Supply Chain Management System

A project submitted to

UKA TARSADIA UNIVERSITY

in partial fulfillment of the requirements for the degree of

Bachelor of Science

in

Information Technology

for

5 Years Integrated M.Sc.(IT)

By

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Uka Tarsadia University
Bardoli – 394350
December 2020

CERTIFICATE

This is to certify that **Bhadreshkumar A. Ghevariya (201806100110097) & Yash M. Dhameliya (201806100110110)** has submitted project entitled "**Supply Chain Management System"** as the partial fulfillment for the award of the degree of Bachelor of Science in Information Technology for 5 Years Integrated M.Sc.(IT) in 2020 – 2021.

Date:

Place:

Foram Baweja
Guide

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Programme Coordinator,

External Examiner

UKA TARSADIA university

Babu Madhav Institute of Information Technology,

Uka Tarsadia University,

Bardoli – 394350

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1. Introduction

1.1. Problem Definition

Many times, it becomes difficult to manage all data of the distribution of products for the company. It is also hard to retrieve and store accurate data manually.

It also leads to misunderstanding in business and other mistakes that can be done by humans. Therefore, this system will make distribution more efficient by providing facility to manage all data in structured way. It also helps distributor to keep record of inventory in his/her warehouse.

1.2. Initial Requirement Document

Title of the project	Supply Chain Management System (Electronic accessories)
Stakeholders involved in capturing requirement	Project Guide and myself.
Techniques used for requirement capturing	Brain Storming
Name of the person along with a designation	Bhadreshkumar Ghevariya(Myself), Foram Baweja(Project Guide)
Date	10th August 2020
Users of the system	Admin, Distributor, Sales Person/Shopkeeper, Delivery Person, Visitor.
Version	1.0
Consolidated list of initial requirements	
Req #1	All users can view the details of products.
Req #2	The distributor shall be able to request for registration.
Req #3	Administrator shall be able to accept or reject application for registration of distributor.

Req #4	Distributor shall get system-generated mail whenever administrator accepts or rejects application of registration.
Req #5	Sales person/Shopkeeper shall be able request for registration.
Req #6	Sales person/Shopkeeper shall get system-generated mail whenever administrator accepts or rejects application of registration.
Req #7	All users must be authenticated by system before allowing them to make changes in system.
Req #8	Authenticated users shall be able to search distributors by area and city.
Req # 9	Administrator must be able to manage products in system.
Req #10	Registered users shall be able to place an order for available products in system.
Req #11	Bill for particular order shall be sent to distributor via email whenever distributor places order.
Req #12	Distributor shall be able to manage inventory in warehouse.
Req #13	System shall notify distributor whenever inventory of particular products is becomes unavailable in warehouse of that particular distributor.
Req #14	Registered sales person/shopkeeper can place order for products.
Req #15	Distributor shall get notification whenever a sales person/shopkeeper places order.
Req #16	Bill for particular order shall be sent to registered user via email whenever they places order.
Req #17	Delivery person shall be able to see order details.
Req #18	Delivery person shall be able update order status to delivered or not-delivered.
Req #19	Registered users shall get notification/email whenever delivery person updates status of order.
Req #20	Distributor shall be able to view all orders of Sales person/shop keeper.

Req #21	Sales person/shopkeeper shall be able to view their previous orders.
Req #22	Sales person/shopkeeper shall be able to view their pending payment details.
Req #23	Sales person/shopkeeper shall be able to complete payment via payment gateway.
Req #24	Sales person/shopkeeper shall be able to view payment receipt(s).
Req #25	System shall be able to generate reports like. a. Sales report. i. Sales person/shopkeeper. ii. Distributor. b. Monthly bill for item ordered. i. Sales person/shopkeeper. ii. Distributor. c. List of distributors. i. City wise. d. List of sales person/shopkeeper. i. Area wise. ii. City wise.

1.3. Project Objective

Distribution Management System helps organization to keep records of distribution of their products. It also makes distribution process seamless and effective. For distributors the system will make it easier to keep records of inventory and reduce their overall cost.

1.4. Project Scope

- This system can only use to manage distribution in the one particular state.

2. Product Perspective

2.1. Software Specification

- Windows OS 10 or Higher
- Development Tool: Apache NetBeans IDE 12.2
- Frontend: PHP
- Backend: Microsoft SQL server
- Any Web Browser

3. System Planning

3.1. Software Engineering Model

- Waterfall

4. System Specific Requirements

4.1. Functional Requirements

- **Registration and Login**

RN	Description	Comments
FR1	➢ The Distributor and the salesperson/shopkeeper shall be able to apply for registration. The Distributor and the salesperson/Shopkeeper requires the following details to apply for registration: o The distributor needs to add the following details: ▪ Name ▪ Date of Birth ▪ Warehouse address. ▪ City ▪ Contact Number ▪ E-mail address o The salesperson/shopkeeper needs to add the following details: ▪ Name ▪ Date of Birth ▪ Shop address ▪ ▪ City ▪ Contact Number ▪ E-mail address	Registration Form
FR 2	The Administrator shall be able to view the application of registration of the distributor.	View registration request page.
FR 3	The Administrator shall be able to accept or reject the application of registration of the distributor.	View registration request page.
FR 4	The Distributor shall be able to view the application of registration of the salesperson/shopkeeper.	View registration request page.
FR 5	The Distributor shall be able to accept or reject the application of the registration of the salesperson/shopkeeper.	

FR 6	The Distributor or the Salesperson/Shopkeeper shall get a system-generated email, Whenever the Administrator or the Distributor accepts or rejects the application of the registration.	System-generated email
FR 7	The system shall allow all users to log into their account by accepting the correct username and password.	Login form

- **Manage Product**

RN	**Description**	**Comments**

FR 1	The Administrator shall be able to add products.
	• The Administrator needs to add the following details:
	  • Product id
	  • Product name
	  • Product type
	  • Product description
		Add product form

FR 2	The Administrator shall be able to update product details.	Update product form
FR 3	The Administrator shall be able to delete the product.	Delete product(s).
FR 4	The Administrator shall be able to view products.	View products.

- **Manage Inventory**

RN	**Description**	**Comments**
FR 1	The Distributor shall be able check inventory in his/her warehouse.	Check inventory.
FR 2	The Distributor shall be able to update stock in his/her warehouse.	Update/Add stock.
FR 3	The system shall notify the distributor whenever any product in inventory becomes unavailable.	

- **Manage Orders**

RN	Description	Comments
FR 1	The Salesperson/Shopkeeper shall be able to place an order of available products.	Place order.
FR 2	The Salesperson/Shopkeeper shall get the system generated email with a invoice of order.	Invoice of order on email.
FR 3	The Distributor shall be able to view orders placed by the Salesperson/Shopkeeper and generate bill along with delivery details.	View active orders.
FR 4	Whenever the Distributor generates the bill of any order than the products in the stock should be reduced.	
FR 5	The Salesperson/Shopkeeper shall be able to view their previous orders.	View previous orders.
FR 6	The Distributor shall be able to view all orders of the Salesperson/Shopkeeper.	View orders

- **Delivery**

RN	Description	Comments
FR 1	The delivery person shall be able to view the delivery detail of a particular order.	View delivery details.
FR 2	The delivery person shall be able to update the delivery status of the order to delivered or not-delivered.	Update delivery status.
FR 3	The Salesperson/Shopkeeper shall get system generated email whenever the delivery person updates the delivery status.	

