## Introduction:

A dataflow diagram that is a two dimensional diagram, explains how data is processed and transferred in a system. This graphical depiction identifies each source of data and how it interacts with other data sources to reach a common output.

Individuals seeking to draft a data flow diagram must identify external inputs and outputs, determine how the inputs and outputs relate to each other and explain with graphics how these connections relate and what they result in. This type of diagram helps business development and design teams visualize how data is processed and identify or improve certain aspects.

The data flow approach has four chief advantages over narrative explanations of the way data move through the system:

- Freedom from committing to the technical implementation of the system too early.
- Further understanding of the interrelatedness of systems and subsystems.
- Communicating current system knowledge to users through data flow diagrams.
- Analysis of a proposed system to determine if the necessary data and processes have been defined.

A physical dataflow diagram shows how the system will be implemented, including the hardware, software, files and people involved in system which helps in determination of user interfaces, nature of processes and necessary data stores.

## Activities of the Project:

Our project is a Pharmacy management system that is for a specific drug store. In order to develop our project we have prepared a list of activities that helps in creating our dataflow and use case diagram. The list of activities is described below:

- It is also important to have knowledge about the products of its business. Information on pharmaceutical products should be accumulated.
- Database should be created properly for the application. Tables with appropriate attributes and constraints should be featured so that data is saved correctly without redundancy.
- All the information that are documents in different forms should be placed in database.
- Features to keep business accounts such as revenue, expense, assets, liability must be done decently.
- Construction of account structure have to be password protected for a secured management.

## Main Process and Sub Process Names, Entity Names, DB Names:

## High-level Process:

Pharmacy Management System

**Subsystem Process:**

- Sales
- Purchase
- Supervise
- Account Log In

**Detailed Process:**

- Sales:
  - Add order
  - Add prescription
  - Transaction
  - Item Trade
- Purchase:
  - Add order
  - Transaction
  - Supply trade
- Supervise:
  - Data manipulate
  - Delete records
  - Create Records
  - Read records
  - Update records
- Account Log In:
  - Information input
  - Account verification

**Data Stores:**

Database table names:

- Billing table
- Owner table
- Salesman table
- Stock table
- Prescription table

Manual Records:

- Transaction Record File

**Entity Names:**

- Customer
- Owner
- Salesman
- Pharmaceutical Company

- System

**Context Level Diagram:**

A context level diagram is a diagram that defines the boundary between the system, or part of a system, and its environment, showing the entities that interact with it. This diagram is a high level view of a system. It is similar to a block diagram.

Firstly, we will discuss about our Owner entity who will supervise the whole system and order items from the pharmaceuticals company so as pay for those items. Then comes Customer entity who will order medicines to the system and will pay when ordered item will be served. Salesman which is another important entity will sell pharmaceuticals items to the customers and receive payment from them. Our system will back order items to the inventory entity if any item is not available. Pharmaceuticals Company is another entity that will deliver ordered items and will be paid according to it. This five entities in context level diagram will hopefully handle this system.

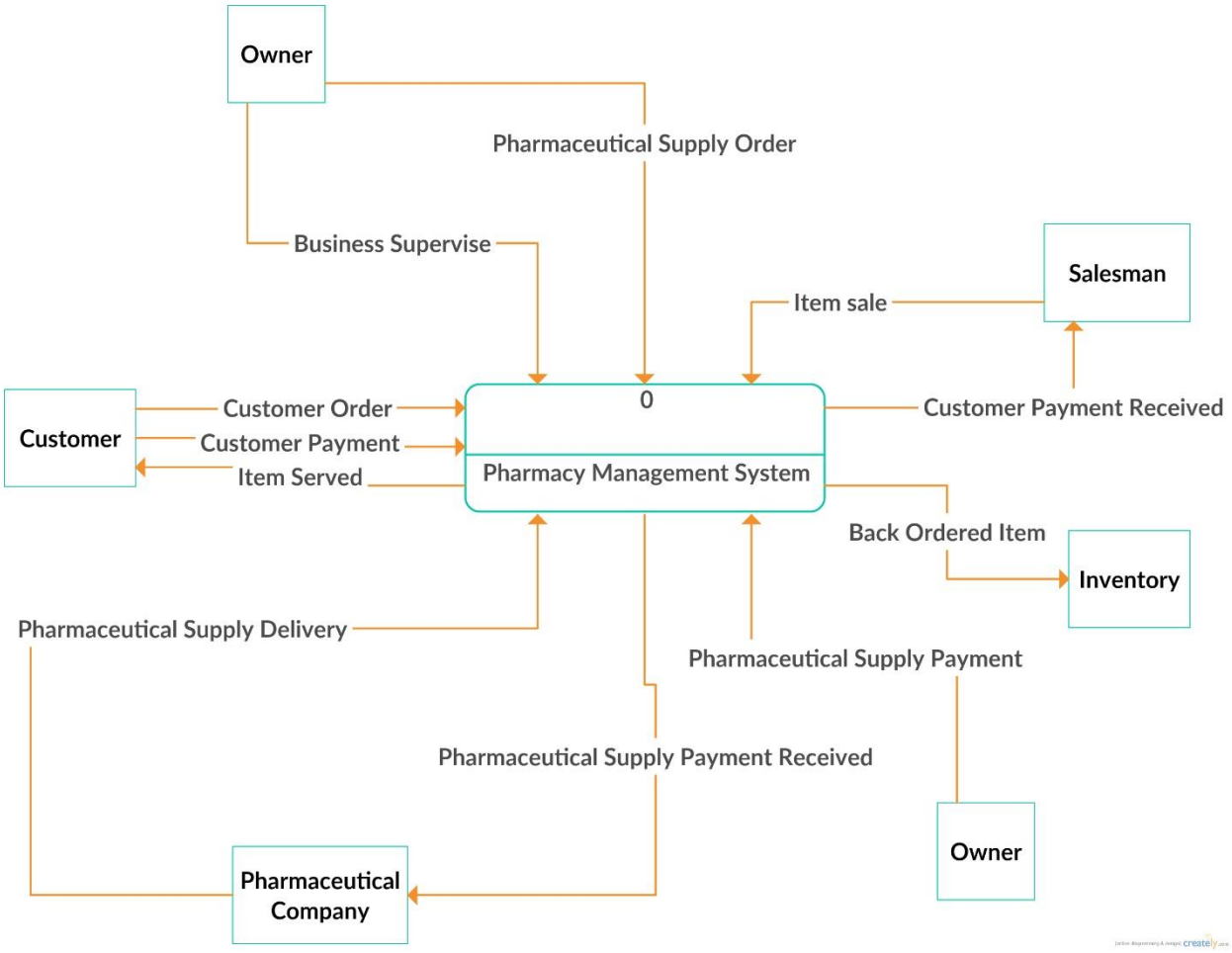


Figure: Context Level Diagram

**Level 0 Diagram:**

The Level 0 DFD shows how the system is divided into sub-systems (processes), each of which deals with one or more of the data flows to or from an external agent, and which together provide all of the functionality of the system as a whole.

At first through the Sales process customers will order medicine and pay for the medicines after being served properly. Back order items to the Inventory entity happens if any item is not available. The entity Salesman will sale item to the customer and will be paid for that via Sales process too. The item record will be saved in a database table named 'Stock DB'. The process Purchase will receive data from 'Stock DB' via this process as well as the Pharmaceuticals company will deliver ordered items and will be paid according to it. The Owner will order items from the Pharmaceutical company so as pay for those items through this process. The Owner will govern the records within the process Supervise and the information of this will be saved in two database 'Stock DB' and 'Users DB' both via two different CRUD operation. The owner and the salesman will load information by the process Account Login and will retrieve data from a database name 'Users DB'. Thus in level 0 dividing the system into sub-system we will try to develop our project.

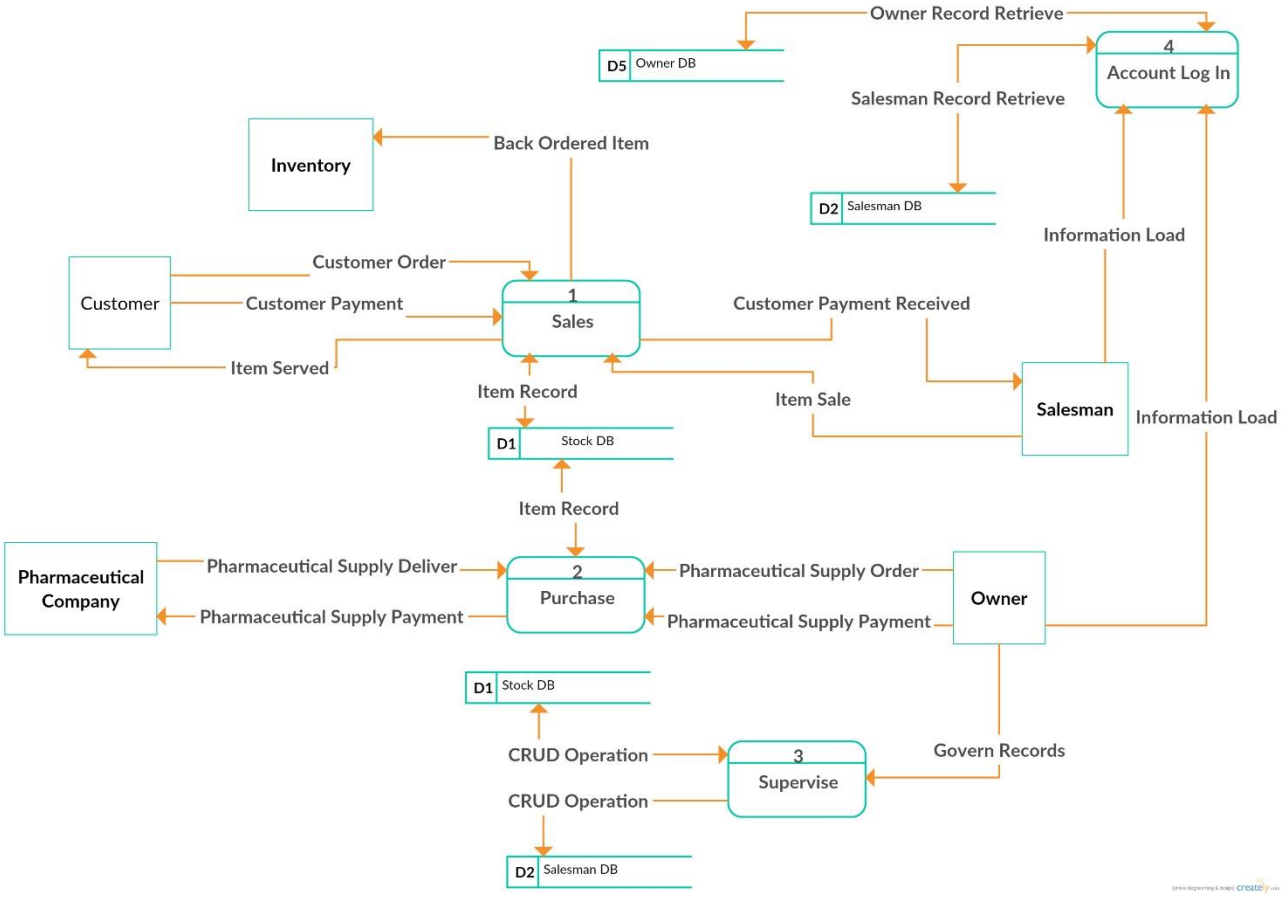


Figure: Level 0 Data Flow Diagram

**Level 1 Diagram:**

A level 1 data flow diagram offers a more detailed look at the processes that make up an information system than a level 1 DFD does. It can be used to plan or record the specific makeup of a system.

**Level 1 Sales Diagram:**

Customer will order medicine through the process Add Order and salesman will receive order via this process too. Within this process the orders will be back to the inventory if any item is not available. The customer will show prescription and the salesman will receive it by the process Add Prescription. The prescription record will be saved in a database table named 'Prescription DB'. The customer will pay and the salesman will receive payment by the process Transaction and this record will be updated in a database table 'Billing DB'. The salesman will handover the ordered items and the customer will be served it through the process Item Trade and the record of this will be updated in a database table 'Stock DB'.

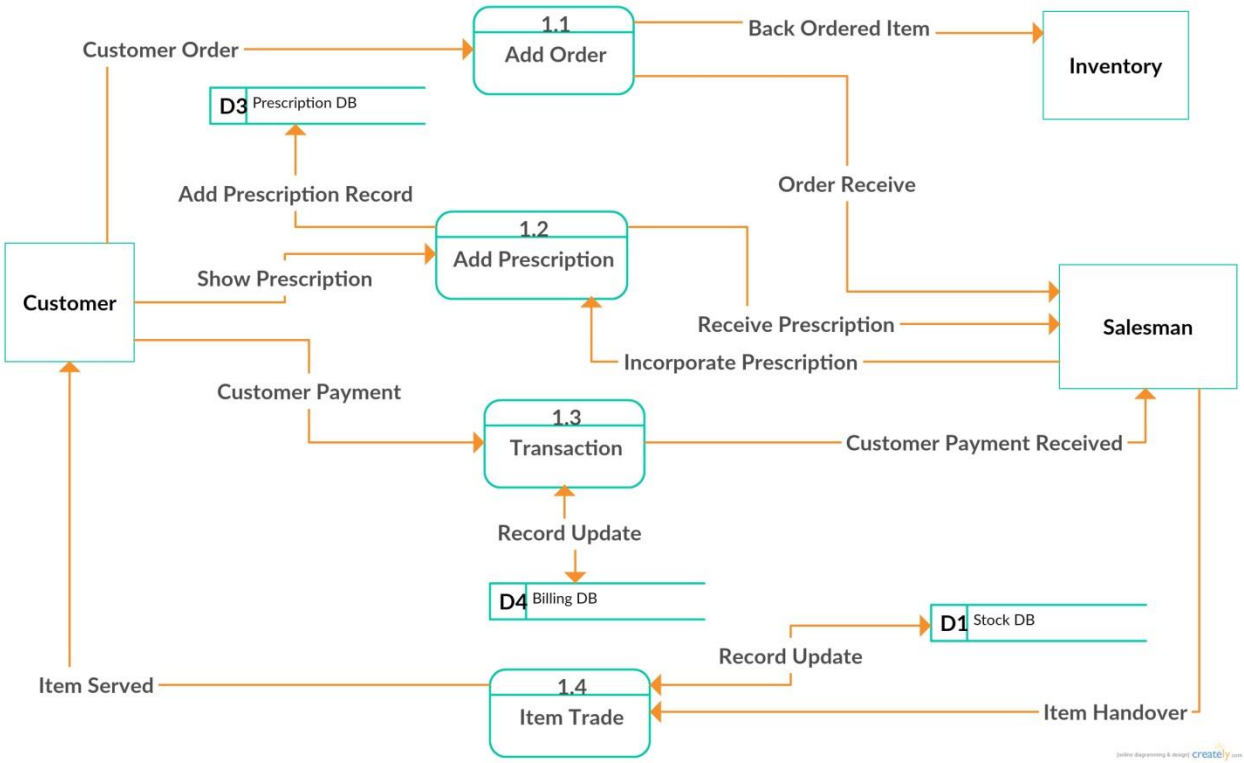


Figure: Level 1 Sales Diagram

**Level 1 Purchase Diagram:**

In this diagram owner will order items from the pharmaceuticals company and the pharmaceuticals company will receive it via Add Order process. Owner will pay for pharmaceuticals product and the pharmaceuticals company will receive supply payment by the process Transaction. This transaction record will be updated in a manual file named 'Transaction Records File'. The pharmaceuticals company will deliver medicine and owner

will receive it within the process Supply Trade and this record will be updated in a database table named 'Stock DB'.

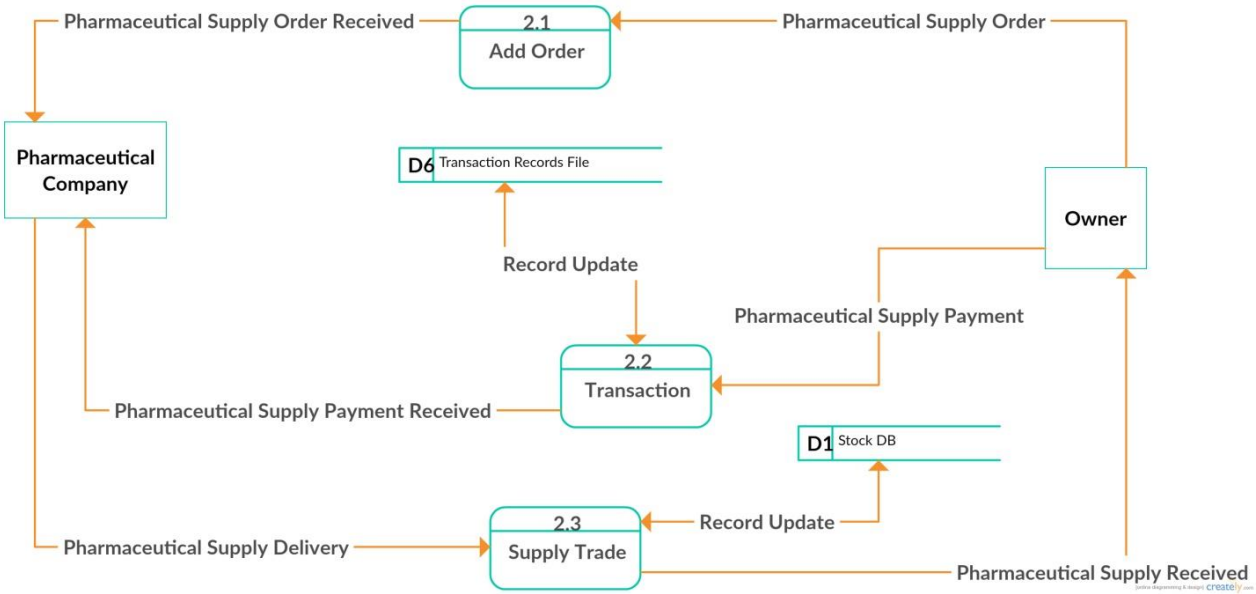


Figure: Level 1 Purchase Diagram

**Level 1 Supervise Diagram:**

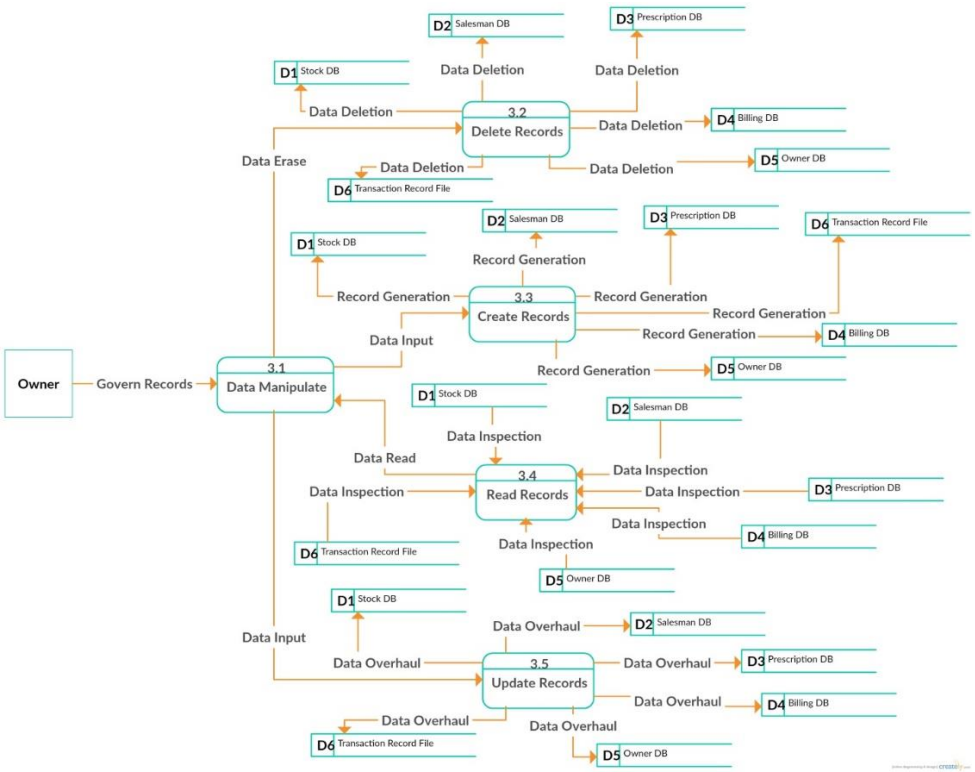


Figure: Level 1 Supervise Diagram

The Supervise process gives the Owner the power to govern the whole system. He uses the Data Manipulate process for this purpose. This process leads to four others processes that are Delete Records, Create Records, Read Records, Update Records. These processes are responsible for record deletion , creation, inspection and updation in the five database tables and the single manual record file.

**Level 1 Account Login Diagram:**

In this diagram we can see that owner and salesman will load information within the process Information Input. This information will scrutinize their account by the process Account Verification. Here the input information will be checked accordingly with database table information. When an user tries to log in as Owner, the loaded data will be checked with the saved data in 'Owner DB' table. Also when an user tries to log in as Salesman, the data will be compared to the information saved in 'Salesman DB' table. Through the process Account Verification if someone wrongly tries to log in, will not be allowed in the system and error will be generated. Thus security will be maintained.

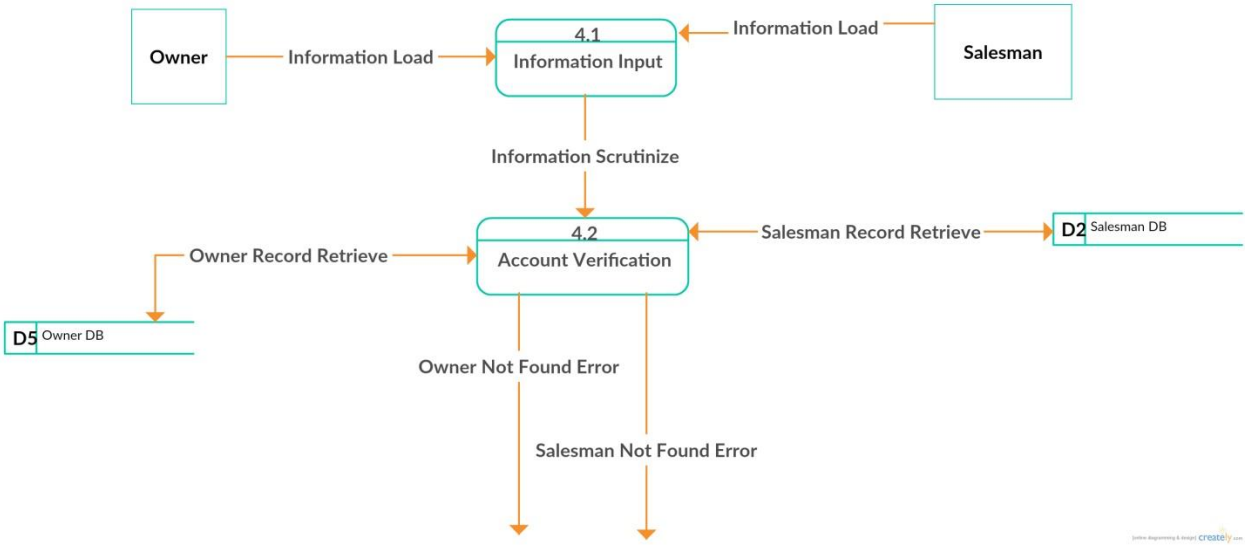


Figure: Level 1 Account Log In Diagram

**Use Case Diagram:**

A use case diagram is a graphic depiction of the interactions among the elements of a system. A use case is a methodology used in system analysis to identify, clarify, and organize system requirements.

In our system application there are five actors. They are:

- Customer
- Salesman
- Pharmaceutical company

- Owner
- System

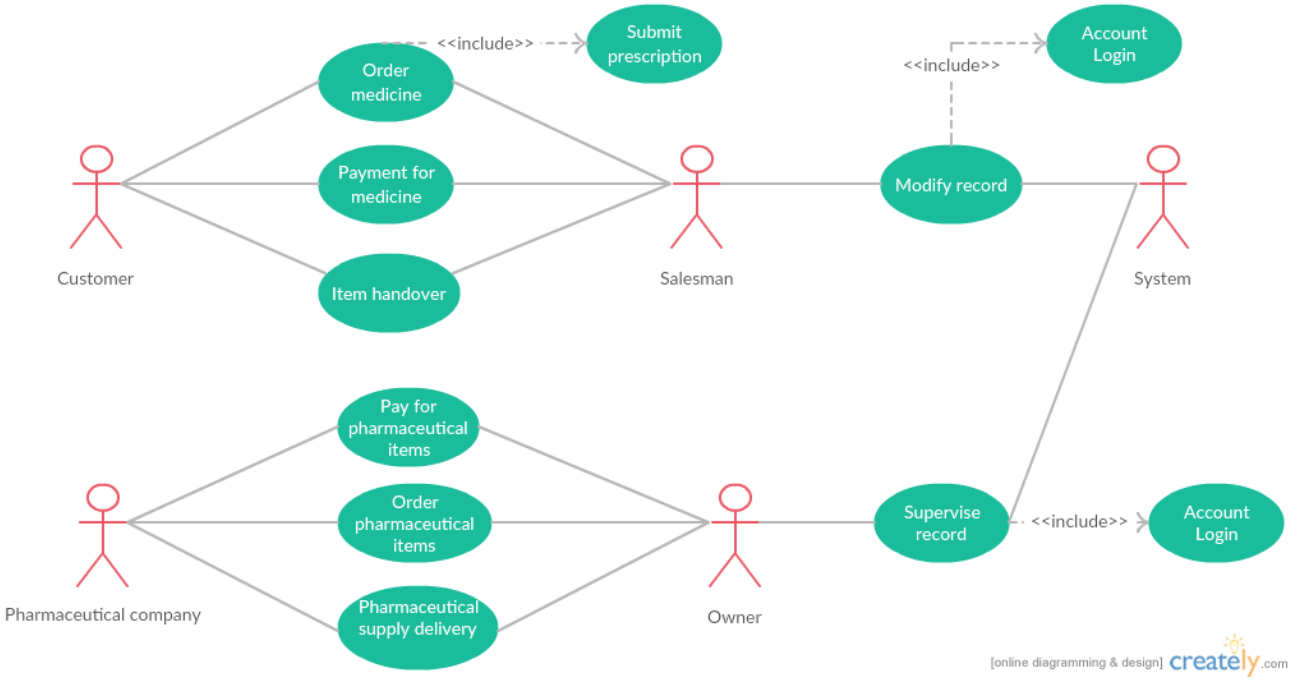


Figure: USE CASE Diagram

Details of Different USE Cases:

**Order medicine:**
Actor: Customer, Salesman.

Pre-Condition: None

Primary path:

- Medicine name
- Quantity
- Prescription

Alternative path:

- Prescription unavailable

**Payment for medicine:**

Actor: Customer, Salesman

Pre-Condition: Order medicine

Primary path:

- Pay bill

Alternative path:

- Billing unavailable

**Item handover:**

Actor: Customer, Salesman

Pre-Condition: Payment for medicine

Primary path:

- Item handover
- Provide receipt

Alternative path:

- Receipt unavailable

**Conclusion:**

This report included the data flow diagrams and USE case diagram of our project. They helped in understanding the current system as well as the proposed system. We hope to implement the system having all the proper attributes with the help of the resources.