IACSD

INSTITUTE FOR ADVANCED COMPUTING AND SOFTWARE DEVELOPMENT AKURDI, PUNE

Documentation On

"PRODUCT MANAGEMENT AND

BILLING SYSTEM"

PG-DAC SEPTEMBER 2021

Submitted By:
Group No: 18
Names & roll numbers
Ankush Bhalage (219028)
Sarthak Joshi (219167)

Prashant Karhale   **Mr. Chetan Pardeshi**
Centre Coordinator   **Project Guide**

Table of Contents

List of Figures

1. <u>Introduction</u>

Product Management and Billing System has become important factor in modern business field. This system should help the businessmen to streamline the administrative task and provide real-time access to the data. Building this system in standalone application interface will further help the ease of accessibility through the provided portal. The study findings enable the definition of the project problem statement, its objectives, scopes and advantages of the Product Management and Billing System.

<u>Document Purpose</u>

The purpose this document is to present a detailed description of the Product Management and Billing System for any store or a shop. It will explain the purpose and features of the software, the interfaces of the software, what the software will do, the constraints under which it must operates and how the software will react to external stimuli. This document is intended for both the end users and the developers of the software.

Problem Statement

Existing system for a product management is based on our traditional way keeping records and details on paper and registers. Access of these details and papers are not granted to common member in absence of the shop or store owner. It is hard to manage all the product list with pen and paper. It gets really hard to maintain the records and then keep track of past records. Hence, this system is proposed to overcome the flaws of the existing system and giving power to the admin of the shop for smooth functioning of all operations and save paper. So that, he/she will be able to manage the products, track their availability and their respective billing easily.

Product Scope

This project report covers the requirements for the Product Management and Billing System. This software will provide an environment in which the users of the system will be able to perform various operations that are associated with storing, marinating, updating and retrieving product information. The purpose of this is to guide developers in selecting a design that will be able to accommodate the full-scale application. This system will capture information about customer's personal details, products and their quantities. Storing, updating and retrieving in a fast and accurate way.

The area covers include:
- J2EE Technology used for the development of the application.
- Generally, the shop/store owner and his staff members will be able to access this product management and billing system to add products, vendor and customers.
- Web-platform means that the system will be available for access 24/7 except when there is a temporary server issue which is expected to be minimal.

Aims & Objectives

Specific goals are: -
- To produce a web-based system that allow the admin of the shop/store, to add his staff members and then work to add customers, add vendors, add products.
- To generate invoice based on the products purchased by various customers.

- To track available stock present in their respective shop/store based on show available products list and also monitor money made in a day.
- To modify and update the product, customer and vendor list based on their recent activity.

IACSD

2. <u>Overall Description</u>

<u>Product Perspective:</u>

The product, Product Management and Billing System is an independent product and does not depend on any other product or system. The product will automate various tasks associated with handling product details and better organizing the stored information and optimum performance, thus helping the businesses to ensure smooth working of these processes.

- **III. PROPOSED SYSTEM**

<u>Product functionality:</u>

Product Management and Billing System provides the features for admin, customers and vendors. It includes several functionalities describes as below:

<u>Product Management:</u>

Product Management and Billing System is managed by admin with his staff members. Admin and his staff members can update and monitor the registered product details, add a new product, provide product number for all products, assign each product quantity,etc.

<u>Generating invoice:</u>

The admin and his staff members can generate an invoice based on the various products purchased by various customer. They can also track the money made by them on daily basis.

<u>Maintenance of Customers, Products and Vendors:</u>

The project helps the admin and his staff members to see the list of all customers, products and the vendors at a glance. It also allows them to update, delete the products based on their demand and supply. It also allows them to update and delete the customers and vendors based on their recent activities.

<u>Benefits of Product Management System</u>

- This online product management solution is fully functional and flexible.
- It is very easy to use.
- This online product management system helps in back office administration by streamlining and standardizing the procedures.

- It saves a lot of time, money and resources.

- Eco-friendly: The monitoring of the product management and the overall business becomes easy and includes the least of paper work.

- The application acts as an office that is open 24/7.

- It increases the efficiency of the management at offering quality services to the customers.

- It enables admin and his staff members to generate invoice easily and track available products at their end easily.

- It provides custom features development and support with the application.

Users and Characteristics:

Admin:

- Admin can login to the system.

- Add new customers.

- Add new vendors.