- **Payment**

RN	Description	Comments
FR 1	The Salesperson/Shopkeeper shall be able to view their pending payment details.	View pending payments.
FR 2	The Salesperson/Shopkeeper shall be able to complete their pending payment using a payment gateway.	Complete payment through payment gateway.
FR 3	The Salesperson/Shopkeeper shall get a payment receipt whenever the Salesperson/Shopkeeper completes payment successfully.	Email payment receipt.

- **Generate reports**

RN	Description	Comments
FR 1	The Administrator shall be able to generate the following reports: • Sales report of the Distributor. • List of the Distributor.	
FR 2	All logged-in users shall be able to generate the following reports: • List of the Salesperson/Shopkeeper. o Area wise. o City wise.	
FR 3	The Distributor and the Administrator shall be able to generate the following reports: • Sales report of the Salesperson/Shopkeeper.	

4.2. Nonfunctional Requirement

- **Usability:**

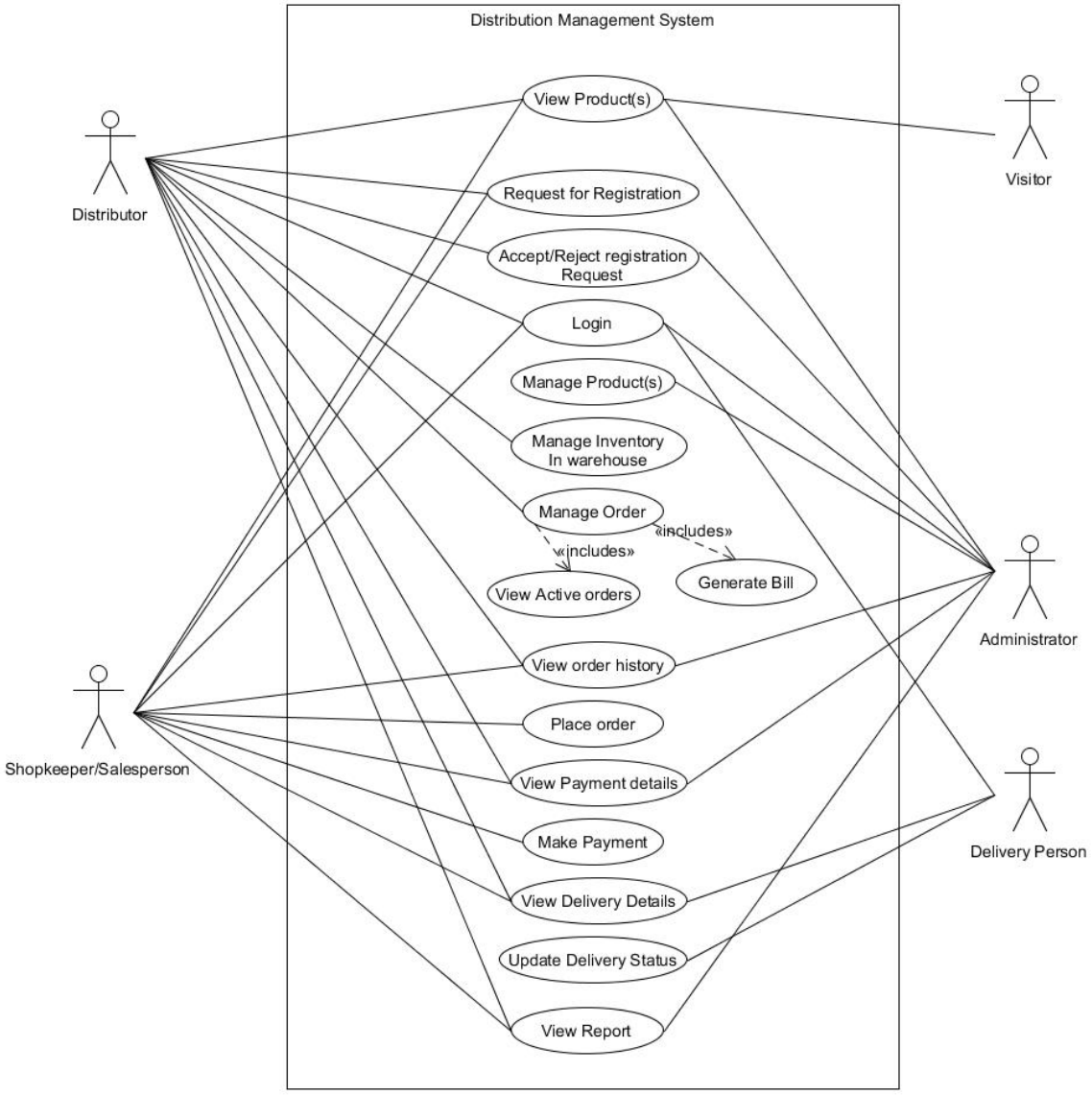
  The System will be user-friendly and easy to operate, and the functions will be easily understandable.

- **Security:**

  The System will be password protected. Users will have to enter the correct login ID and password to make changes in the system.

