# POST GRADUATE COLLEGE SAMANBAD FAISALABAD

**Project** **Pharmacy Management System**

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# Pharmacy Management System

## Introduction

Pharmacies are still present which are operated manually and the pharmacist did not realize the importance and advantages of a computer-based pharmacy management system. The pharmacist must have to keep an accurate count of their drugs stock inventory there for it is necessary to know the details like stock balance, Expiry report of expired drugs, list of dead items, and narcotics register. If these tasks are performed manually then it would be a difficult and time-consuming process. Many pharmacy management systems available in the market have problems like So, we provide them computer-based pharmacy management system according to international standers (WHO) which makes different necessary tasks very easy and efficient like billing, managing supplier, drugs records, sale record, purchase record, stock management, expiry report of drugs and automates Oder generation also it will reduce the pharmacist workload by provide them one-click expiry report, dead items list and maintain narcotics .Many pharmacy management systems available in the market have problems like transaction process is slow and often inaccurate in managing Stock out and Oder taking process also these software are very expensive and not user-friendly. Many pharmacy management systems available in the market have problems like transaction process is slow and often inaccurate in managing Stock out and Oder taking process also these software are very expensive and not user-friendly.

## Purpose

Pharmacy management system is designed to improve the accuracy and efficiency in the pharmaceutical store. It is a computer-based system which helps the pharmacist to improve inventory management like billing, managing supplier, drugs records, sale record, purchase record, stock management, and expiry report of drugs and automate Order generation also ensures the security of information and reliability of pharmacy records when accessing and performing data manipulation. Hence it will reduce the loss of information unlike the existing manual system and also information will be processed fast.

Data flow diagram

A Data Flow Diagram(DFD) is a graphical representation of the flow of data of data flow of data within a system. It illustrate how information is input, processed, and output in system or a

process DFDs are valuable tools for visualizing and analyzing complex system enabling stakeholder to gain a clear understanding of the systems functionality and data flow.