- Add new products.

- Generate invoice of the customers.

- Track money made in a day.

- View list of all customers, products and vendors at a glance .

- Update or delete customers, products and vendors based on their respective activity.

- Add new users (staff members) to assist him in the smooth working of all activities.

User:

- User can login to the system.
- Add new customers.
- Add new vendors.
- Add new products.
- Generate invoice of the customers.
- Track money made in a day.
- View list of all customers, products and vendors at a glance.
- Update or delete customers, products and vendors based on their respective activity.

Operating Environment:

Server Side:

Processor: Intel® Xeon® processor 3500 series

HDD: Minimum 500GB Disk Space

RAM: Minimum 4GB

OS: Windows10

Database: MySQL

Client Side (minimum requirement):

Processor: Intel Dual Core

HDD: Minimum 80GB Disk Space

RAM: Minimum 2GB

OS: Windows 10

Design and Implementation Constraints:

- The application will use TOMCAT as web server, REACT JS as server side language, MYSQL as database server.
- HTTP protocol is used as communication protocol. FTP is used to upload the web application in live domain and the client can access it via HTTP protocol.
- Several types of validations make this web application a secured one and SQL Injections can also be prevented.
- Since Project Management system is a web-based application, internet connection must be established.
- The Product Management System will be used on PCs and will function via internet or intranet in any web browser.

3. Requirements Specification

External Interface Requirements:

User Interfaces:
- All the users will see the same page when they enter in this website. This page asks the users a username and a password.
- After being authenticated by correct username and password, user will be redirect to their corresponding profile where they can do various activities.
- The user interface will be simple and consistence, using terminology commonly understood by intended users of the system. The system will have simple interface, consistence with standard interface, to eliminate need for user training of infrequent users.

Hardware Interfaces:
- No extra hardware interfaces are needed.
- The system will use the standard hardware and data communication resources.
- This includes, but not limited to, general network connection at the server/hosting site, network server and network management tools.

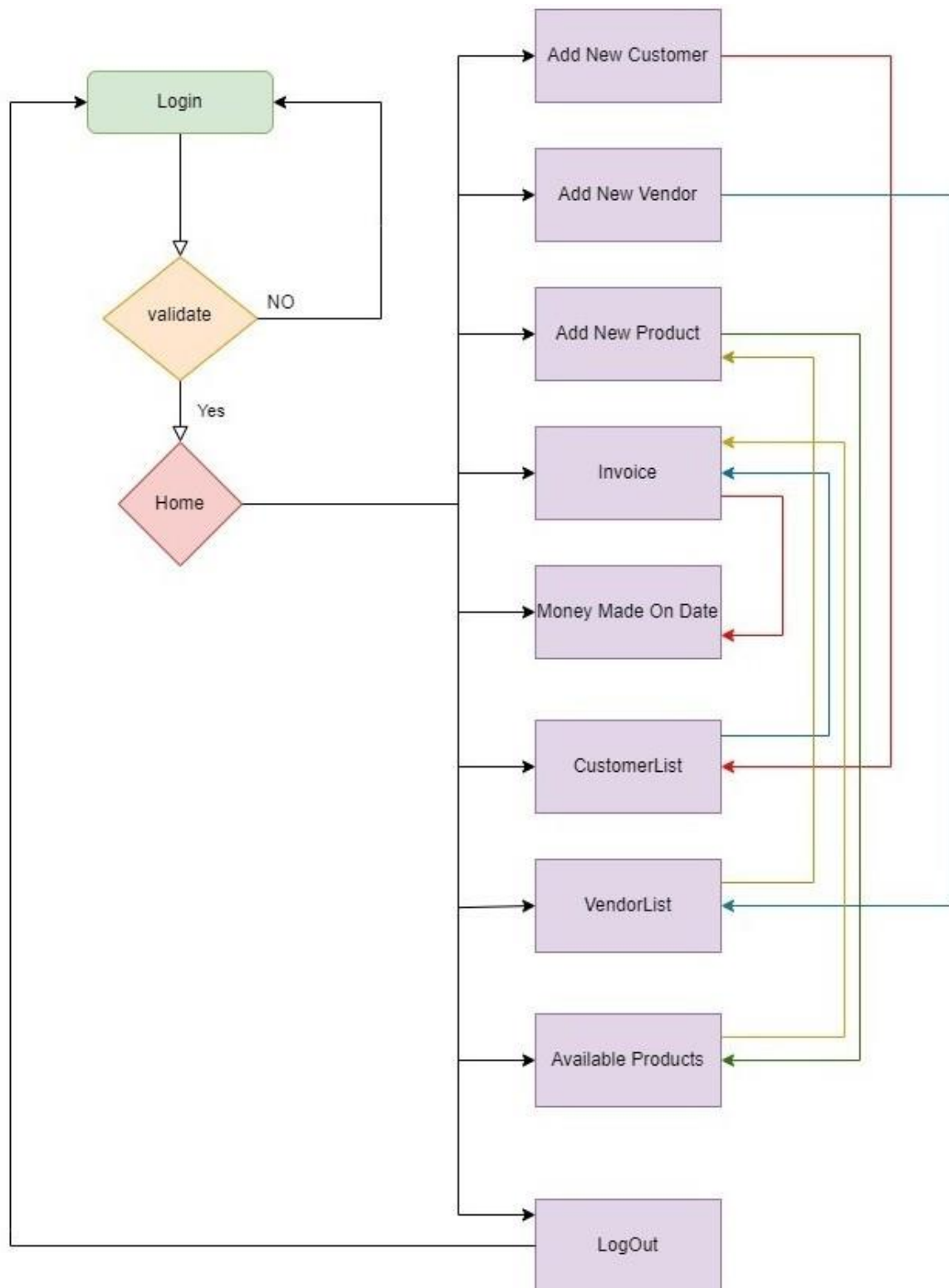Application Interfaces:

<u>Web Browser:</u>

The system is a web-based application; clients need a modern web browser such as Mozilla Firebox, Internet Explorer, Opera, and Chrome. The computer must have an Internet connection in order to be able to access the system.
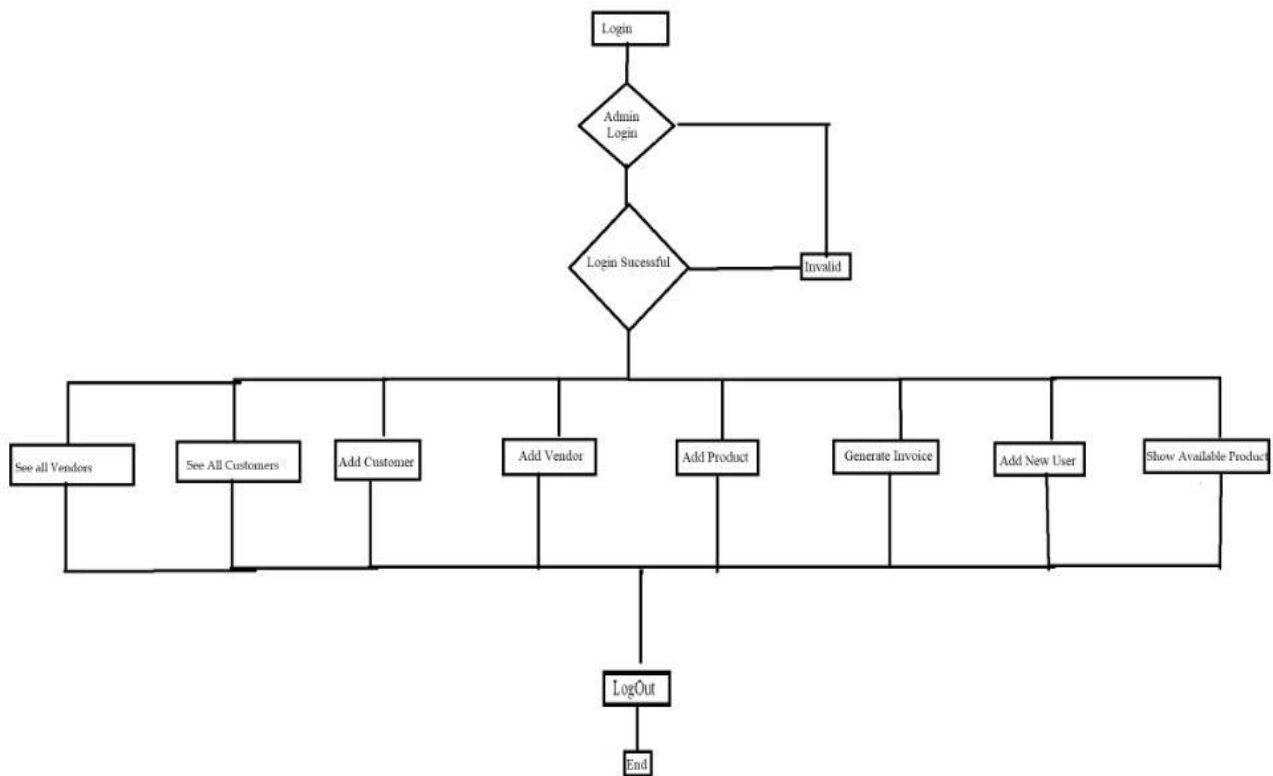
Communications Interfaces:

- This system uses communication resources which includes but not limited to, HTTP protocol for communication with the web browser and web server and TCP/IP network protocol with HTTP protocol.
- This application will communicate with the database that holds all the booking information. Users can contact with server side through HTTP protocol by means of a function that is called HTTP Service. This function allows the application to use the data retrieved by server to fulfill the request fired by the user.
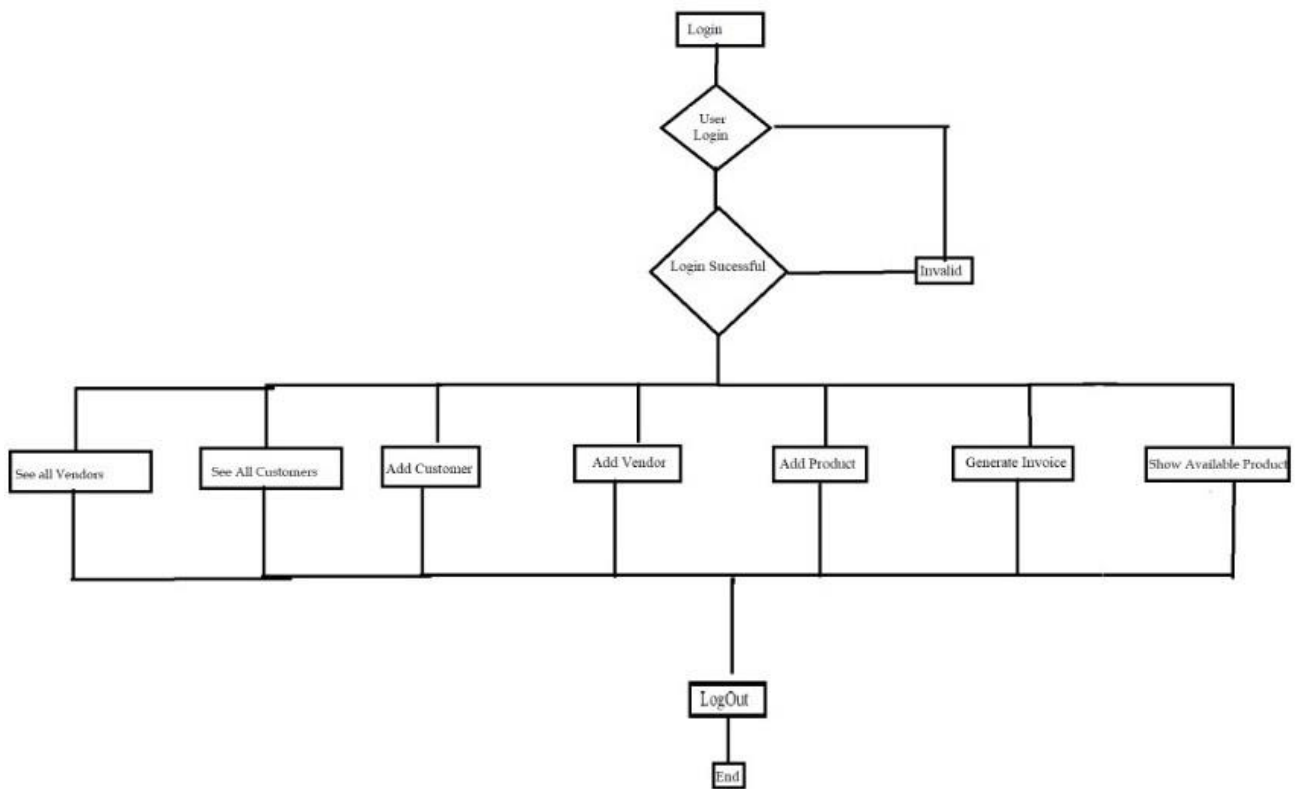
4. <u>System Design</u>