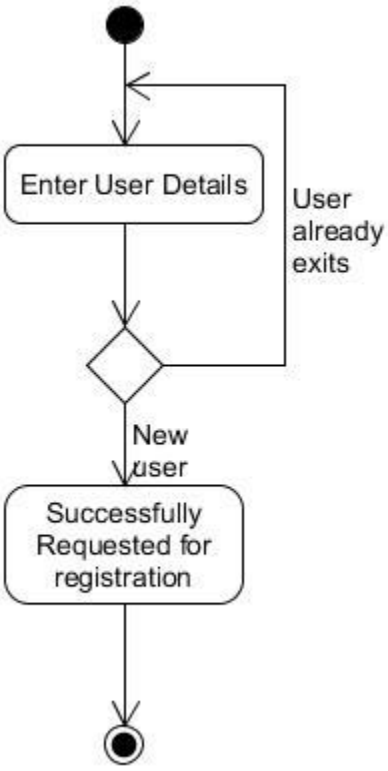
5. System Analysis

5.1. Use case Diagram

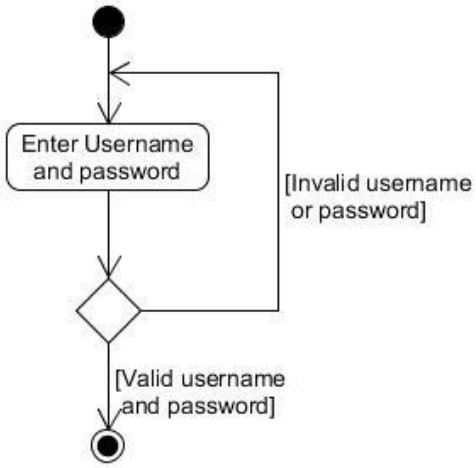


5.2. Activity Diagram

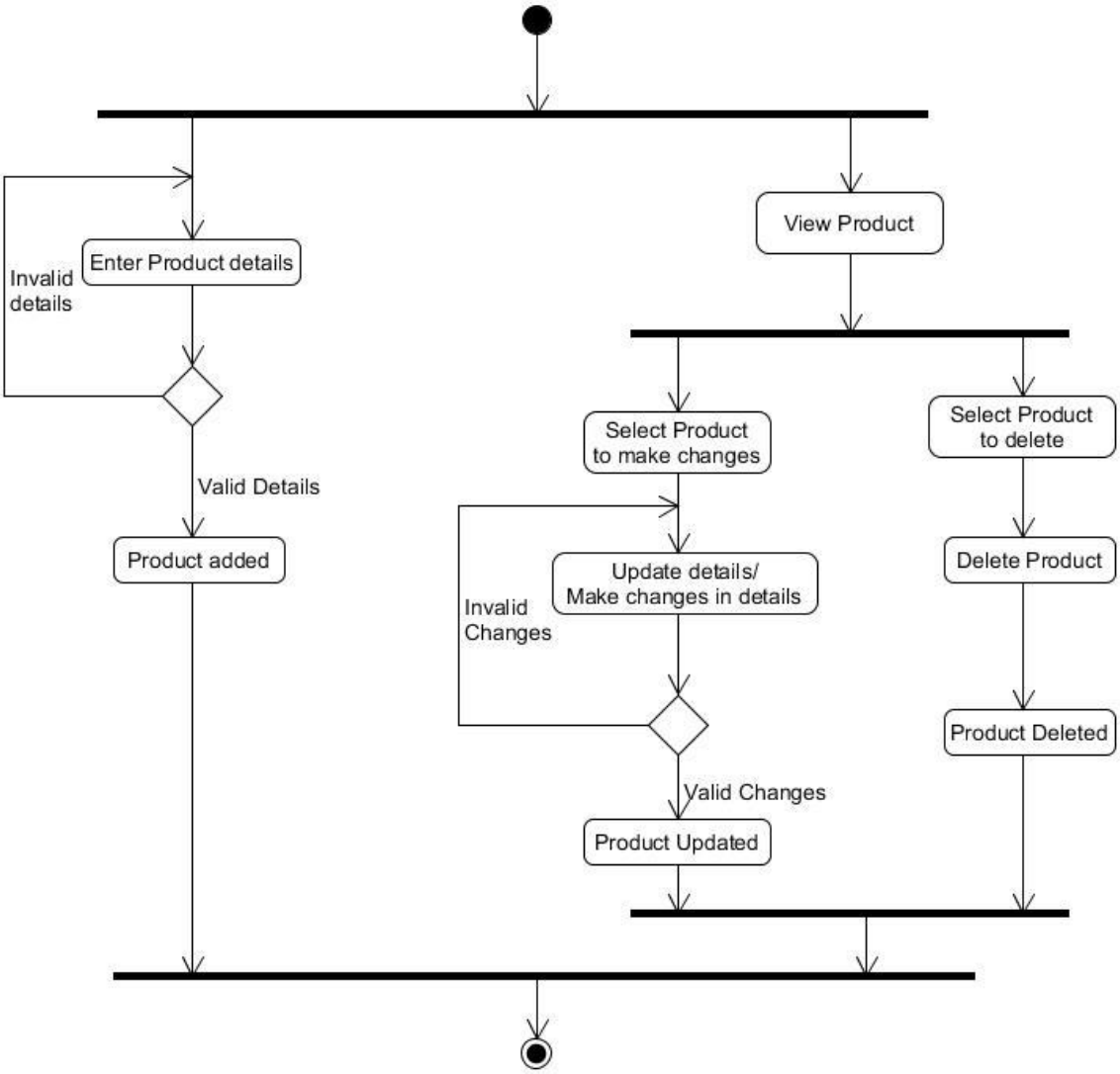
- **Request for Registration**



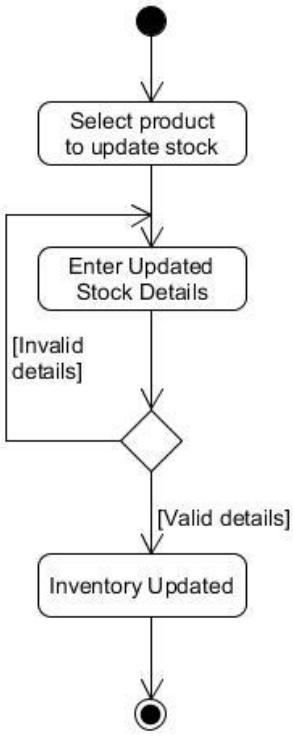
- **Login**


Enter Username
and password
[Invalid username
or password]
[Valid username
and password]

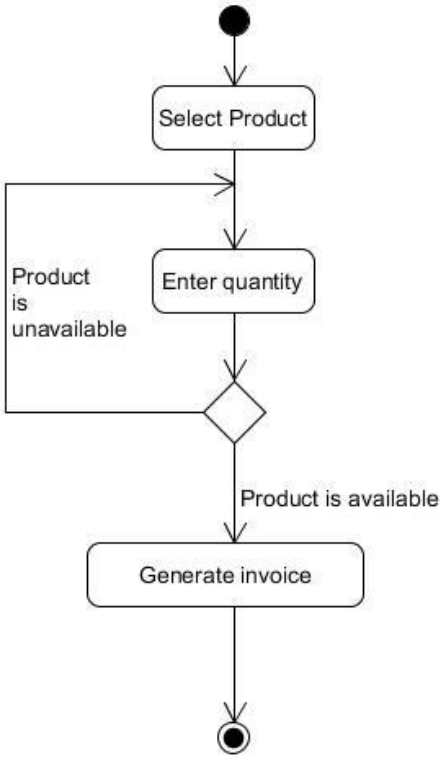
- **Manage Product**



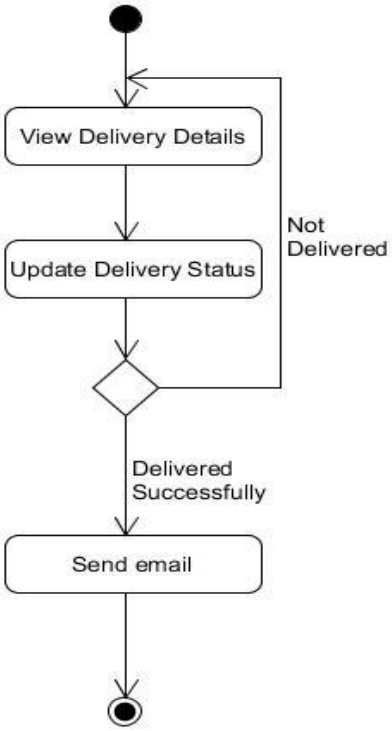
- **Update Inventory**



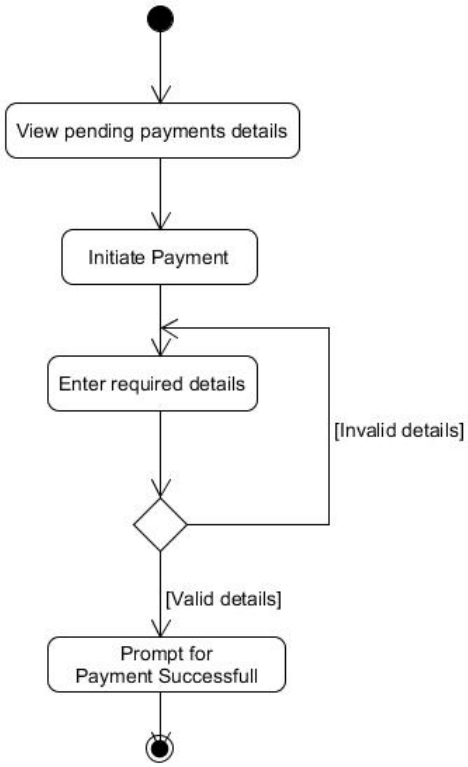
- **Place Orders**



- **Delivery**



- **Payment**



6. Database Design

6.1. Database Schema

- tblCategory(categoryId[PK], categoryName)
- tblProduct(productId[PK], productName, categoryId[FK], productDescription, MRP, companySellingPrice, Inventory, deleted)
- tblState(stateId[PK], stateName)
- tblCity(cityId[PK], cityName, stateId[FK])
- tblUser(userId[PK], name, emailId, mobileNumber, address, cityId[FK], pincode, userType, password,status)
- tblWarehouse(warehouseId[PK], warehouseName, warehouseAddress, cityId[FK])
- tblSupplier(supplierId[PK], userId[FK], warehouseId[FK], status, parentSupplierId[FK], supplierLevel)
- tblWarehouseStockDetails(warehouseStockId[PK], warehouseId[FK], productId[FK], productQuantity)
- tblOrder(orderId[PK], orderDate, status, supplierId[FK], buyerId[FK], productId, price, quantity)

