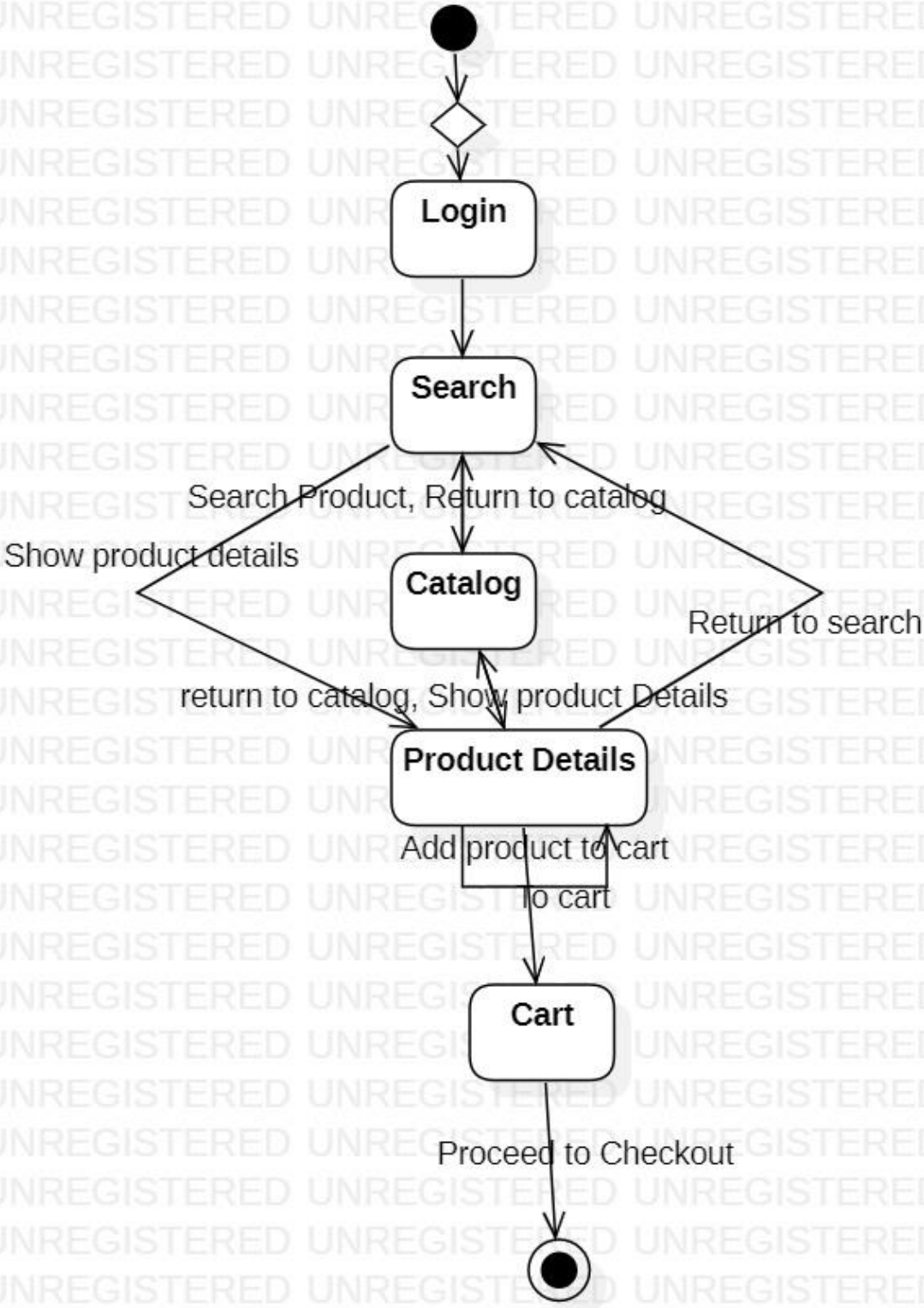
e.Sequence Diagram



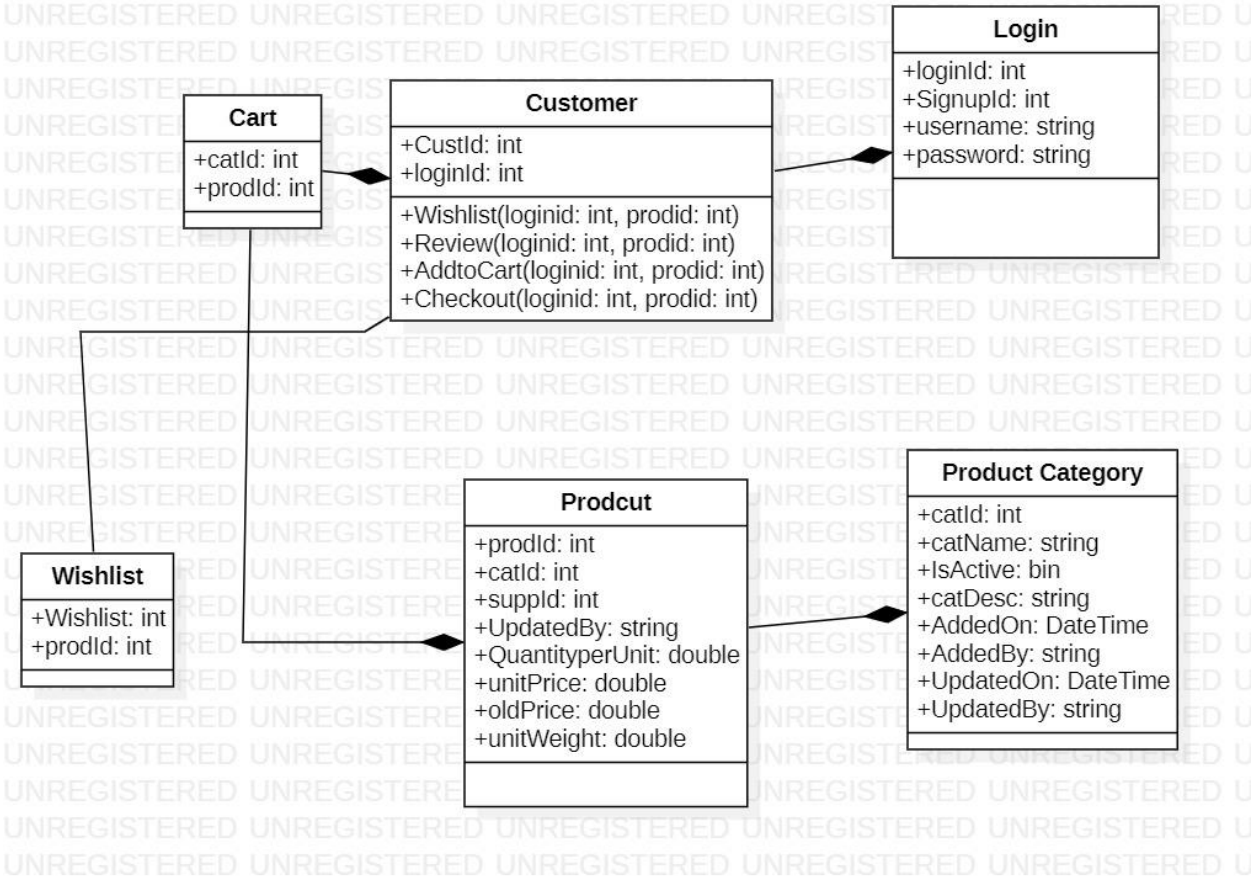
f: Activity Diagram



g: state Chart Diagram



h: Class Diagram



3.1.5 Module 5 complete CRUD Customer Side (Change Product Quantity in Add to Cart View + Check Out + Add Shipment Detail +Update Profile)

A. Description

In this module, we will implement functionality on client side that user can change quantity of products in cart menu. Price will change according to the quantity. Secondly, User can proceed to check out after adding products into his cart. Thirdly, adding shipment detail of user. Lastly, user's (general user, admin) can update their profile except username and password.