<u>Flowchart</u>

<u>Figure 1:Flowchart for Product Management and Billing System</u>

IACSD

Activity Diagram

Login

Admin Login

Login Sucessful

Invalid

See all Vendors | See All Customers | Add Customer | Add Vendor | Add Product | Generate Invoice | Add New User | Show Available Product
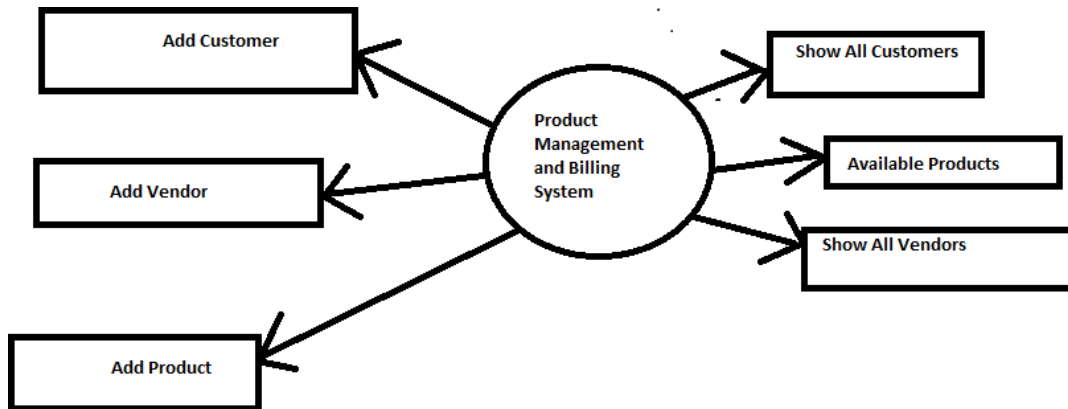
LogOut

End

Figure 2: Admin Activity Diagram

Figure 3: User Activity Diagram
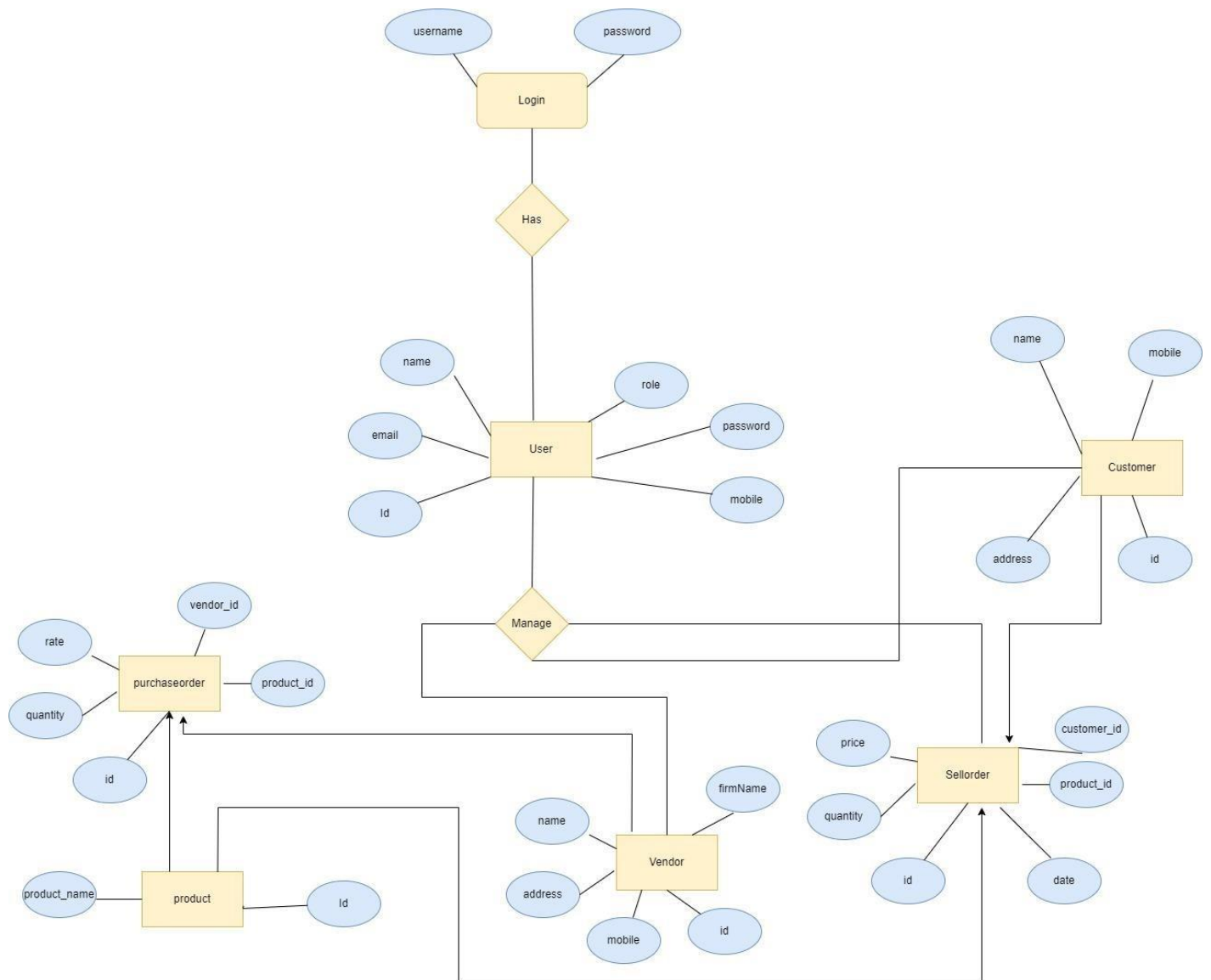
Data Flow Diagram