6.2. Data Dictionary

tblCategory

Fields	**Data Type**	**Constraint**	**Description**
categoryId	int	Primary Key	It contains unique id for category
categoryName	varchar(50)	Not Null	It contains names for categories.

tblProduct

Fields	Data Type	Constraint	Description
productId	int	Primary key	It contains unique id for every products
productName	varchar(100)	Not Null	It contains names for every products
categoryId	int	Foregin Key	It contains the category id of the product.
productDescription	varchar(250)		It contains details about product
MRP	float	Not Null	It contains the MRP(Maximum Retail Price) of the product.
companySellingPrice	float	Not Null	It contains the price of the product at which the product will be sold to the first supplier by company.
deleted	bool	Not Null	It will contain value whether the products is deleted or not?
Inventory	int	Not null	It will contain inventory of product available with Admin

tblState

Fields	Data Type	Constraint	Description
stateId	Int	Primary Key	It contains a unique id for state.
stateName	varchar(50)	Not Null	It contains name of state

tblCity

Fields	Data Type	Constraint	Description
cityId	int	Primary Key	It contains unique id for the city.
cityName	varchar(50)	Not Null	It contains the name of the city.
stateId	int	Foreign Key	It contains the id of the state of the city.

tblUser

Fields	Data Type	Constraint	Description
userId	int	Primary Key	It contains a unique id for every user.
name	varchar(75)	Not Null	It contains name of user
emailId	varchar(150)	Not Null, unique	It contains the email id of users.
mobileNumber	int	Not Null	It contains a mobile number of users.
address	varchar(250)	Not Null	It contains the address of the user.
cityId	int	Foreign Key	It contains the id of the city for the user.
pincode	int		It contains the pincode of the user's address.
password	varchar(150)		It contains a password for users for authentication.
userType	varchar(15)	Not null	It contains a type of user
status	bool	Not null	It contains a whether the user has verified mail or not.

tblWareHouse

Fields	Data Type	Constraint	Description
warehouseId	int	Primary Key	It contains a unique id for the warehouse.
warehouseName	varchar (100)	Not Null	It contains name of warehouse
warehouseAddress	varchar(250)	Not Null	It contains address of warehouse
cityId	int	Forign Key	It contains id of the city of warehouse location.

tblSupplier

Fields	Data Type	Constraint	Description
supplierId	int	Primary Key	It contains the id of the supplier.
userId	int	Foreign key	It contains a userId for the supplier.
wareHouseId	int	Foreign key	It contains warehouse id of supplier's warehouse
status	varchar(20)	Not Null	It contains the status of supplier.(Applied, Approved, Rejected)
parentSupplierId	int	Foreign key	It contains id of parent supplier.
supplierLevel	int	Not null	It contains the level of supplier

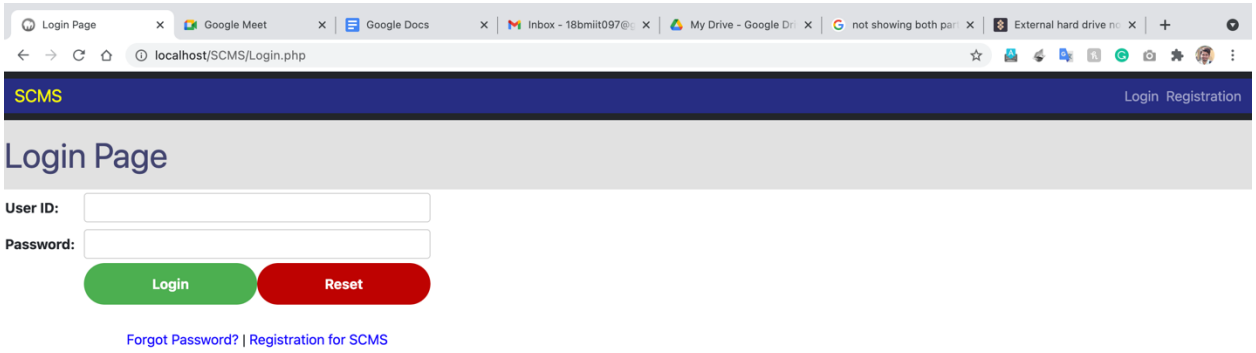
tblWarehuseStockDetails

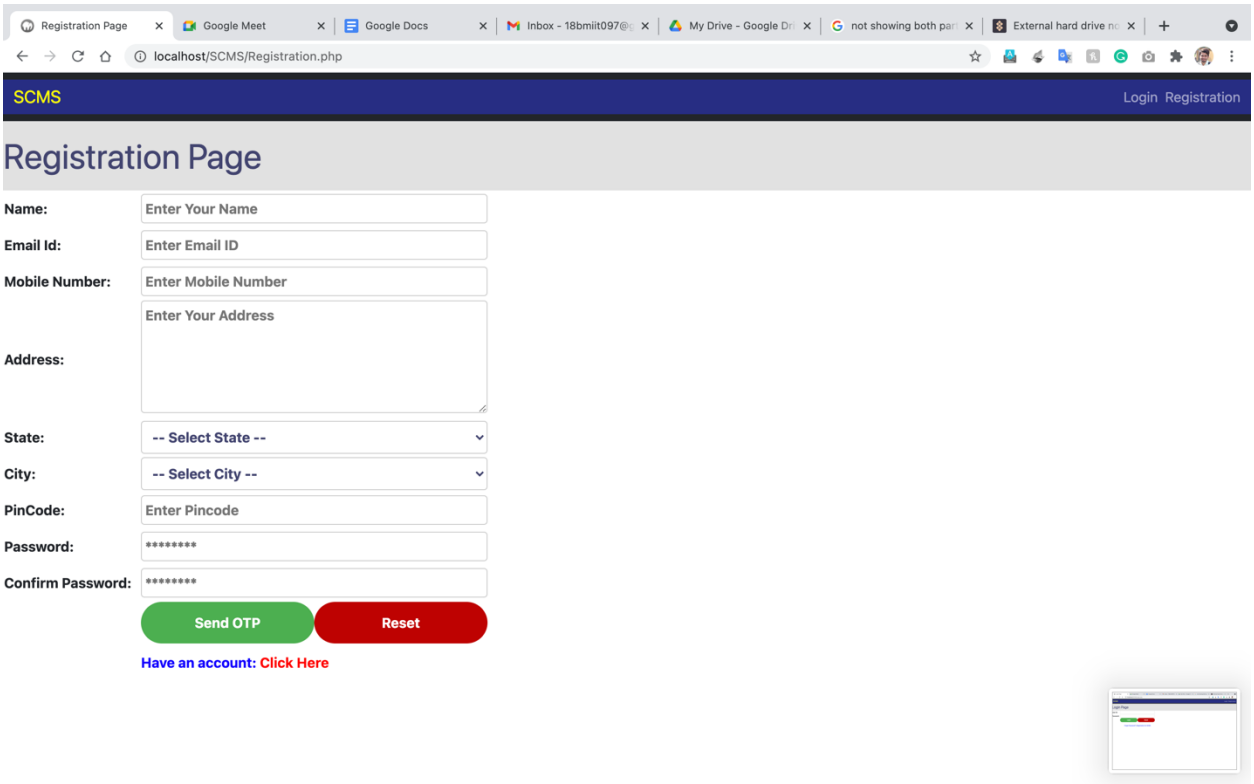
Fields	Data Type	Constraint	Description
warehouseStockId	int	Primary key	It contains unique id for record of stock in warehouse
warehouseId	int	Foreign key	It contains the id of the warehouse for which this record is.
productId	int	Foreign key	It contains the id of the product for which this record is.
productQuantity	int	Not Null	It contains a quantity of products.