B. Usage Scenario/ Use case Description/ Specification:

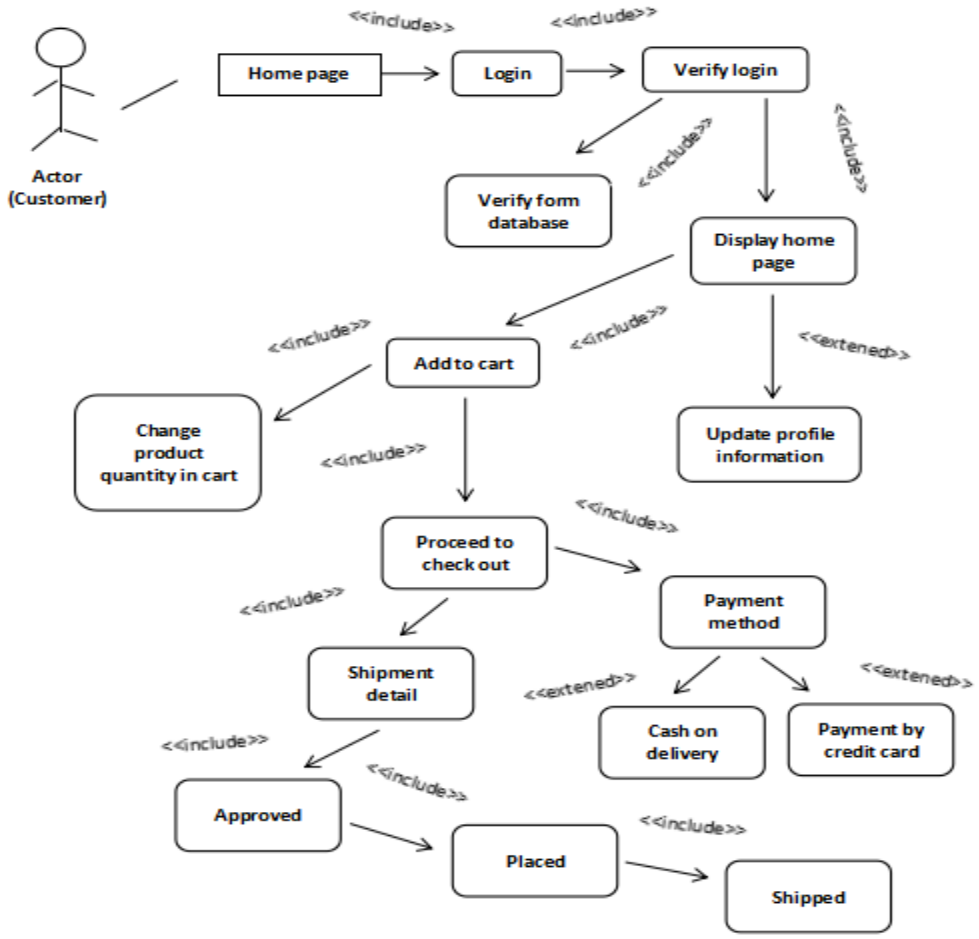
Use-Case Narrative for ECOMMERCE SHOP

Use-Case:	Customer able to buy products and update profile info.	
Primary Actor:	Customer	
Description:	The customer selects the items he or she wishes to purchase, but he or she has to log in first. If he or she is not a register user then they have to sign up first. System will verify their account, and then they can add products in their cart or in a wish list, Once the customer has selected products and they proceed to checkout, they filled their shipment details and select payment method, then the customer products selection as well as their payment method will be verified. Once the products are verified as being in stock and if a customer selects an online payment method, then payment should be received first otherwise a packing order is sent to ware house for it to prepare the shipment. For any product not in stock, a back order is created. On completion, the customer will receive an order confirmation	
Precondition:	The customer submitting an order must be a registered user. The customer has to log in first, if he or she wants to place an order	
Trigger:	This use case is initiated when a customer selects the option to update profile info and place an order	
Typical Course of Events:	Actor Action	System Response
	Step:1 Customer enter login information. **Step:3** Customer add items to shopping cart. **Step:5** Customer update profile info about his/her name, address..Etc.	**Step:2** System display product menu. **Step:4** System display message indicate the item added to shopping cart. **Step:6** If updated information system stores in database

	Step:7 Customer change product quantity. **Step:9** Customer proceed to checkout **Step:11** Customer provide shipping and billing information. **Step:13** Customer receive the items.	which is updated. After purchase one product the payment information stores in current information. **Step:8** System updates in database. **Step:10** System ask user provide shipping and billing information. **Step:12** System confirm the shipping information, process the order and ship out the items.
Conclusion	This use case concludes when a customer receive a notification of order confirmation and profile updating.	
Business Rules	Customer must have a valid address to submit online orders. Customer is billed for products only when they are shipped.	
Open Issues	None.	

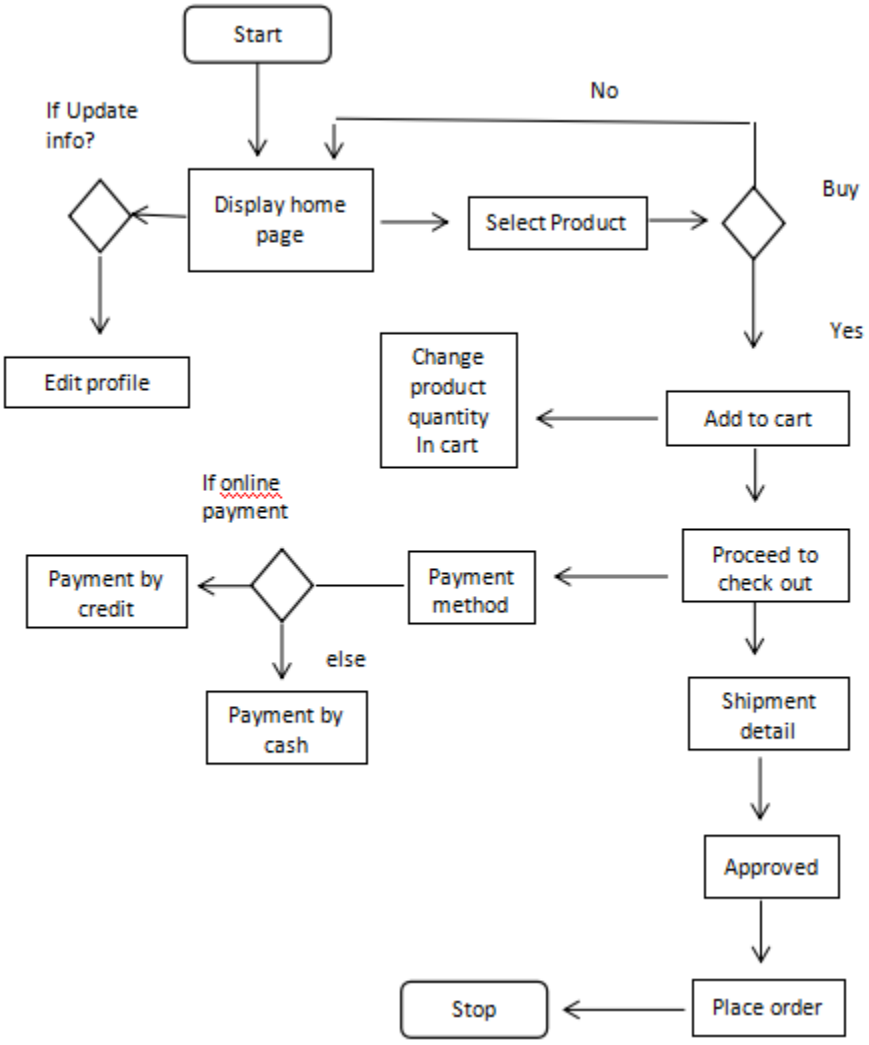
C. Use case Diagram:

USE CASE DIAGRAM OF MODULE - 5



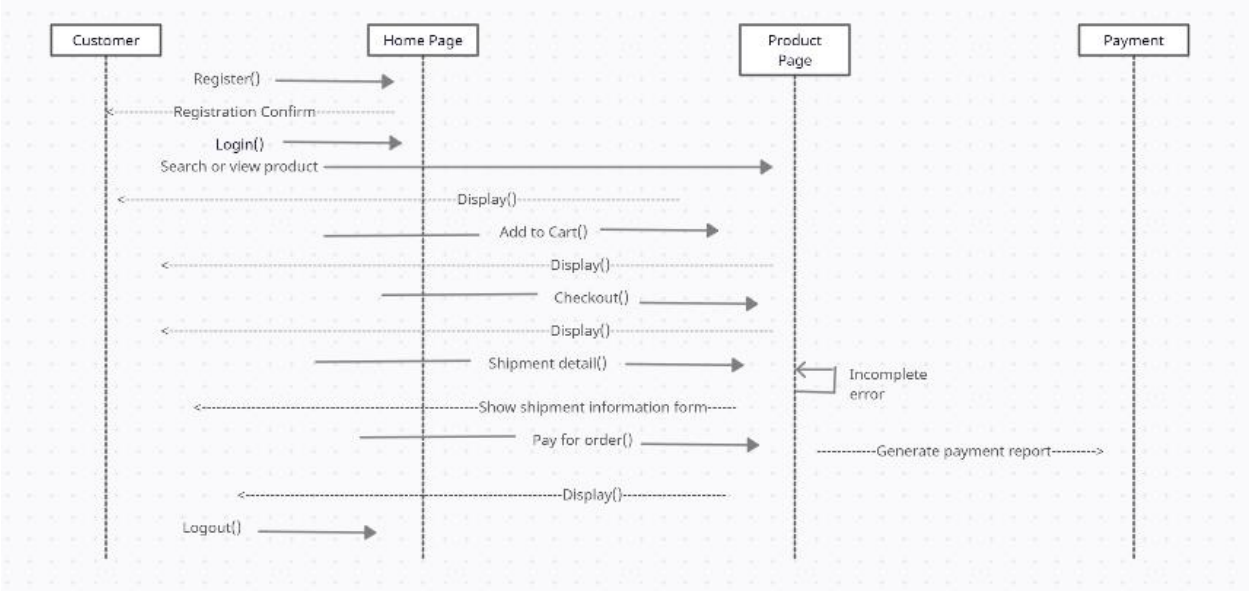
D. Flow of Event or Data Flow Diagram:

FLOW DIAGRAM OF MODULE - 5



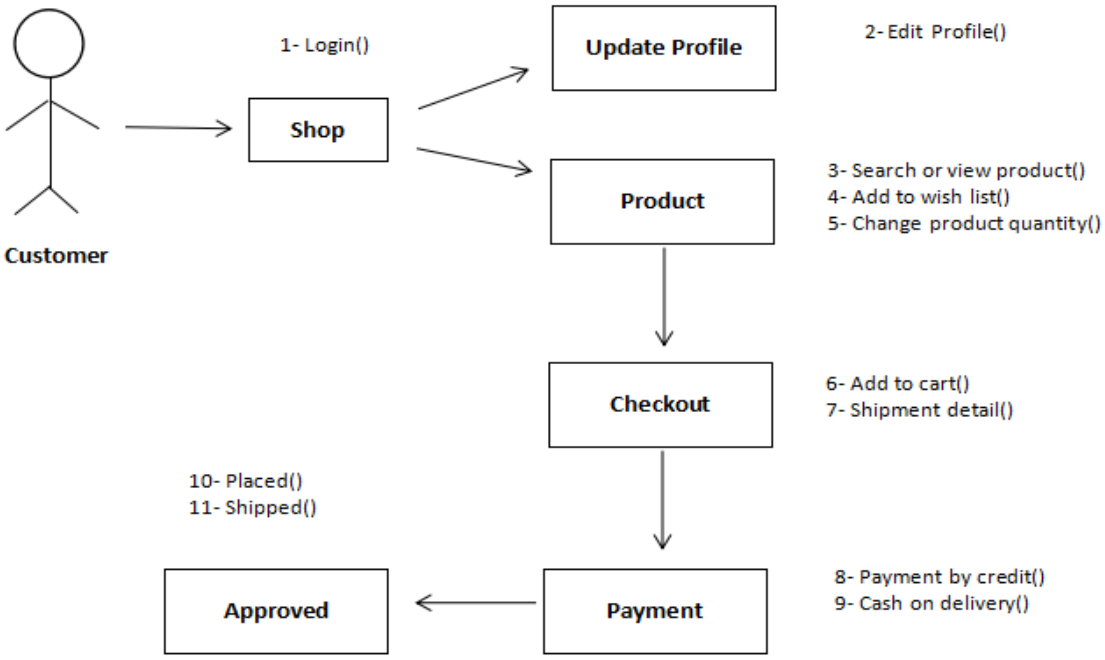
E. Sequence Diagram:

SEQUENCE DIAGRAM OF MODULE - 5



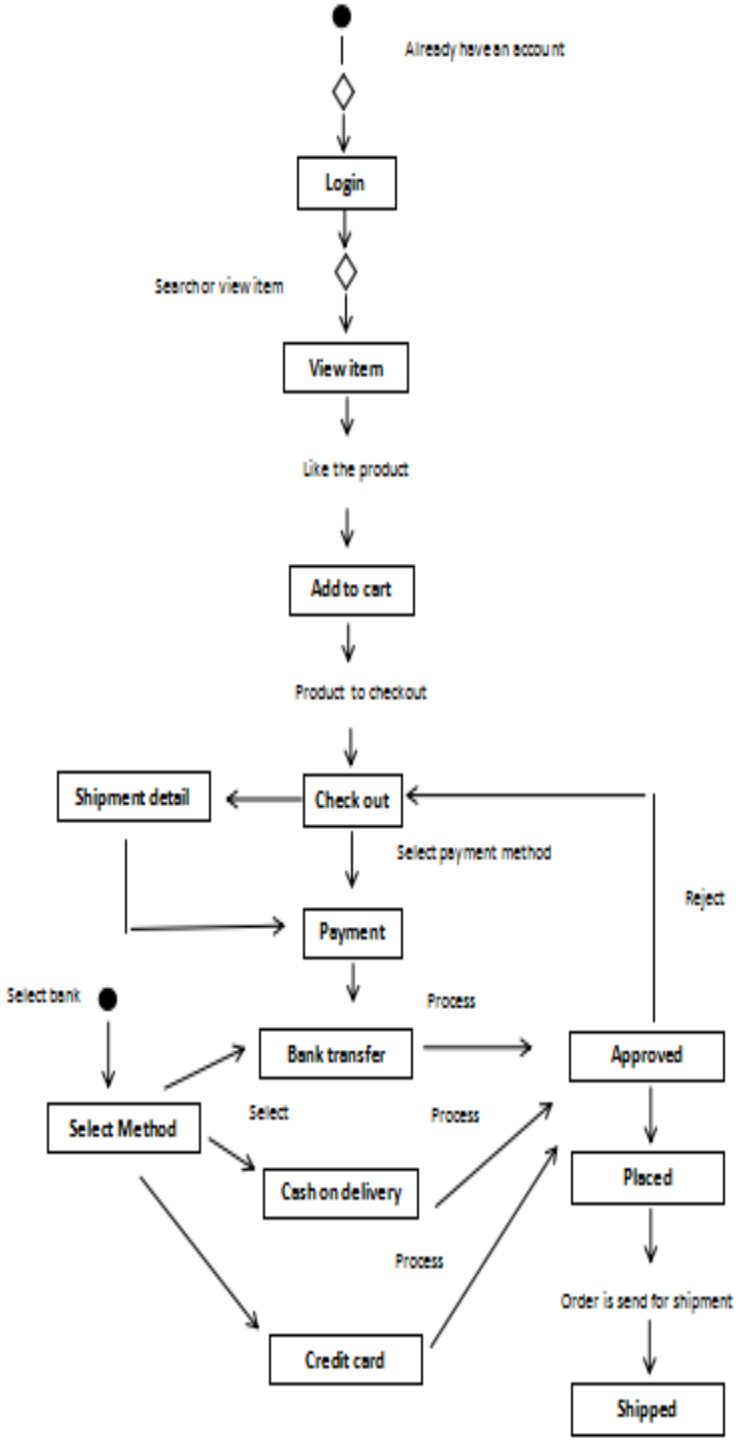
F. Collaboration Diagram:

COLLABORATION DIAGRAM OF MODULE - 5



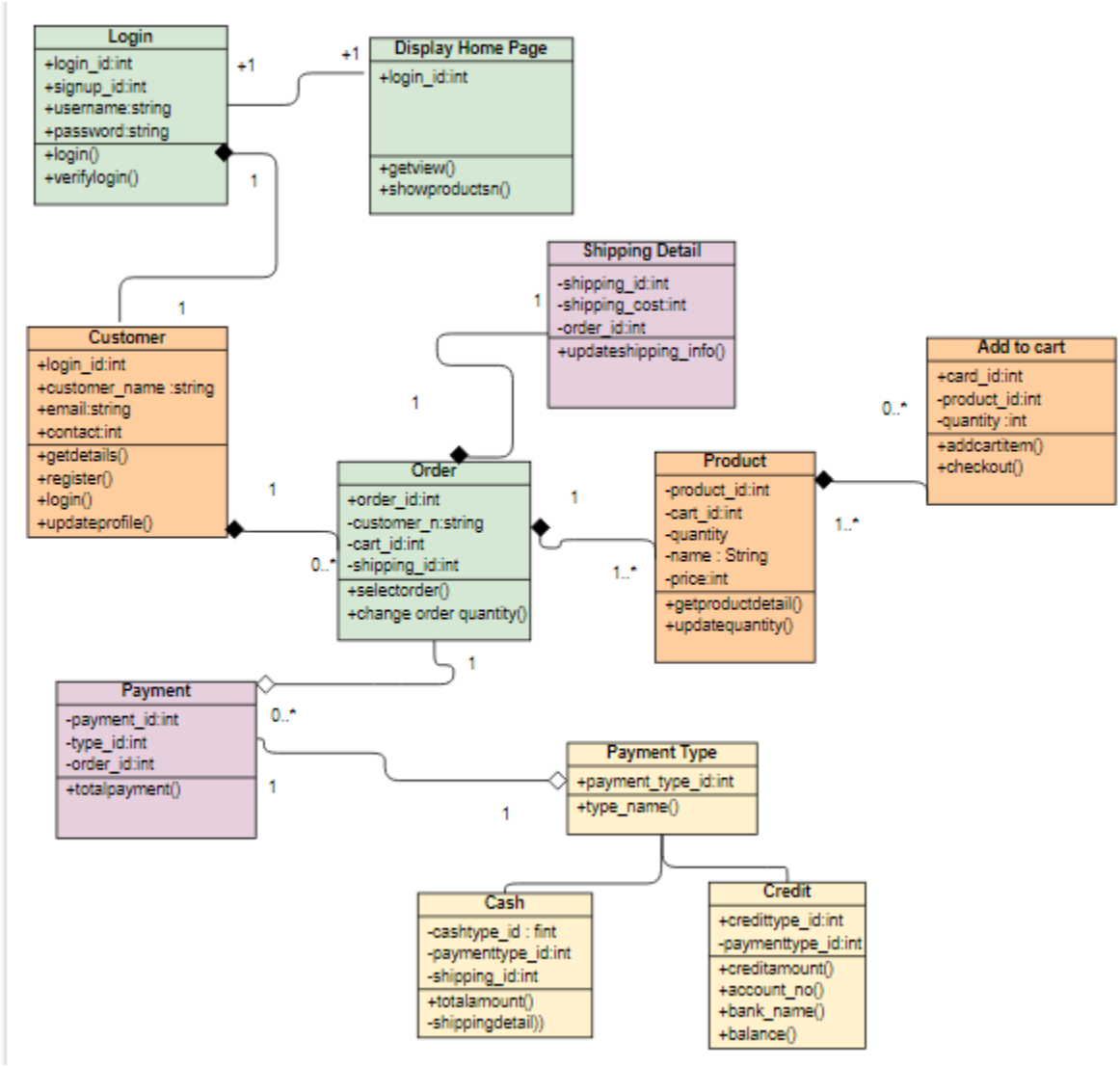
G. State Chart Diagram:

STATE DIAGRAM OF MODULE - 5



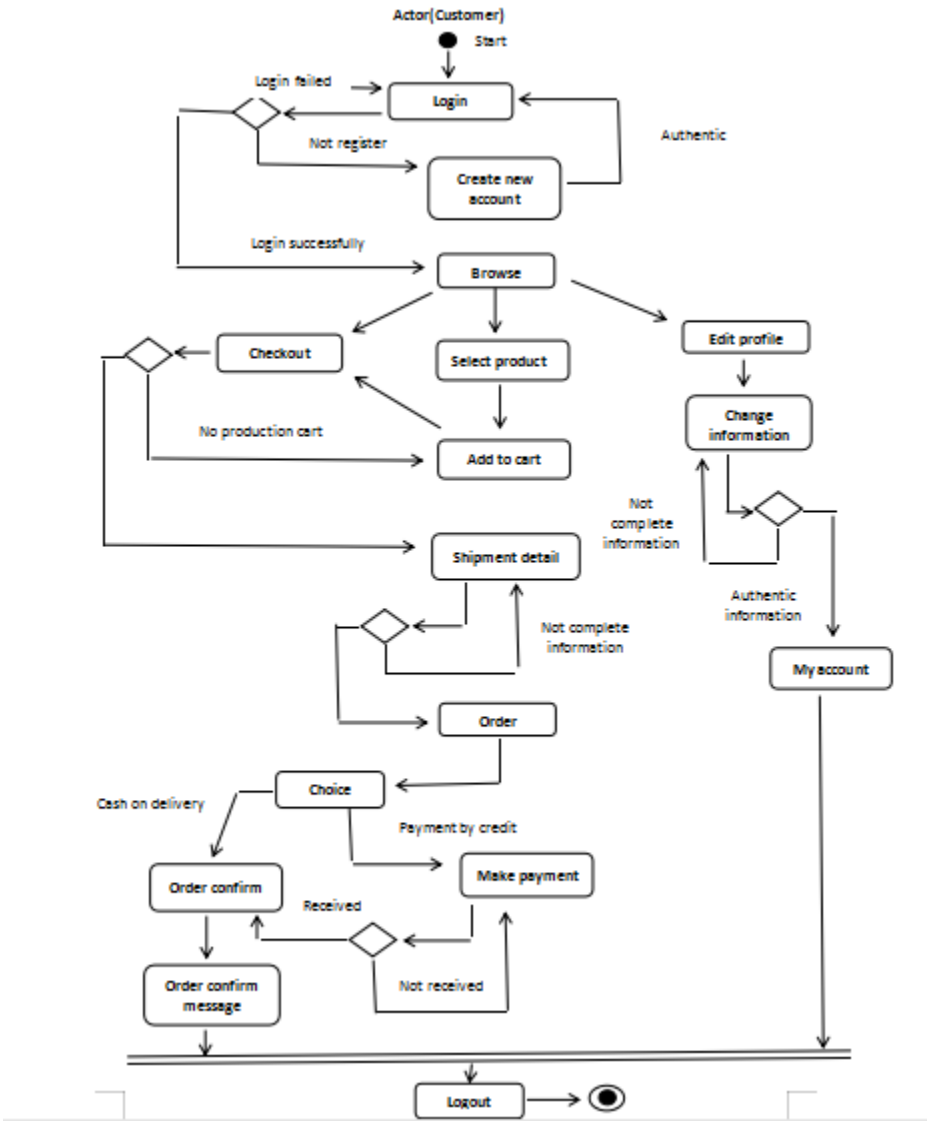
H. Class Diagram:

CLASS DIAGRAM OF MODULE - 5



I. Activity Diagram:

ACTIVITY DIAGRAM OF MODULE - 5



3.2. External Interface Requirements

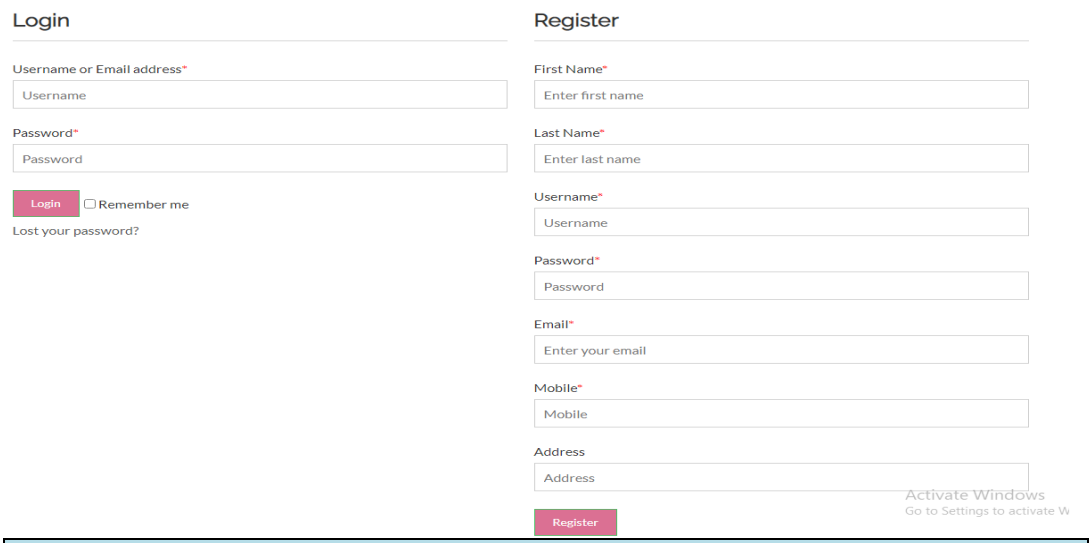
3.2.1 User Interfaces

The user interfaces are divided into two major components. One part includes the user accessing the system using a cell phone or website. The other portion involves when admin accessing the system.

The diagrams and explanations below demonstrate the major transition from one user interface to another. This is a brief description. However, a more detailed demonstration is done in the prototype. The purpose of this interaction is to illustrate the overall view of the ECW.

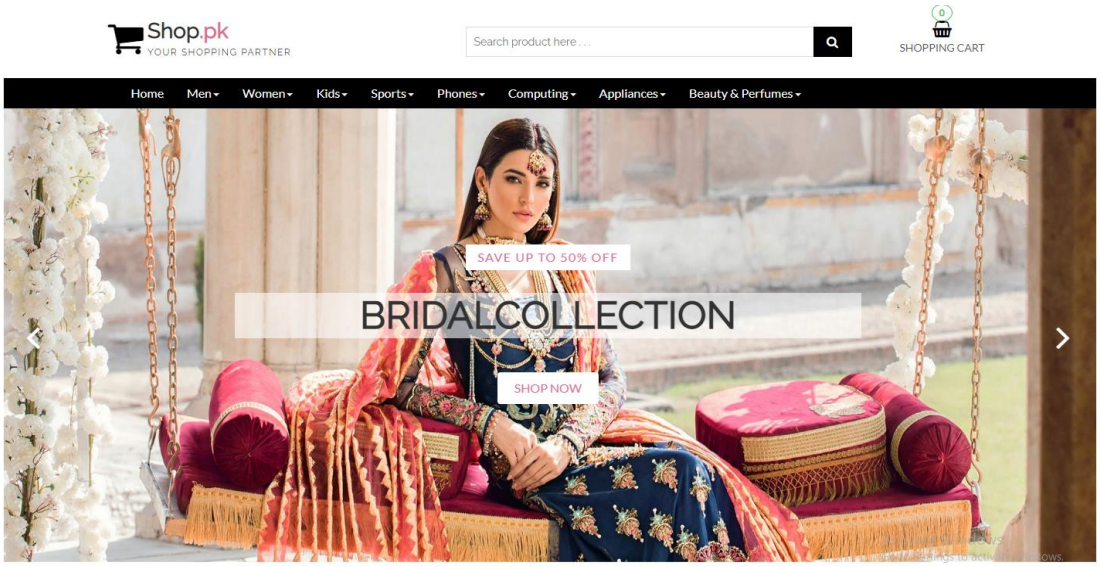
The diagram below illustrates the five **major functionalities or modules**.
MODULE: 01