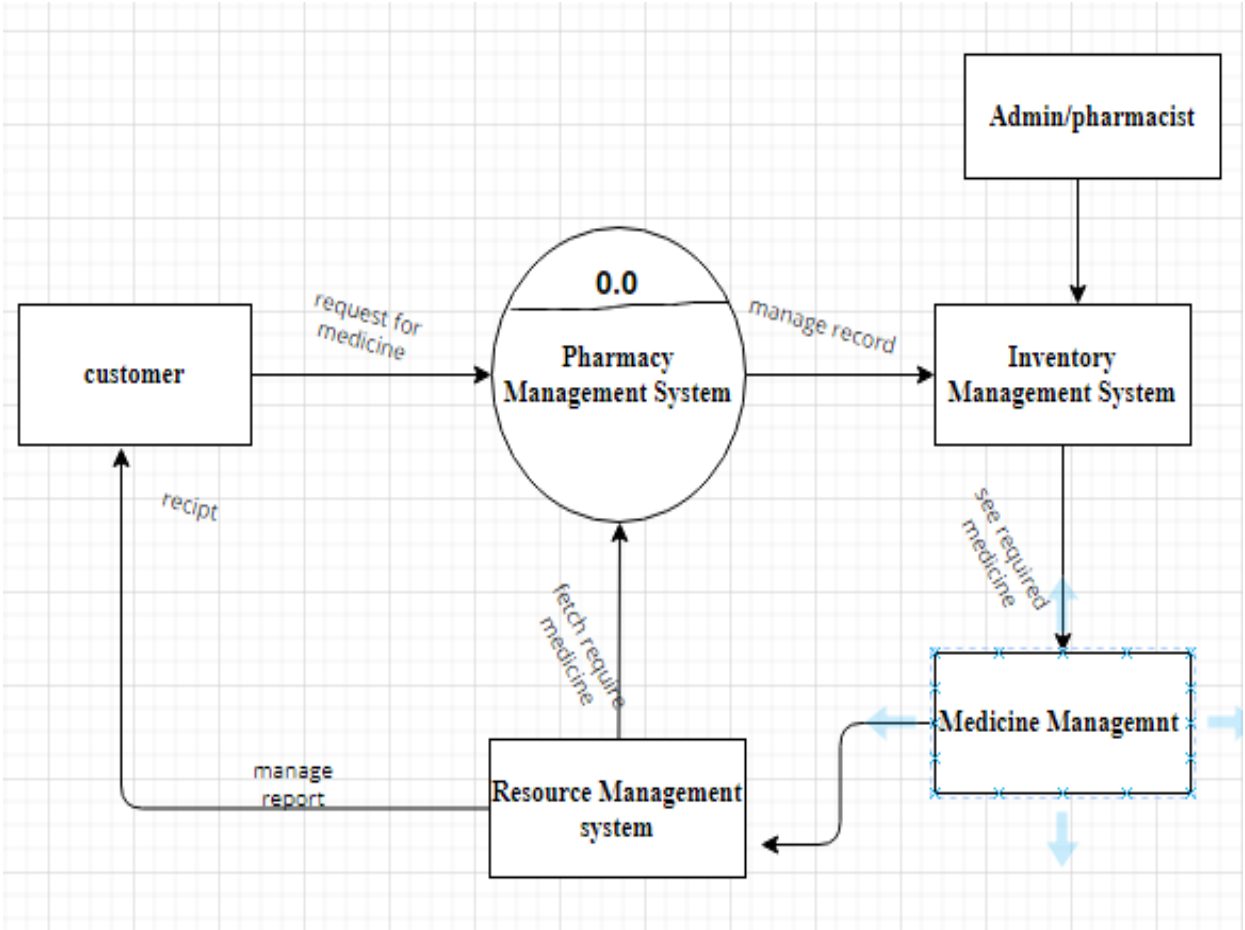
## Zero Level Data Flow Diagram

This is the Level DFD of Pharmacy Management System, where we have elaborated the high level process of Pharmacy Management and its base overview of the whole management system.

## Process Flow pharmacy management system

Given below are the major functions that can be performed using this software.

- Customer's management.
- User management.
- Stock management.
- Medicine management
- Resource management




**Zero Level diagram**

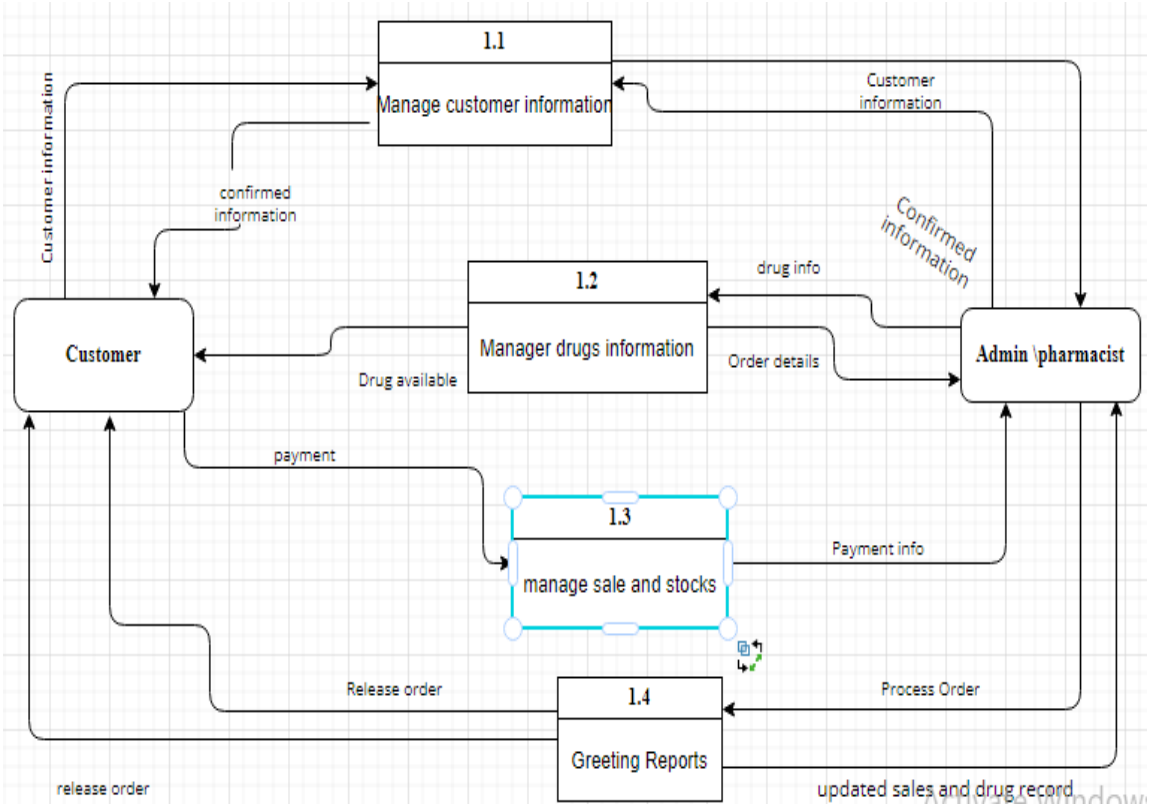
# Zero Level diagram

## First Level Data Flow Diagram

First Level DFD of Pharmacy Management System shows how the system is divided into sub system.Each of which deals with one or more data flows to or from an egent and which provide all together functionalities of Pharmacy Management System.