tblOrder

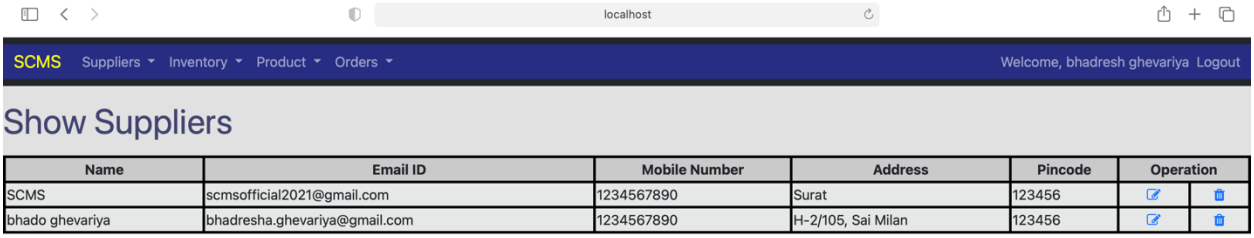
Fields	Data Type	Constraint	Description
orderId	int	Primary Key	It contains a unique id for every order.
orderDate	Date	Not Null	It contains the date of order.
status	varchar(20)	Not Null	It contains status of order.
sellerId	int	Foreign key	It contains a supplier id who is the seller for a particular order.
buyerId	int	Foreign key	It contains an id for the user who is a buyer for a particular order.
productId	int	Foreign key	It contains id of product for which this order is made.
price	float	Not null	It will contain price of product at the time of placing order
quantity	int	Not null	It will contain quantity of product for particular order

7. System Implementation

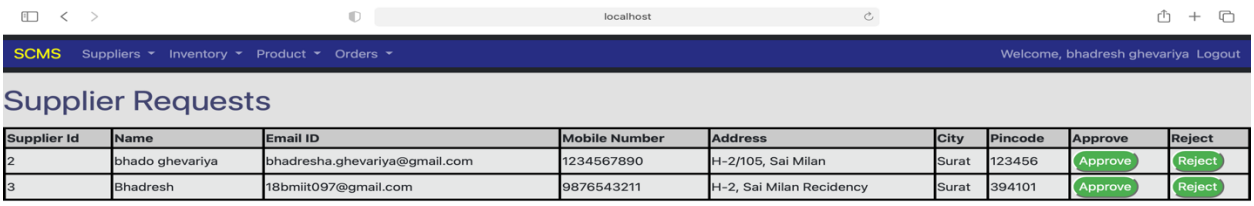



Registration Page
Google Meet
Google Docs
Inbox - 18bmiit097@g
My Drive - Google Dr
not showing both par
External hard drive nc
localhost/SCMS/Registration.php
SCMS
Login Registration
Registration Page
Name:
Enter Your Name
Email Id:
Enter Email ID
Mobile Number:
Enter Mobile Number
Address:
Enter Your Address
State:
-- Select State --
City:
-- Select City --
PinCode:
Enter Pincode
Password:
Confirm Password:
Send OTP
Reset
Have an account: Click Here

Show Suppliers for admin

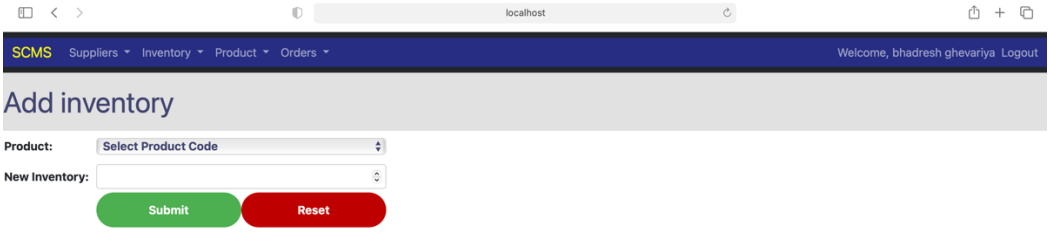


Supplier requests of new suppliers

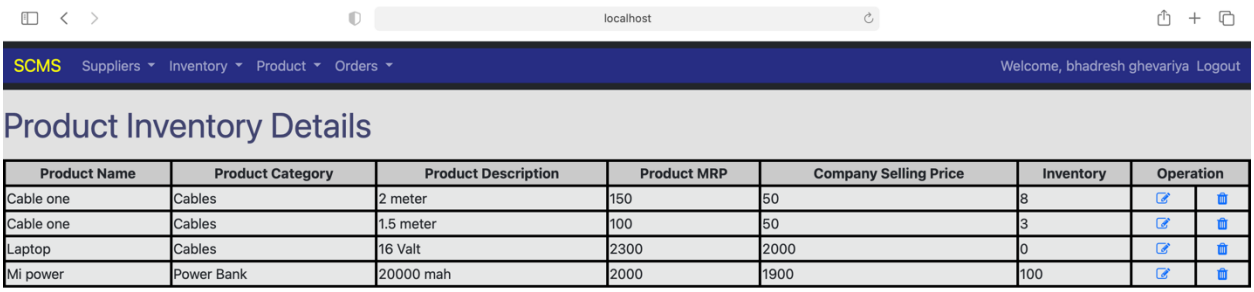


Rejected Supplier list

Add inventory (Admin access only)

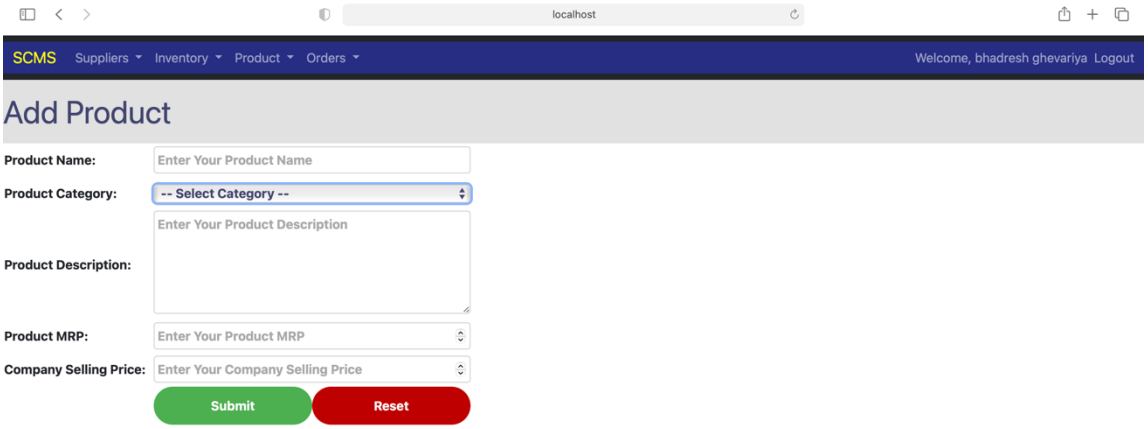


Product Inventory details(admin)