Login + Sign Up Module Implementation + Customer Side & Admin Side Interface Design



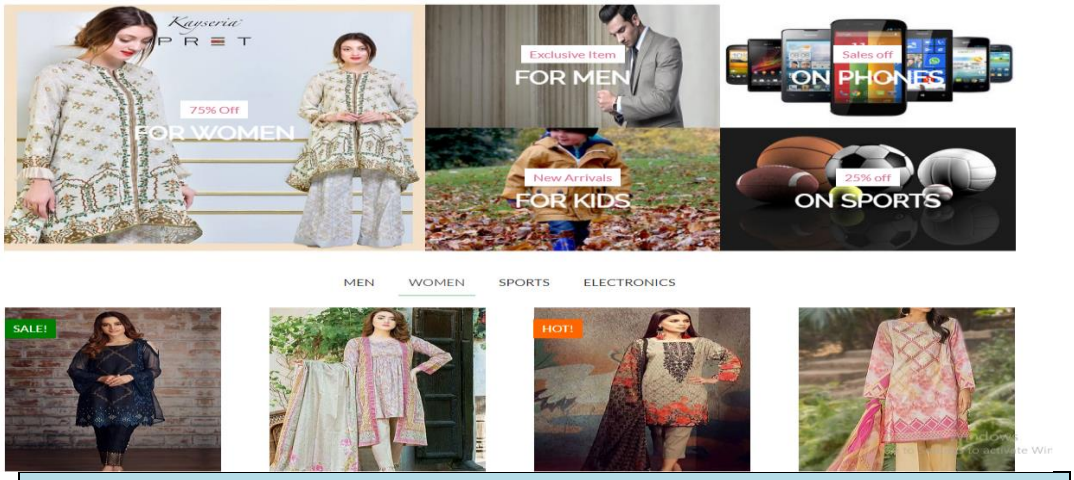
LOGIN/SIGNUP MODULE

Selecting one of these functions will take the user to a different user interface. For instance, choosing Login, firstly user has to provide all required fields such as user name and password. Then user will navigate towards home page of the client side. Similarly, choosing register button, user has to provide all required fields and user will navigate towards the login page to login into his/her account.



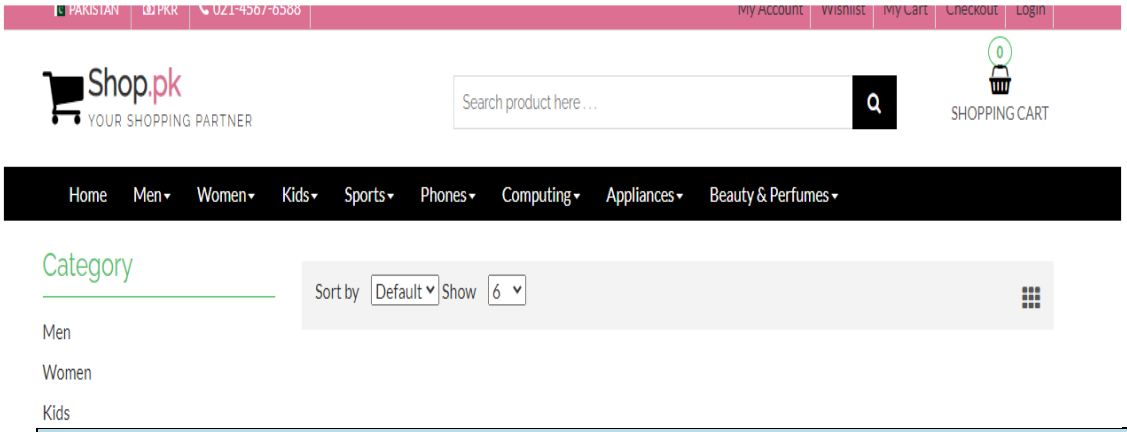
Home Page – I

This is the Home page Slider of Client side, where user can enter using URL of the ECW. This Slider shows five major categories of the web application like bridal collection, Lawn Collection, Watches Collection, Shoes Collection and Jeans Collection.



Home Page Part -II

The above mention is the home page of client side. This part shows the zoom-in hover effect when you hover the mouse over the picture. It also shows available categories in ECW.



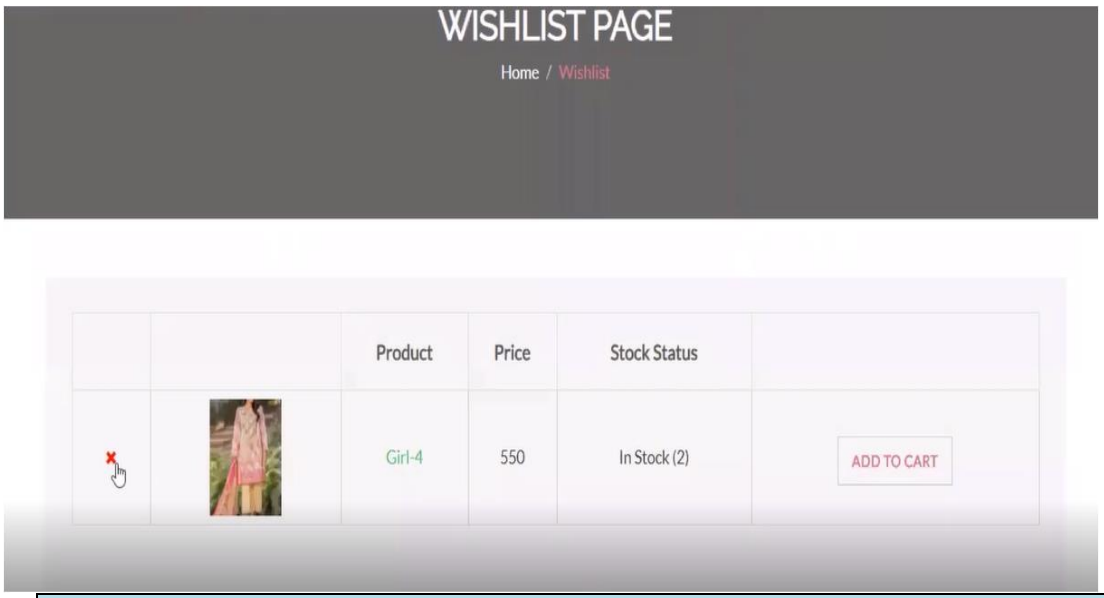
Search Products

After login into client side, user can search hundreds of products available in ECW sort by price and category.

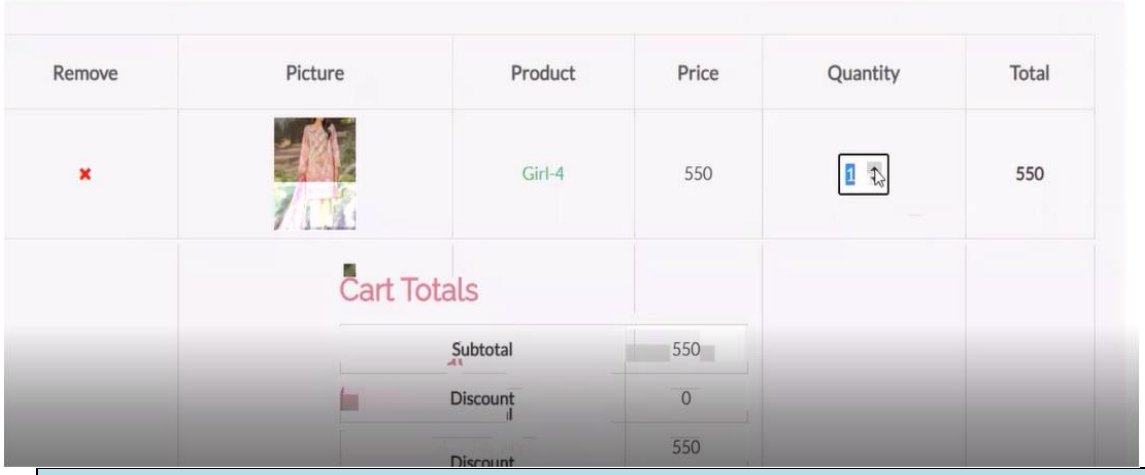
Girl-1

Rs. 550 ~~Rs. 650~~

Using this interface, user can products into his cart or in wish list. User can also view this product to see full description.