## Output of First Level DFD

- Customer's management
- Supplier management.
- Sale drug.
- Purchase drug.
- Expenses.
- Generate Order on this basis of sale record.
- Stock management.
- Printing and prepare invoices for customers.
- Printing of customers, debtors, employee sales, purchase and all inventory reports.
- Maintain Drug expiry.
- Narcotic register record.
- User management




**Level 1 DFD diagram**

## Functional Requirement

**REQ-1:** Authenticate the user properly to avoid unauthorized access to the system.

**REQ-2:** Lock the system after ten wrong attempts and show the message to contact to system administrator.

**REQ-3:** Show the message on successful login

**REQ-4:** Display a help button in menu items.

**REQ-5:** Show the contact details of maintenance department of service provider.

**REQ-6**: User will be able to generate Oder by selecting items from item list and add required quantity.

**REQ-7:** User can generate Oder Automatically according to projection period and reorder level.

**REQ-8:** Show the successful message on posting Oder to database.

**REQ-9:** Only admin can manage user.

**REQ-10:** Admin will be able to perform CRUD operation on user data.

**REQ-11:** Admin will be able to add different role to user and set permission to different modules.

**REQ-12:** Admin will be able generate different report according to customer, user, manufacture, medicine

**REQ-13:** Optional to generate report for specific time period.

**REQ-14:** User will be able to store expenses details and view list of expenses.

**REQ-15:** Select different categories of expense by clicking category list.

**REQ-16:** User will be able to perform CRUD operation on customer data.

**REQ-17:** Set credit limit, status, and discount for a specific customer.

**REQ-18:** User will be able to add purchase in invoice.

**REQ-19:** User adds supplier, invoice number, subtotal and items.

**REQ-20:** User will be able to perform CRUD operation on supplier.

**REQ-21:** Store supplier details.

**REQ-22:** User will be able to add sale invoice.

**REQ-23:** User adds customer, sale type, subtotal and items to perform sale.

# 5 Other Nonfunctional Requirements

### 5.1 Performance Requirements

The system must be interactive, and the delays involved are very less in every action-response of the system, In case of Searching Drugs through the database there should be a delay of no more than 1 second. Also Delete/ updates involves very little delay. and connecting to the My Sql server the delay to make a successful connection should be less for effective real time communication.

### 5.2 Safety Requirements

The software is completely environmentally friendly and does not cause any safety violations.

### 5.3 Security Requirements

Login should be required to access the system which stops unauthorized access. Information transmission should be securely transmitted to DB without any changes in Information to avoid disturbances in orders and billing.

### 5.4 Software Quality Attributes

#### 5.4.1 Adaptability:

There can be a change in information stored in the database about Employees and inventory.

#### 5.4.2 Availability:

The system is up and running for most of the time and server should not down to avoid inconvenience of the customers.

#### 5.4.3 Correctness:

The bill generated by the application must be accurate.

**5.4.4 Flexibility:**

If need arises in the future, software can be modified to change the requirements.

**5.4.5 Maintainability:**

Software can be easily repaired if a fault occurs.

**5.4.6 Reusability:**

Current version can be used in the future versions with more functionality added.

**5.4.7 Usability:**

Interface of the software is easy to use, so interface should be simple.

## List Of Actors Use in Use Case :

**Administrator:** The main user responsible for managing the overall system including configuring settings managing user accounts and overseeing system operations.

**Patient/Customer:** The individuals who visit the pharmacy to obtain medications request prescription refills or seek advice from the pharmacist.

**Pharmacist:** The primary user who interacts with the pharmacy management system on a daily basis responsible for dispensing medication, managing inventory, processing prescriptions, and providing patient counseling.

**Supplier or wholesaler:** supplier or wholesaler of pharmaceutical product interact with the system to manage inventory, track deliveries, and update pricing information.

**Prescription management :**The system allow pharmacists to efficiently manages and process prescriptions including verifying and validating prescription ,tracking refill requests, and maintaining a record of dispensed medications.

**Inventory management**The system helps manage pharmacy inventory by tracking stock Levels expiration dates and batch number. It can automate the process of reordering medications and generate purchase order when stock levels are low.

**Drug interaction alerts:** The system provides real-time alerts and warning about potential drug interaction or allergies based in the medication prescribe or dispensed.