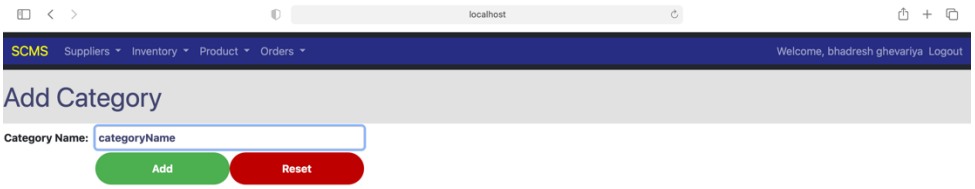


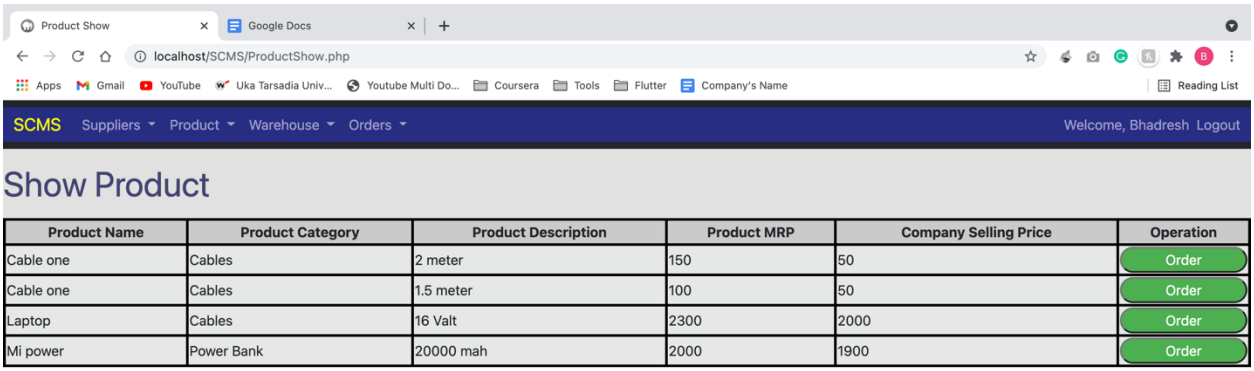
Product Name	Product Category	Product Description	Product MRP	Company Selling Price	Inventory	Operation
Cable one	Cables	2 meter	150	50	8	
Cable one	Cables	1.5 meter	100	50	3	
Laptop	Cables	16 Valt	2300	2000	0	
Mi power	Power Bank	20000 mah	2000	1900	100	

Add Products

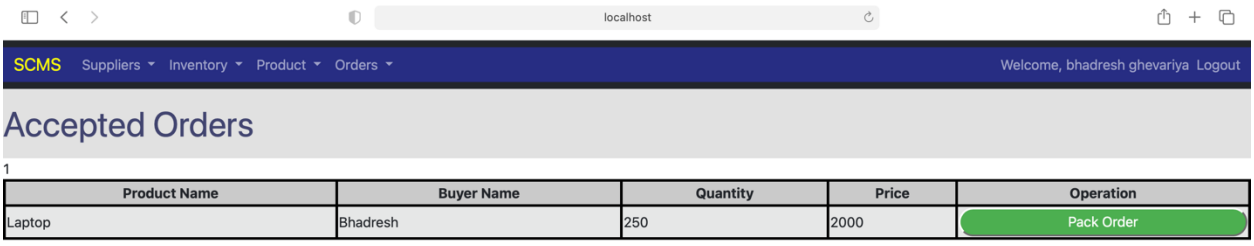


Add category for products



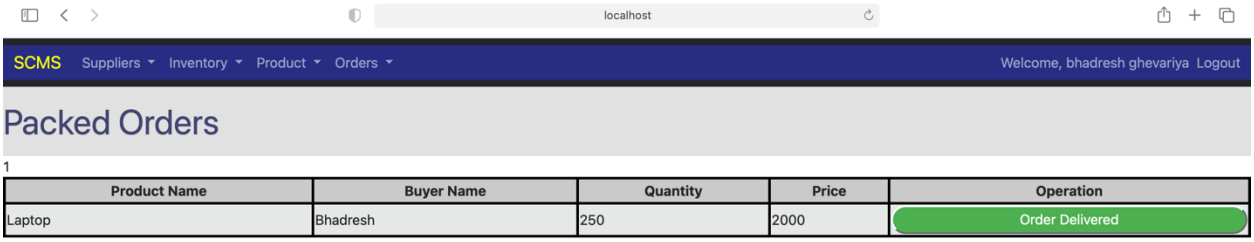


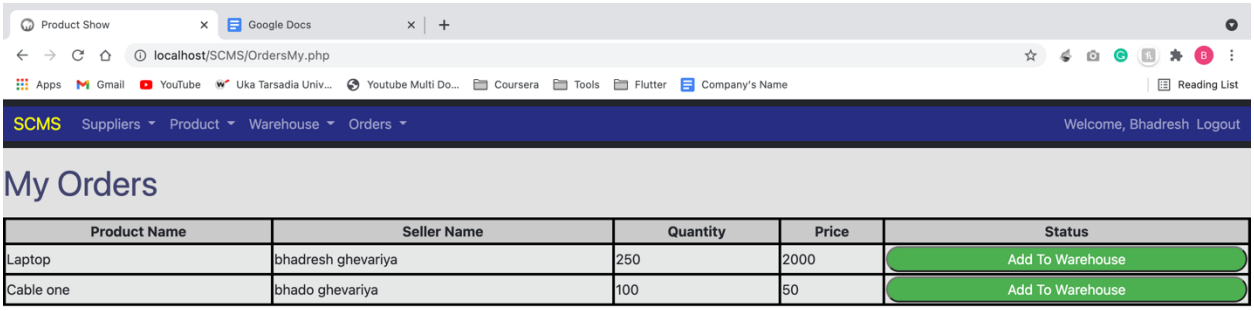
Product Name	Product Category	Product Description	Product MRP	Company Selling Price	Operation
Cable one	Cables	2 meter	150	50	Order
Cable one	Cables	1.5 meter	100	50	Order
Laptop	Cables	16 Valt	2300	2000	Order
Mi power	Power Bank	20000 mah	2000	1900	Order



1

Product Name	Buyer Name	Quantity	Price	Operation
Laptop	Bhadresh	250	2000	Pack Order


localhost
SCMS
Suppliers
Inventory
Product
Orders
Welcome, bhadresh ghevariya Logout
Packed Orders
1
Product Name
Buyer Name
Quantity
Price
Operation
Laptop
Bhadresh
250
2000
Order Delivered


Product Show
Google Docs
localhost/SCMS/OrdersMy.php
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Uka Tarsadia Univ...
Youtube Multi Do...
Coursera
Tools
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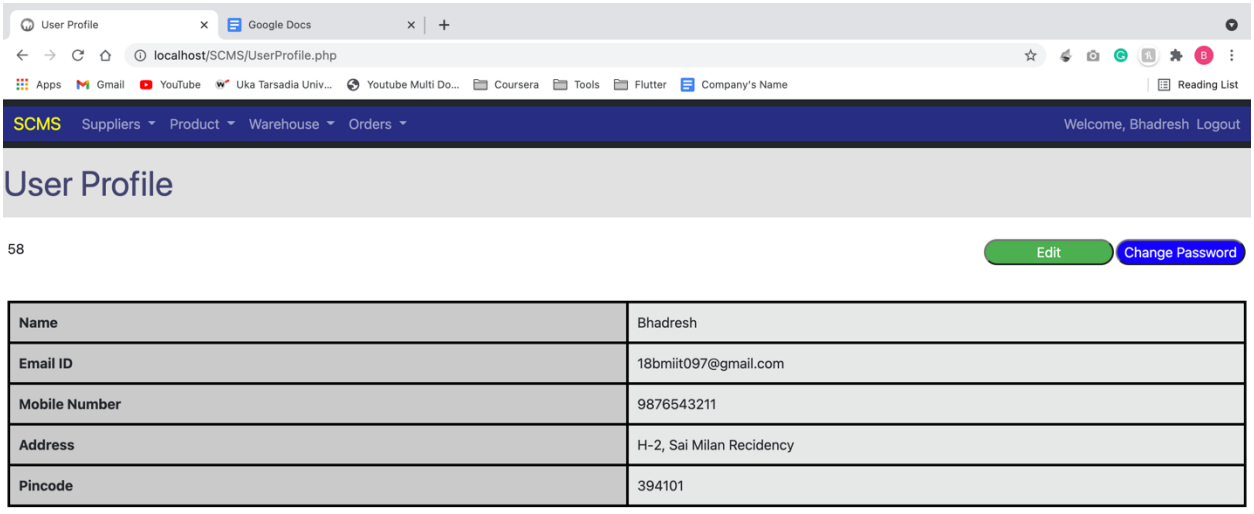
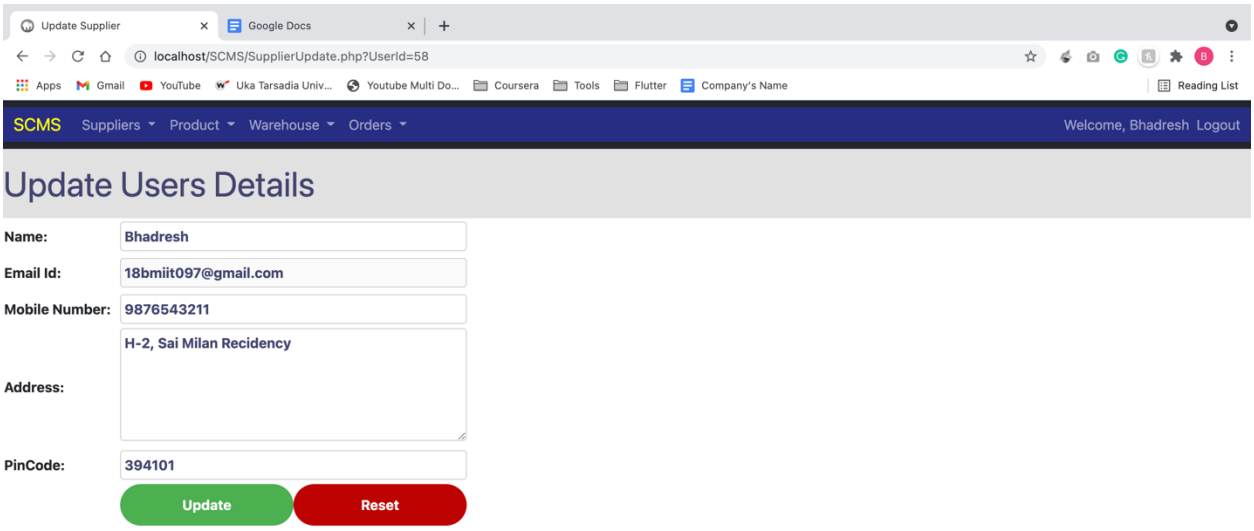
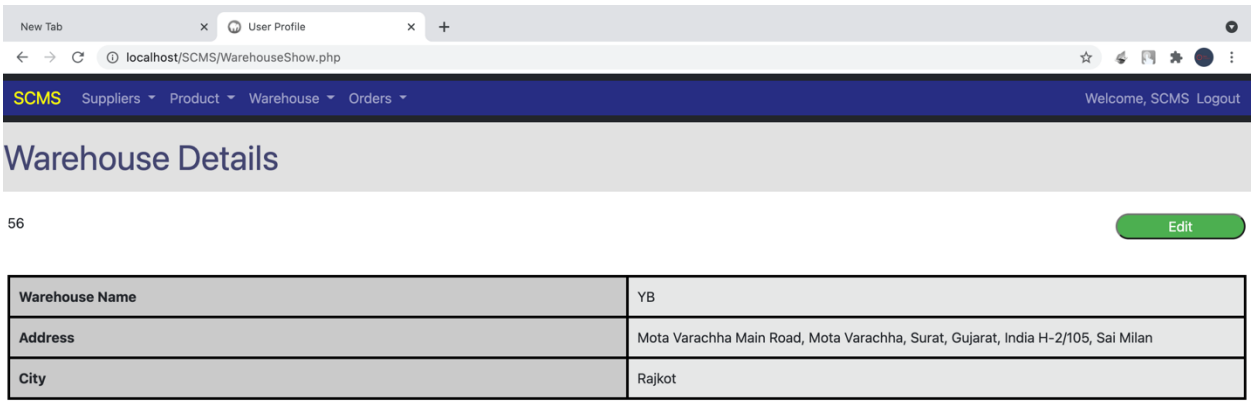
Reading List
SCMS
Suppliers
Product
Warehouse
Orders
Welcome, Bhadresh Logout
My Orders
Product Name
Seller Name
Quantity
Price
Status
Laptop
bhadresh ghevariya
250
2000
Add To Warehouse
Cable one
bhado ghevariya
100
50
Add To Warehouse

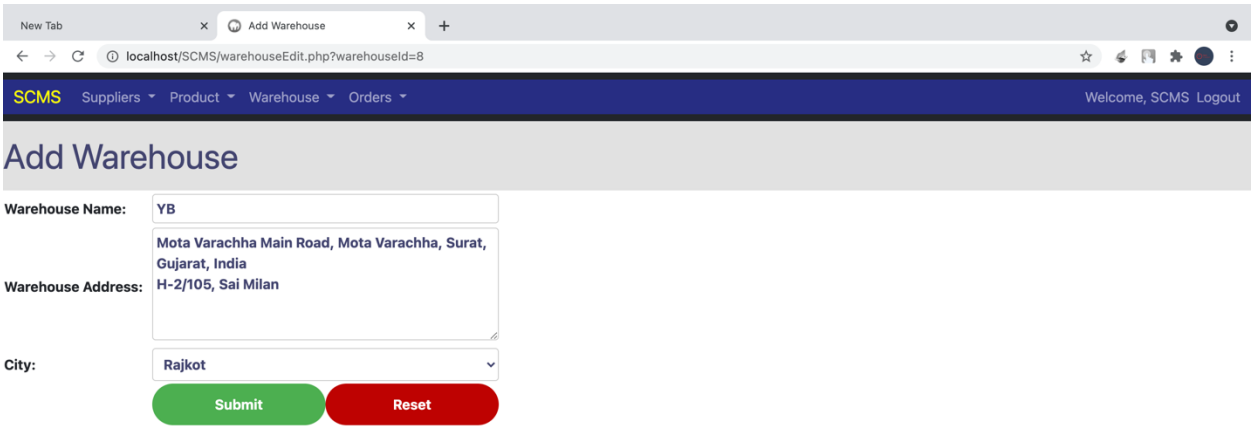
localhost
SCMS
Suppliers
Inventory
Product
Orders
Welcome, bhadresh ghevariya Logout
Delivered Orders
1
Product Name
Buyer Name
Quantity
Price
Laptop
Bhadresh
250
2000

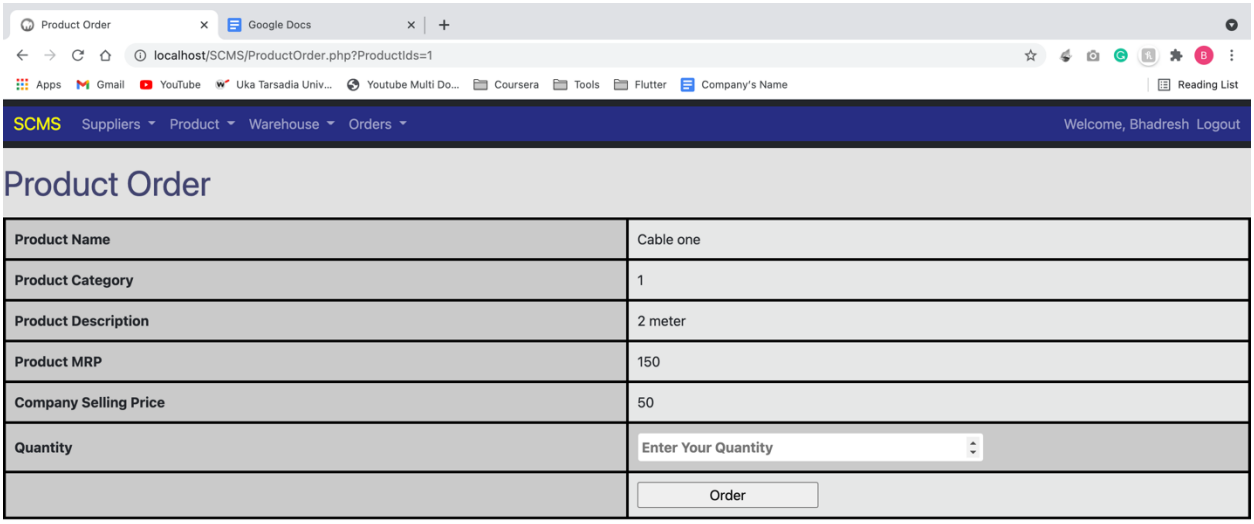

User Profile
Google Docs
localhost/SCMS/UserProfile.php
Apps
Gmail
YouTube
Uka Tarsadia Univ...
Youtube Multi Do...
Coursera
Tools
Flutter
Company's Name
Reading List
SCMS
Suppliers
Product
Warehouse
Orders
Welcome, Bhadresh Logout
User Profile
58
Edit
Change Password
Name
Bhadresh
Email ID
18bmiit097@gmail.com
Mobile Number
9876543211
Address
H-2, Sai Milan Recidency
Pincode
394101





Warehouse Name	YB
Address	Mota Varachha Main Road, Mota Varachha, Surat, Gujarat, India H-2/105, Sai Milan
City	Rajkot


New Tab
Add Warehouse
localhost/SCMS/warehouseEdit.php?warehouseId=8
SCMS
Suppliers
Product
Warehouse
Orders
Welcome, SCMS Logout
Add Warehouse
Warehouse Name:
YB
Warehouse Address:
Mota Varachha Main Road, Mota Varachha, Surat, Gujarat, India
H-2/105, Sai Milan
City:
Rajkot
Submit
Reset


Product Order
Google Docs
localhost/SCMS/ProductOrder.php?ProductIds=1
Apps
Gmail
YouTube
Uka Tarsadia Univ...
Youtube Multi Do...
Coursera
Tools
Flutter
Company's Name
Reading List
SCMS
Suppliers
Product
Warehouse
Orders
Welcome, Bhadresh Logout
Product Order
Product Name
Cable one
Product Category
1
Product Description
2 meter
Product MRP
150
Company Selling Price
50
Quantity
Enter Your Quantity
Order

8. Test Cases

8.1.1 Manage User

Test Case ID	Test Case Description	Input1	Input2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8	Expected Result	Remark (If Any)
		Name	Email ID	Mobile Number	Address	State	City	Pin code	Pass word		
TC1	User Registration	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	User Registreted Successfully	-
TC2	Name is Invalid	Invalid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Invalid Name	Name is not in specified format
TC3	EmailID is Invalid	Valid Input	Invalid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Invalid EmailID	EmailID is not in specified format
TC4	Mobile Number is Invalid	Valid Input	Valid Input	Invalid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Invalid Mobile Number	Mobile Number is not in specified format
TC5	Address is Invalid	Valid Input	Valid Input	Valid Input	Invalid Input	Valid Input	Valid Input	Valid Input	Valid Input	Invalid Address	Address is not in specified format
TC6	State is Invalid	Valid Input	Valid Input	Valid Input	Valid Input	Invalid Input	Valid Input	Valid Input	Valid Input	State is not selected	State is not selected
TC7	City is Invalid	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Invalid Input	Valid Input	Valid Input	City is not selected	City is not selected
TC8	Pincode is Invalid	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Invalid Input	Valid Input	Invalid Pincode	Pincode is not in specified format
TC9	Password is Invalid	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Invalid Input	Invalid Password	Passwrod is not in specified format
TC10	EmailID is already exists	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	User already exists	EmailD was already registreted

8.1.2 Manage Product Category

Test Case ID	Test Case Description	Input1	Expected Result	Remark (If Any)
		Category Name		
TC1	Product Category Add	Valid Input	Product category Added Successfully	-
TC2	Product category Name	Invalid Input	Invalid Product category Name	Product Category Name is not in specified format
TC3	Product category is already exists	Valid Input	Product category already exists	Product Category was already registreted

8.1.3 Manage Product

Test Case ID	Test Case Description	Input1	Input2	Input 3	Input 4	Input 5	Expected Result	Remark (If Any)
		Product Name	Product Category	Product Description	Product MRP	Company Selling Price		
TC1	Product Add	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Product Added Successfully	-
TC2	Product Name	Invalid Input	Valid Input	Valid Input	Valid Input	Valid Input	Invalid Product Name	Product Name is not in specified format
TC3	Product Category	Valid Input	Invalid Input	Valid Input	Valid Input	Valid Input	Product Category is not selected	Product Category is not selected
TC4	Product Description	Valid Input	Valid Input	Invalid Input	Valid Input	Valid Input	Invalid product Description	Product Description is not in specified format
TC5	Product MRP	Valid Input	Valid Input	Valid Input	Invalid Input	Valid Input	Invalid Product MRP	Product MRP is not in specified format
TC6	Company Selling Price	Valid Input	Valid Input	Valid Input	Valid Input	Invalid Input	Invalid Company Selling Price	Company Selling Price is not in specified format
TC7	Product is already exists	Valid Input	Valid Input	Valid Input	Valid Input	Valid Input	Product already exists	Product was already registreted

9. Future Enhancement

- Changes/Enhancement maybe done in the system to use it for multiple states.