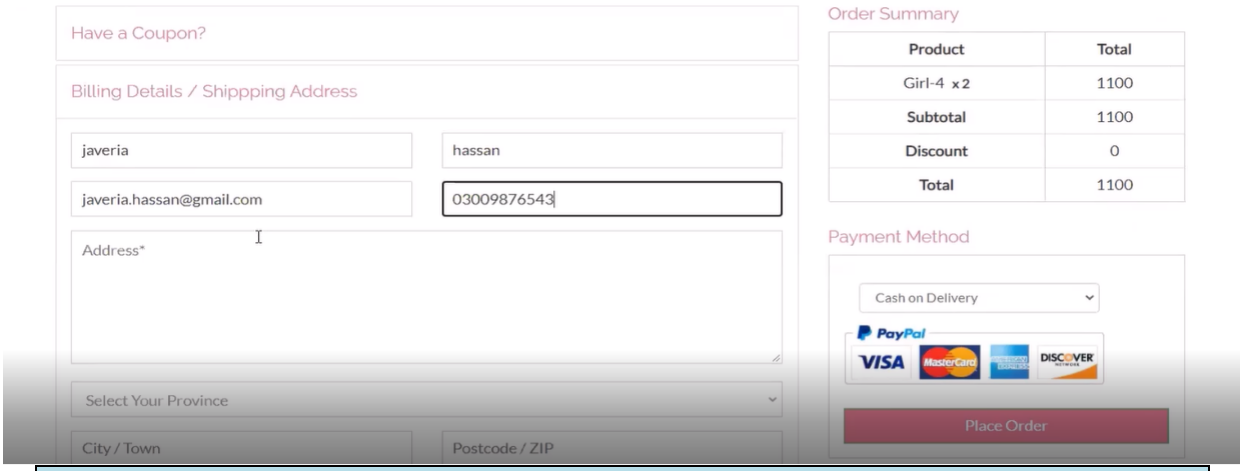


Add/Remove To WISH LIST



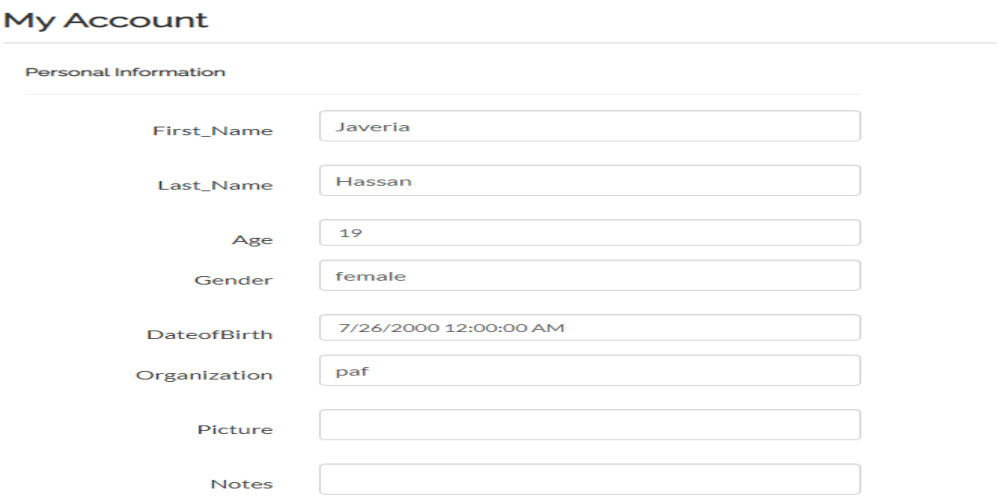
Add/Remove to Cart

The above illustration has shown a brief overview of the user interfaces involved for adding product into wish list and into cart. In cart, user can also change the quantity of the added product. At the end of this page there is button “Proceed to check out”. By clicking on that user will navigate towards shipment detail UI.



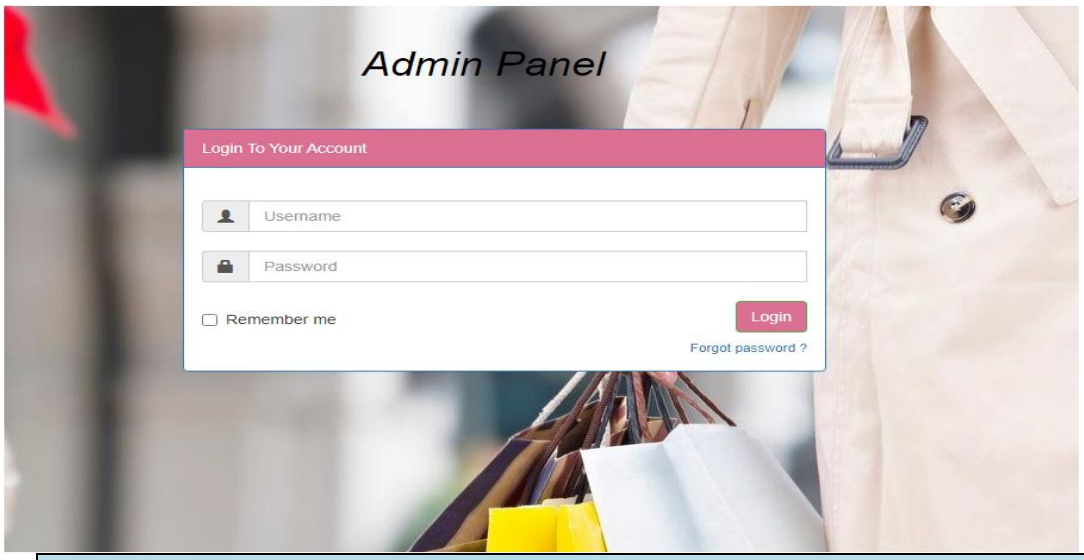
Add Shipment Detail + Check Out

In the above illustration, it has shown that user has to provide all shipment detail, then user has to select payment method, and then user can place order. By clicking on "Place Order" user will navigate towards other UI where user will see that his request of placing an order is successful or not.



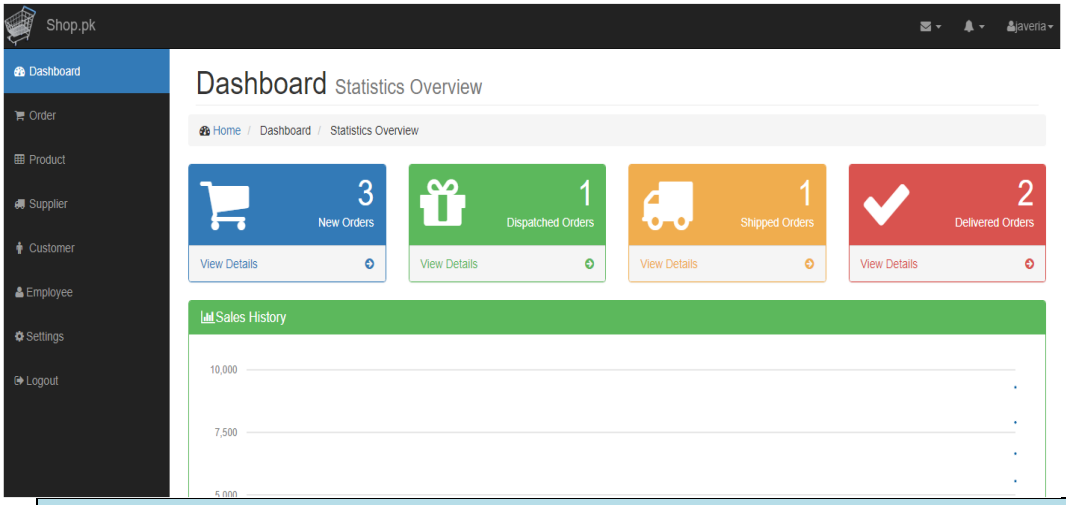
Update Profile

When user will click at the right top most corner of the home page, he will navigate towards My Account UI, where he can update his profile information.



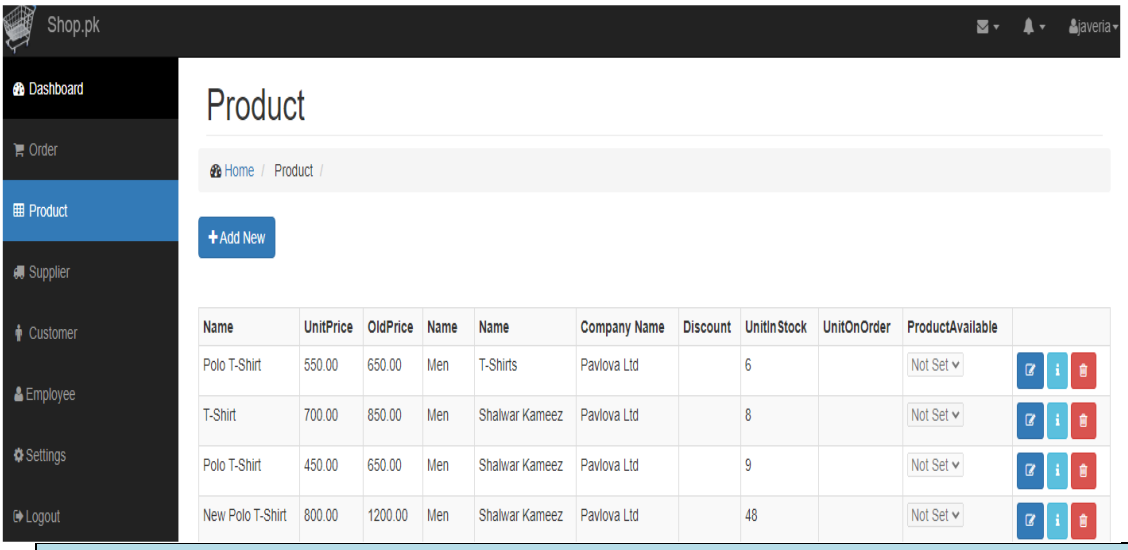
ADMIN LOGIN MODULE

The above interface is the login page for admin login. Only admins are allowed to login on this page. Once admin will provide valid email and password, he/she will navigate towards admin dashboard where he/she can perform several functions like View/Edit/Add products, users, employees, suppliers. Admin can also change the theme of the application. Admin can also update his/her own profile.