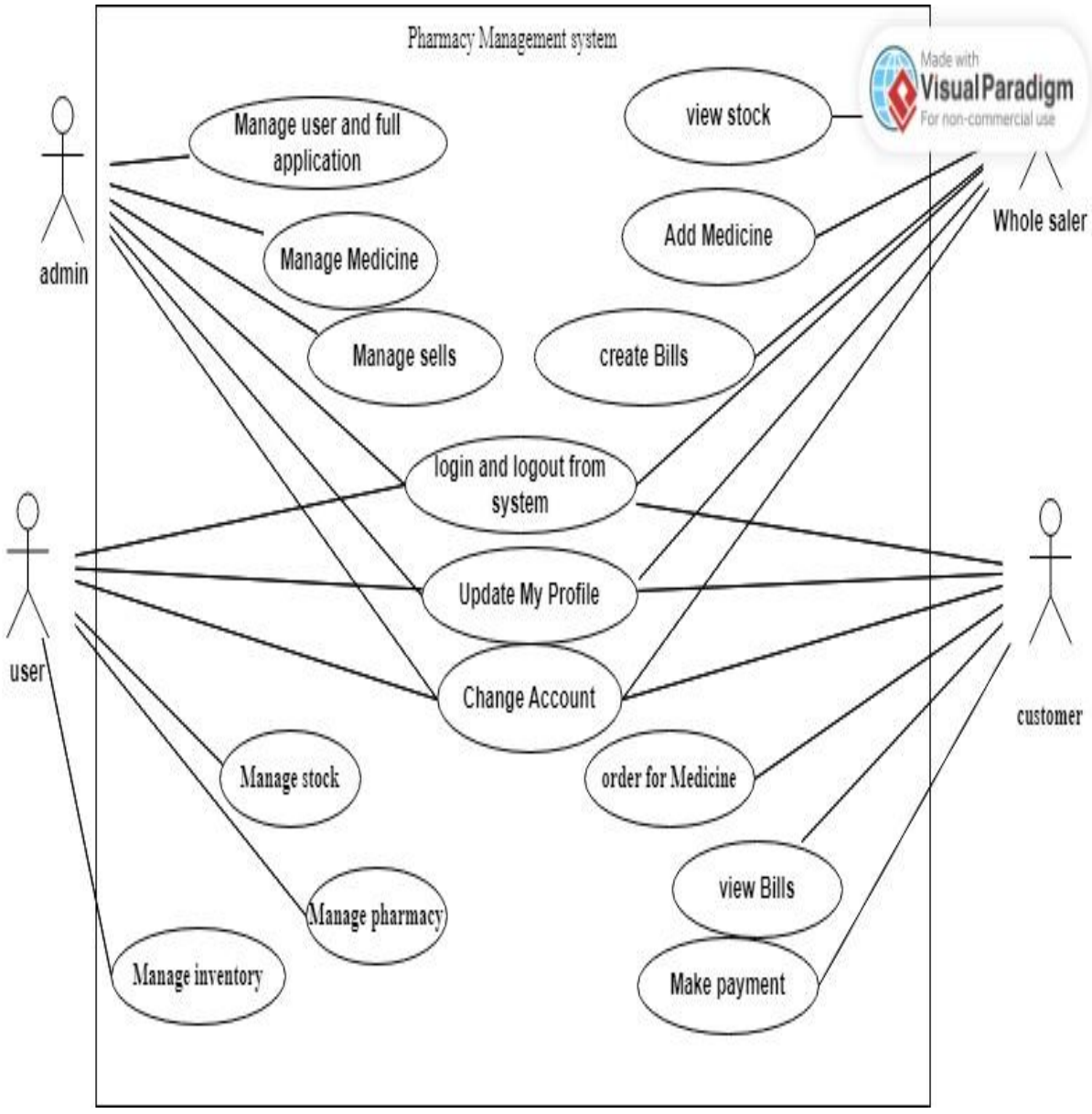
**Billing record:** it maintain the record of transaction and generates invoice for patients.

**Reporting and analytics :**The system generates various reports and analytics to help pharmacists analyze sale data, track medication usage, monitor inventory turnover and identify trends. These insight can assists in making information business decisions.