Figure 4: Level 0 Data Flow Diagram

Figure 5: Level 1 Data Flow Diagram

IACSD

ER Diagram :

5. Table Structure

1. Customer:

Field	Type	Null	Key	Default	Extra
Id	int	NO	PRI	NULL	Auto_increment
Address	varchar(30)	YES		NULL	
Mobile	bigint	YES		NULL	
Name	varchar(30)	YES		NULL	

2. Product:

Field	Type	Null	Key	Default	Extra
Id	int	NO	PRI	NULL	Auto_increment
product_name	varchar(255)	YES		NULL	

3. Purchaseorder:

Field	Type	Null	Key	Default	Extra
Id	int	NO	PRI	NULL	Auto_increment
Quantity	int	YES		NULL	
Rate	double	YES		NULL	
product_id	int	YES	MUL	NULL	
vendor_id	int	YES	MUL	NULL	

4. Sellorder:

Field	Type	Null	Key	Default	Extra
Id	int	NO	PRI	NULL	Auto_increment
Date	date	YES		NULL	
Price	int	YES		NULL	
Quantity	int	YES		NULL	
customer_id	int	YES	MUL	NULL	
product_id	int	YES	MUL	NULL	

5. Vendors:

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	Auto_increment
Address	varchar(30)	YES		NULL	
firm_name	varchar(30)	YES		NULL	
Mobile	bigint	YES		NULL	
Name	varchar(255)	YES		NULL	

6. User:

Field	Type	Null	Key	Default	Extra
Id	int	NO	PRI	NULL	Auto_increment
Email	varchar(255)	YES		NULL	
Mobile	bigint	YES		NULL	
Name	varchar(255)	YES		NULL	
Password	varchar(255)	YES		NULL	
Role	int	YES		NULL	

6. Conclusion

Product management system puts forth the actual working of various products stored in any shop or a store. Administration, payment calculation, customer management, vendor management, tracking money generated daily etc. similar to a grocery shop or a medical store are the key features of our project. User can access services and functionalities from the product management system anywhere and anytime for their own comfort.

Future Scope

This project can be enhanced further by all types of commercial business oriented organisations. The software is flexible enough to be modified and implemented as per future requirements. We have tried our best to present this free and user–friendly website to store or shop owner and their respective staff. Message and Email alerts for various happenings in the product management list can be added to the system so that users do not miss the updates and happenings of their respective shops and stores.

7. References

- [React – A JavaScript library for building user interfaces (reactjs.org)](#)
- [Bootstrap · The most popular HTML, CSS, and JS library in the world. (getbootstrap.com)](#)
- [Recharts](#)
- [React Tutorial (w3schools.com)](#)
- [Learn Spring Boot | Baeldung](#)
- [Spring Data JPA - Reference Documentation](#)