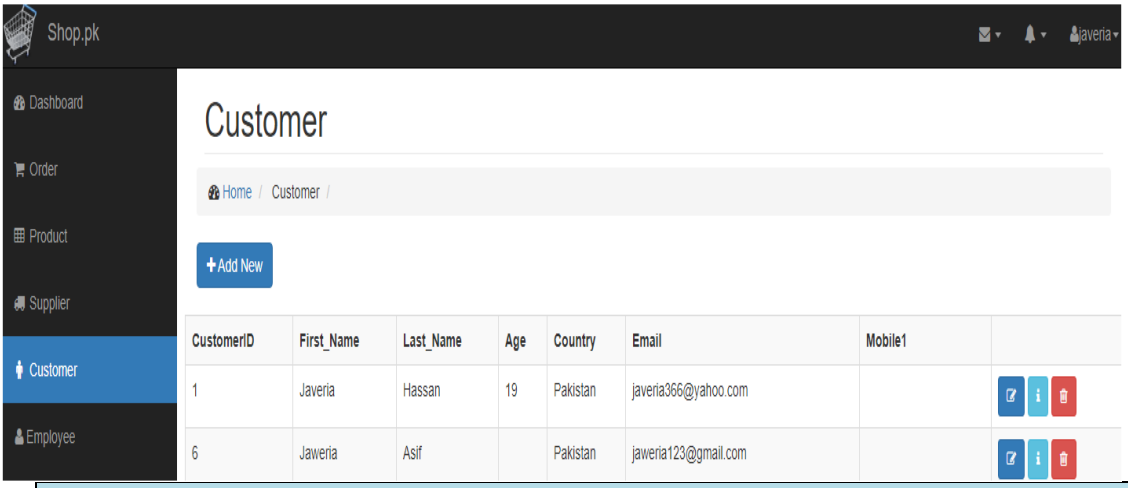
ADMIN INTERFACE MODULE

The above interface is admin's dashboard, where he/she can perform several functions as described above.



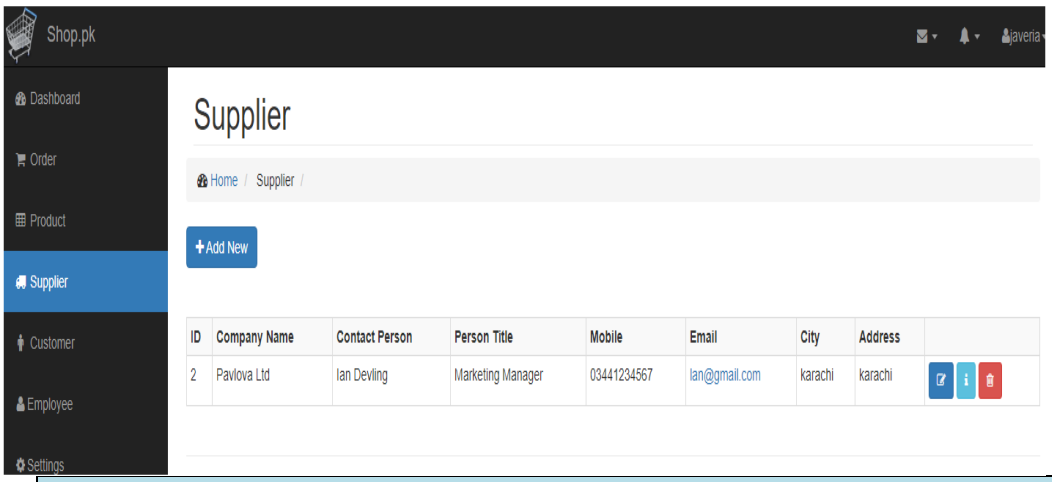
Add/Edit/Delete Product

By clicking on left panel in dashboard, admin can view/edit/add/delete products.



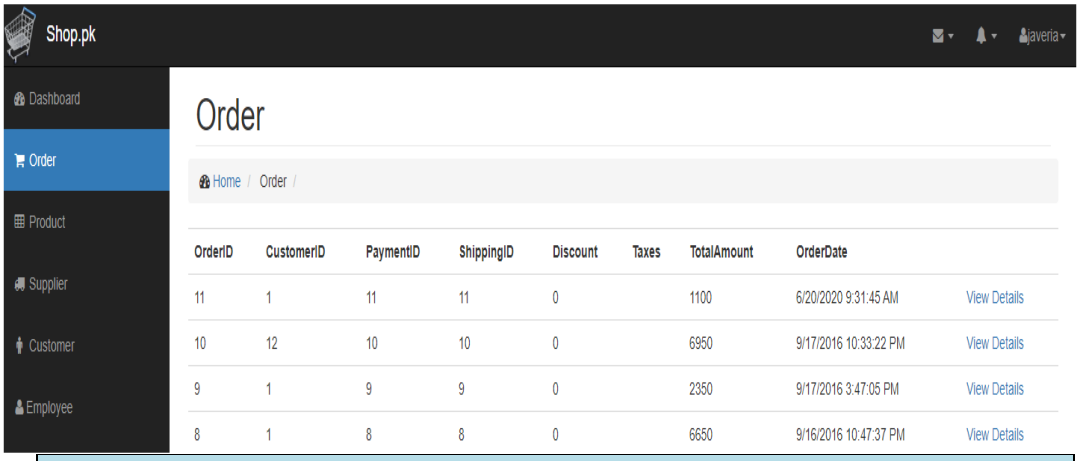
Add/ Delete/ Edit Customer

Similarly, admin can view/edit/delete/add new customer using this above interface.



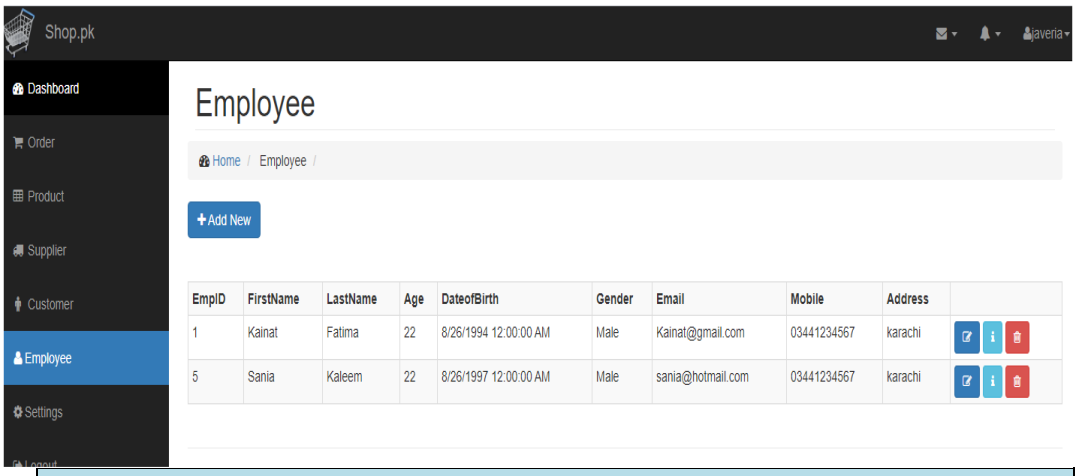
Add/Delete/Edit Supplier

By clicking on supplier, admin can add/view/remove/edit supplier or supplier information.



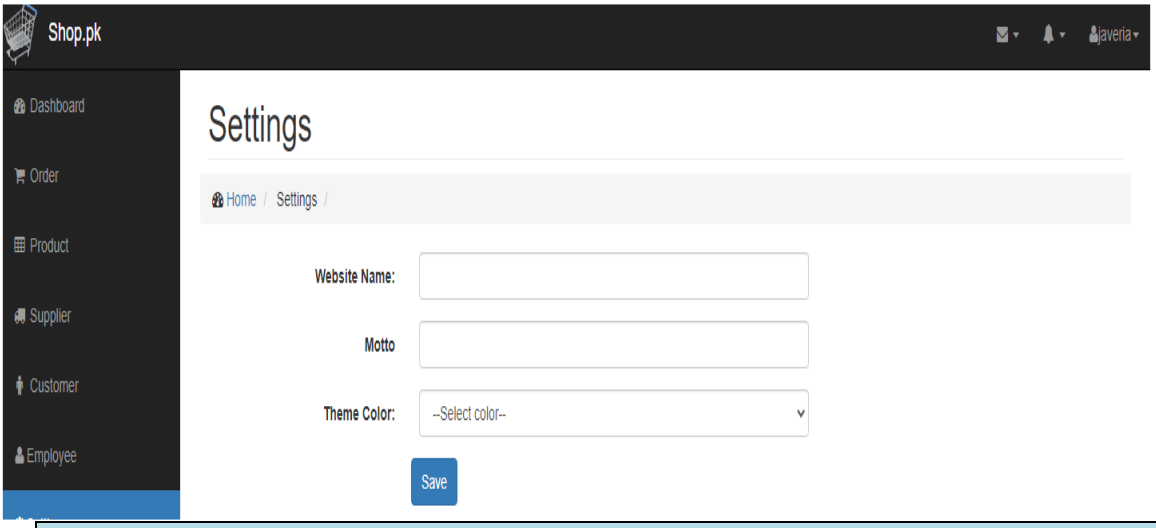
View/Edit Order

Admin can View all new and existing orders using above interface.



Add/View/Edit/Delete Employee

Using above illustration, admin can view/add/edit/remove employee.



Change Theme

Using above UI, admin can change theme of website into dark or lighr mode.

As mentioned earlier, the system can also be accessed through the wireless phones. In that case, the overall system will be the same as the above presentation except that the format will be simplified, since the phones do not have graphic support. The phones will have access to the Make Purchase and User Account, however it is difficult to display the reports and trains information on a small screen for the CRM.

3.2.2 Hardware Interfaces

The ECW includes two major hardware components: cellular phones and regular PC's. The cell phones require WAP (wireless application protocol) network protocol, which is already programmed in the latest phones.

The second component involves the regular PC's, which communicate with the server. The server then communicates with the database. The protocol involved between the PC's and the server is the HTTP protocol, which allows communication between the PC's and the Server. The remote PC's, such as someone accessing the ECW from home using the Internet, are able access the information through the CGI. The requests come in through the HTTP protocol, and using an ODBC the database results are returned and processed using Perl to give an HTML web page. The format of the output is displayed as web pages.

3.2.3 Software Interfaces

A **SQL DBMS** will be used to manage the database and any changes made to it. Furthermore, the DBMS will make regular backups of the database and generate reports regularly so that they can be accessed by the CRM. Secondly, **Visual Studio** will be used to implement client and admin side. Furthermore, the HTML pages must be implemented such that they can be displayed on two common browsers: **Chrome** and **Internet Explorer**.

Information about the products used for the ECW:

(1) Name: Structured Query Language
(2) Mnemonic: SQL
(3) Version Number: 2012
(4) Source: IBM Corporation, Inc.

(1) Name: Visual Studio
(2) Mnemonic: Visual Studio
(3) Version Number: 2015
(4) Source: Microsoft

(1) Name: Internet Explorer
(2) Mnemonic: IE
(3) Version Number: 5.00
(4) Source: Microsoft

(1) Name: Google
(2) Mnemonic: Google
(3) Version Number: 88.0.4324.104
(4) Source: Google Corporation, Inc.

3.3 Performance Requirements

The following sections list the performance requirements for the system.

3.3.1 User Requirements

User Requirements	**Description of Requirement For Design Environment**
Location(s) and Number(s) of Users	Pakistan
Expected Growth in Number of Users	50 users per month
After 1 Year	50%
After 2 Years	TBD
After 3 Years	TBD
User Expectation	
Interactivity	User expect that it provides a very easy to use graphical user interface
Reliability	For some applications, reliability must be 100% during the application session
Adaptability	Network must adapt to user additions, deletions and changes
Security	Encryption software would be used for Credit Card transactions (Not implemented) Security is not a concern for this project
Cost / Funding	Less than $250K (Not implemented, No paid hosting buys yet)

3.3.2 Application Requirements

Since no specified service is indicated, then we have listed the applications as best – efforts. This may change as we learn more about the application.

The communication package is determined to be bur sty in nature, with small data sizes and frequent transmissions. We can consider this application to be interactive-burst, while the database transaction-processing application is described by the CRM as transferring large amounts of data (initial estimates are 1 MB/transaction), we have listed this application as interactive-bulk.

Categorizing Applications	Best-Efforts	Application Locations
Communication	100 Kb/s	Pakistan
Database Access	400 Kb/s	All Locations
Database Transaction processing	1.5 Mb/s	All Locations

3.3.3 Host Requirements

	Type of Host or Equipment	Numbers and Locations
Host A	PC	Dell Latitude E6410
Host B	Database Server	Pakistan
Host C	Application Server	Pakistan

3.4.1 Standards Compliance

There are no design constraints that can be imposed by other standards limitations.

3.4.2 Software Limitations

- must be able to run Internet Explorer or Chrome web browsers to access the system.
- must have cell-phone web based capability to access the system from a mobile phone.

3.4.3 Hardware Limitations

- Input/Output: One or two-button mouse, keyboard, cell-phone, or touch screen required.
- Network card required at thin-client terminals to make communication with server possible.

3.5 Quality Characteristics

There are a number of quality characteristics that apply to the ECW software system.

3.5.1 Portability

The ECW system will be developed using HTML and C# so that it can be accessed from any type of system using just a regular web browser. It will also be available to users that have web access on their cellular phones. The system will be tested on all types of hardware before being released to ensure that is it compliant with this requirement.

3.5.2 Reliability

The system should be capable of processing a given number of purchasing within a given time frame with no errors and the system should be available and operational all the time. During the development of the prototype, the system will be tested in its actual environment to ensure that it can handle the load of purchasing orders that occur during a regular workday.

3.5.3 Usability

The ECW system will be developed so that it is an easy to use system that requires the least amount of user input possible. Every input will be validated. The user should only have general computer use knowledge. Error messages will be displayed if the user enters an invalid value or tries to access a function without the required permissions. An easy and well-structured user manual will be provided to the CRM and the system will include descriptive help for all operations allowed.

3.5.4 Correctness

The ECW system will be considered correct when the CRM approves the prototype presented and agrees that all the functions they require are implemented as stated in the Software Requirements Specification.

3.5.5 Flexibility

The ECW system should be developed in such a way that it is easily customizable. If new functions are required by CRM, there will be little effort required to update the system to support new features.

3.5.6 Security

The ECW system should not compromise the customer information at any time. The user information will never be sold to other parties and will be kept secure at all times. Users will be authenticated to ensure that no unauthorized users gain access to private information. [This highlighted part is not implemented]

3.5.7 Maintainability

The ECW source code will be kept well structure and documented so that it is easier to maintain and extend the system. All changes to the system shall be documented.

3.6 Other Requirements

Certain requirements may, due to the nature of the software, the user organization, etc., be placed in separate categories such as those below.

3.6.1 Data Base

The E-Commerce Web Application System will have one main database which named as “Shop.Pk”. This database will be created with SQL (Client/Server) version 2012. The following are the requirements for these databases that are to be developed as part of the product. They include:

E-COMMERCE Database

Types of information	Store Information of accounts Register and Login, Product Categories, Number of Products, Number of Orders, Cart Products, Wish List Products, Employees, Suppliers, Recently Viewed Products by user, Payment Methods, Payment Types.
Frequency of use	Depends on the user demand, which may reach 25 per day.
Accessing capabilities	The database should allow access to at least 32767 people at once; the users will have a general access to the information about the train schedule, and a secure access to the reports (available only to CRM officials) using a username and a password
Data element and file descriptions	To be determined
Relationship of data elements, records and files	To be determined
Static and dynamic organization	To be determined
Retention requirements for data	Train schedule information will be available as long as the train for a particular route is in use and at least one year after the train has been cancelled. The reports information will be available at least for 5 years

3.6.2 Operations

The normal operations required by the user can be viewed as the following:

User-initiated Operations:

These operations include the login operation, which is initiated by the users. A user can be part of ECW by filling up the form of registration. After that a user can includes products into wish list or card and can change, and view products, as well as paying for the product which has been purchased by the users. The user can see the details of purchase products.

Interactive Operations and Unattended Operations:

The users initiate all the operations mentioned above, and almost all of them are somehow interactive. In ECW there are no non-interactive operations. Except, when the user purchases a product and before checkout a Layout open which shows the message of THANK-YOU to the user, so for user it is an interactive operation.

Data Processing Support Functions:

The user account data is used to create new accounts, as well as to validate user id's during login functions. For purchasing, viewing, searching products, user input, user account data, and available products data are used, and processed. User data along with final results of user interaction (whether the user purchased a product, number of products bought, etc.) are collected, and used for generating invoice purposes. Administrative users' inputs are collected in order to view the products that are being sold.

Backup and Recovery Operations:

The database used, Shop.pk is production database. The main operation used for the backup and recovery is SQL's built-in backup and hosting database on free domain Somee.com. By these both methods, we back up our database.

3.6.3 Site Adaptation Requirements

There are no site adaptation requirements for this project.

4. Supporting Information.

There is no supporting information required for this project.