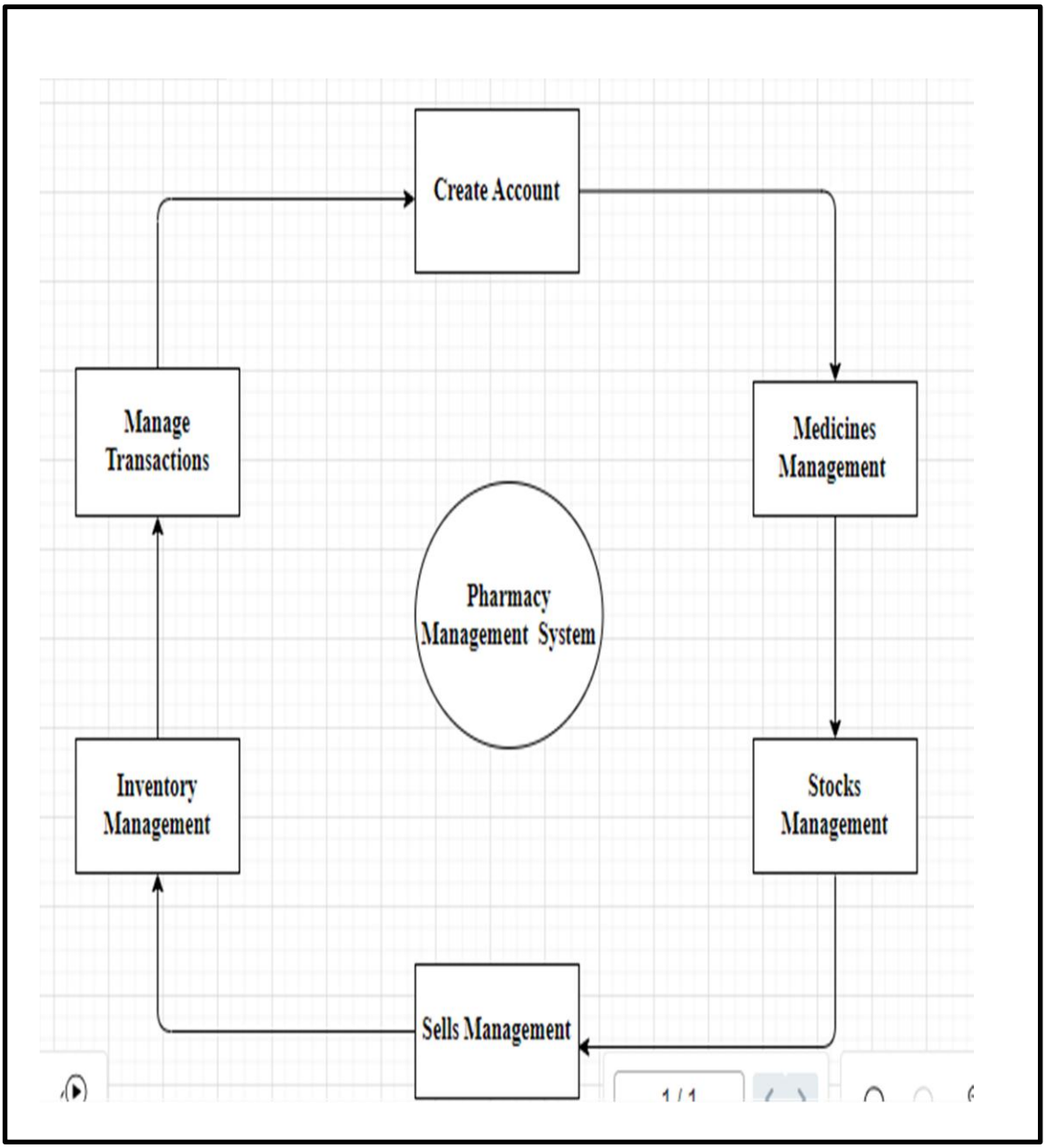
**Barcode scanning :** The system can utilize barcode scanning technologies to accurately identify and track medications reducing the risk of errors and improving efficiency in dispensing and inventory management.

Regulatory compliance: The system help pharmacies stay complaint with regulatory requirements by maintain accurate records, tracking controlled substance and generating necessary reports for audits and inspection.

## Use case diagram of pharmacy management system



# Software Requirements Specification of Pharmacy Management System




## Create Account:

The system should provide the user with an easy to use GUI to facilitate their creating an account.

The system shall ask for an email address and password.

The system shall notify the user if incorrect characters are used in the email or password fields.

The system should notify the user of their email has already been used.

## Medicine Management:

Medicine management in pharmacy refers to the processes and practices involved in the proper handling, storage, dispensing, and monitoring of medications to ensure patient safety and effective treatment outcomes. Pharmacists play a critical role in medicine management, as they are responsible for verifying prescriptions, educating patients about their medications, and preventing potential drug interactions or adverse effects.

## Stock management:

Stock management in a pharmacy is crucial for ensuring efficient operations, optimal patient care, and financial stability. Proper stock management helps prevent shortages, reduce wastage, and maintain accurate inventory levels stock.

## Sells Management:

supplier or wholesaler of pharmaceutical product interact with the system to manage inventory, track deliveries, and update pricing information. The pharmacy will have database to record all stock sells purchases and return.

## Inventory management:

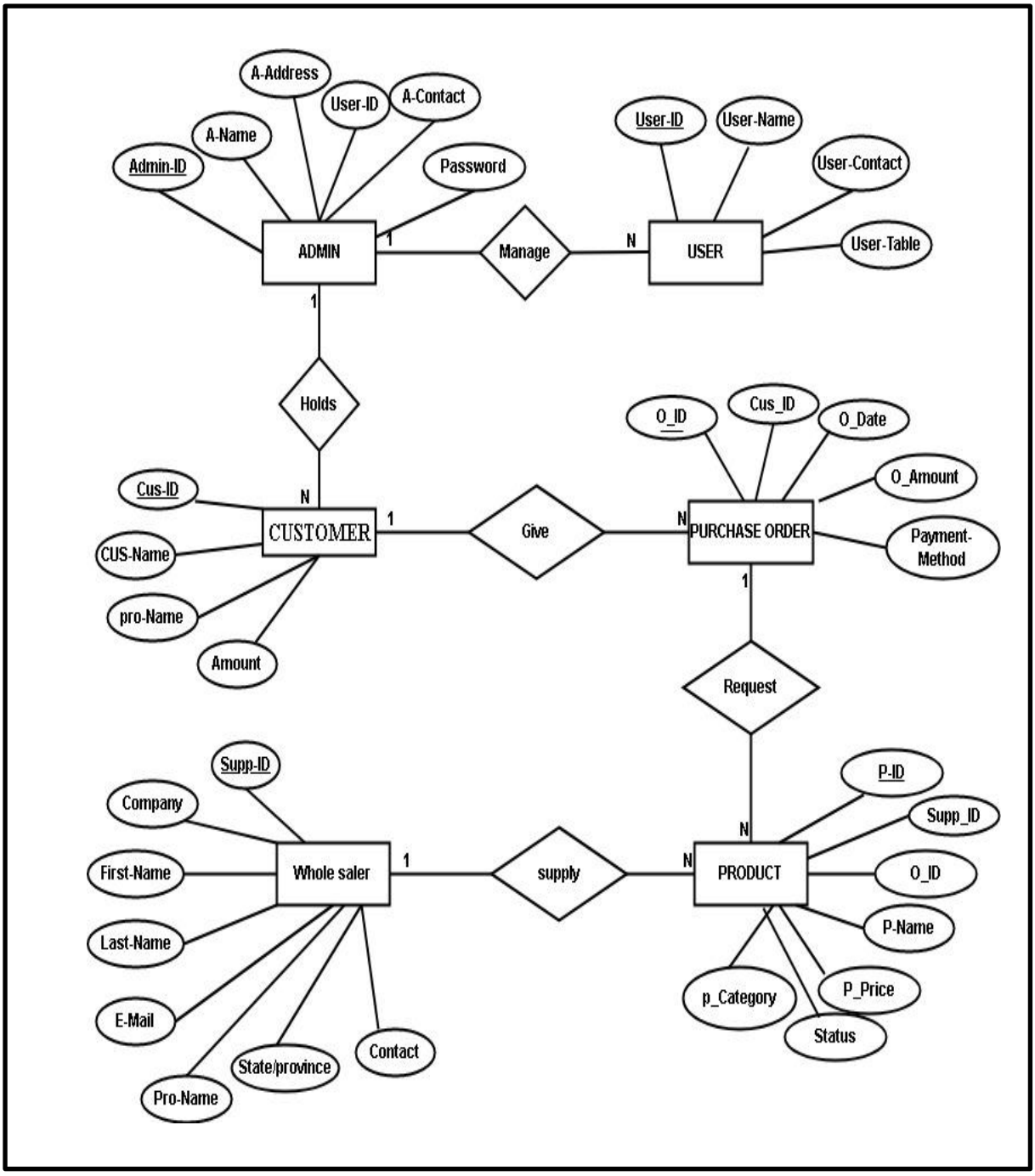
The system helps manage pharmacy inventory by tracking stock

Levels expiration dates and batch number. It can automate the process of reordering medications and generate purchase order when stock levels are low.

## Manage Transactions:

Admin will able to manage (Add ,delete,update view) transactions of members by using just a unique ID. The system will clearly update the status of members.

## Entity Relationship Diagram:




## Relationship between Entities:

**Manage:** it is relationship between ADMIN and USER **.**

- ADMIN can mange one or many USER in branch.
- On the other hand USER can managed by only one admin in branch.

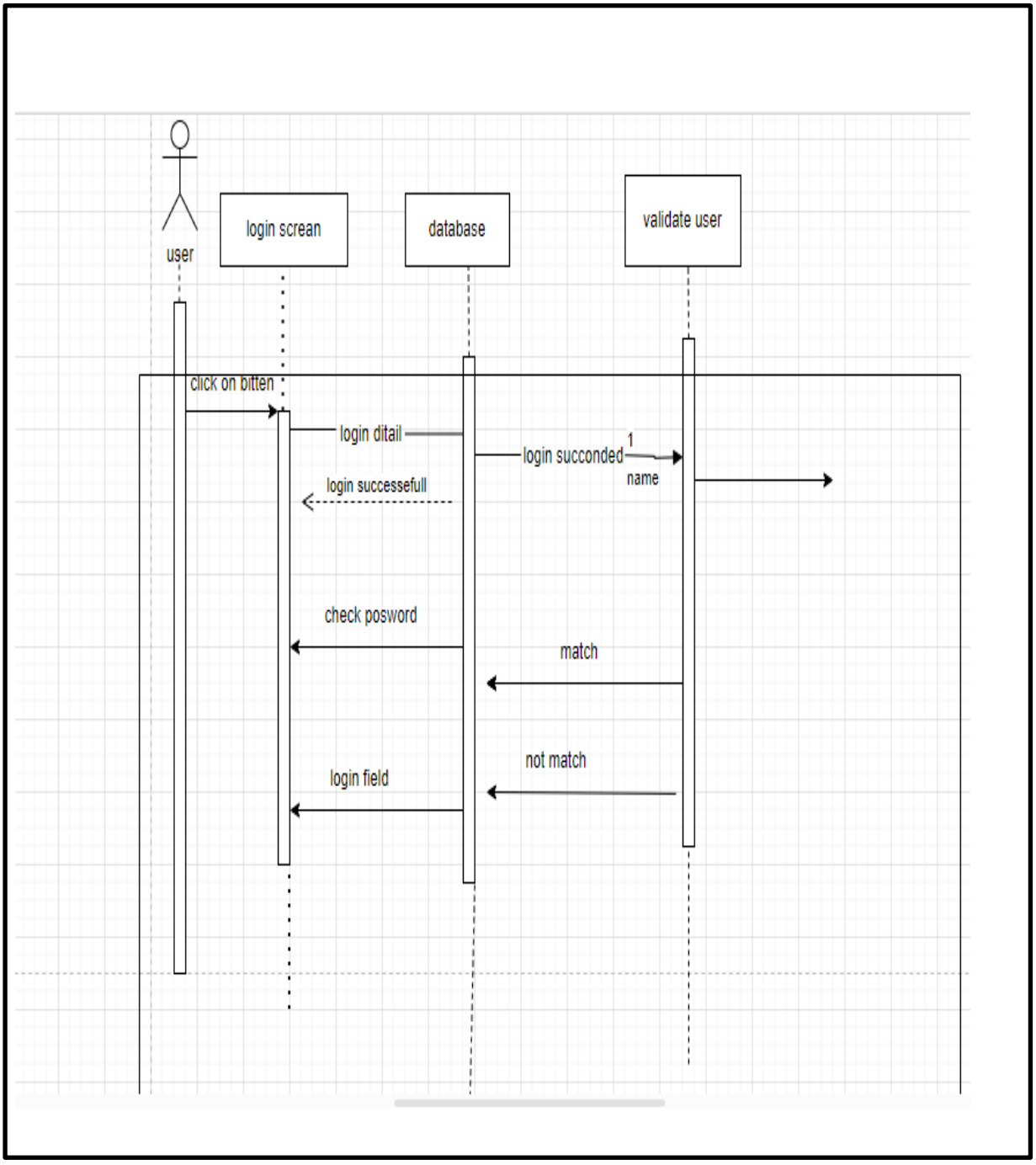
**Give:** it is relationship between CUSTOMER and PURCHASE ORDER**.**

- CUSTOMER gives one or many PURCHASE ORDER of PRODUCT.
- On the other hand many product is PURCHASE ORDERD by one CUSTOMER at a time .

**Supply:** it is the relationship between Whole Saler and PRODUCT.

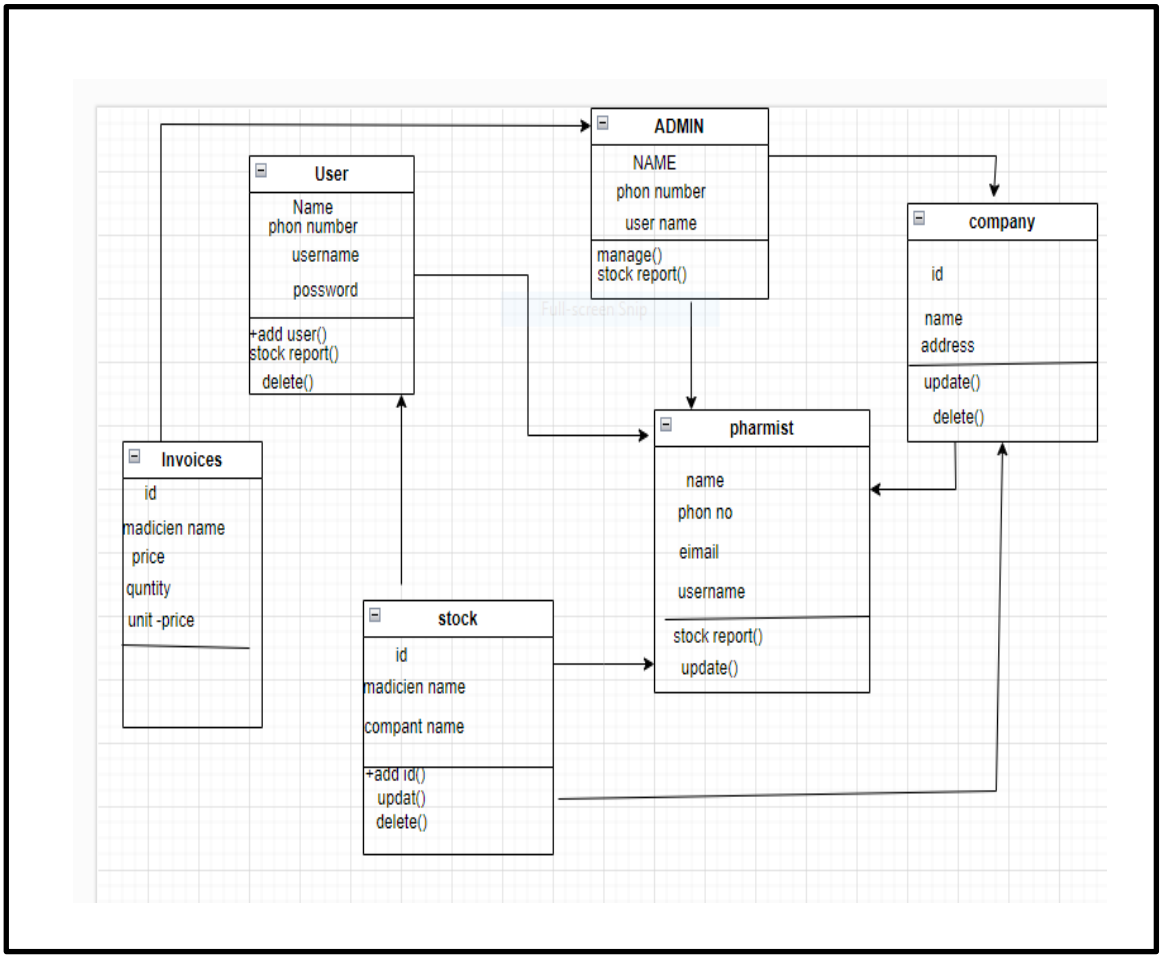
- SUPPLIER can supply one or many PRODUCT.
- On the other hand PRODUCT is supplied by one or many SUPPLIERS.

## Sequence diagram of Pharmacy management system:



- A sequence diagram or system sequence diagram shows process interactions arranged in time sequence in the field of software engineering. It depicts the processes and objects involved and the sequence of messages exchanged between the processes and objects needed to carry out the functionality.
- A lifeline represents an individual participant in a sequence diagram.

## Class diagram of pharmacy management system




## Work Breakdown Structure:

A work-breakdown structure in project management and systems engineering is a deliverable-oriented breakdown of a project into smaller components. A work breakdown structure is a key project management element that organizes the team's work into manageable sections

## Break down tasks and subtasks:

Once you have a clear understanding of the project scope, break it down into smaller, manageable tasks and subtasks. This will help you organize and prioritize the work that needs to be done. Consider tasks such as securing permits and licenses, designing the layout of the pharmacy, ordering inventory, hiring staff, and setting up IT systems.

## Work Break Down Structure Of pharmacy Management System: