NIRMA UNIVERSITY

INSTITUTE OF TECHNOLOGY

Innovative Assignment Report

On

"Wholesale Grain Management System"

B. Tech CSE 2022-23

SEMESTER III

2CS402 Database Management System

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CONTENTS

INTRODUCTION:

In most developing countries such as ours, wholesale businesses are still managed using a pen and paper methodology even with the advent of the age of technology and internet. This can sometimes leads to inefficient handling of day- to-day business matters and can also lead to security threats to the business due to the presence of physical records.

This project aims to develop sales management web application for a wholesale business to improve the efficiency and security of the business. The lightweight nature of the web application makes it ideal for small businesses which cannot afford the expensive alternates present in the market.

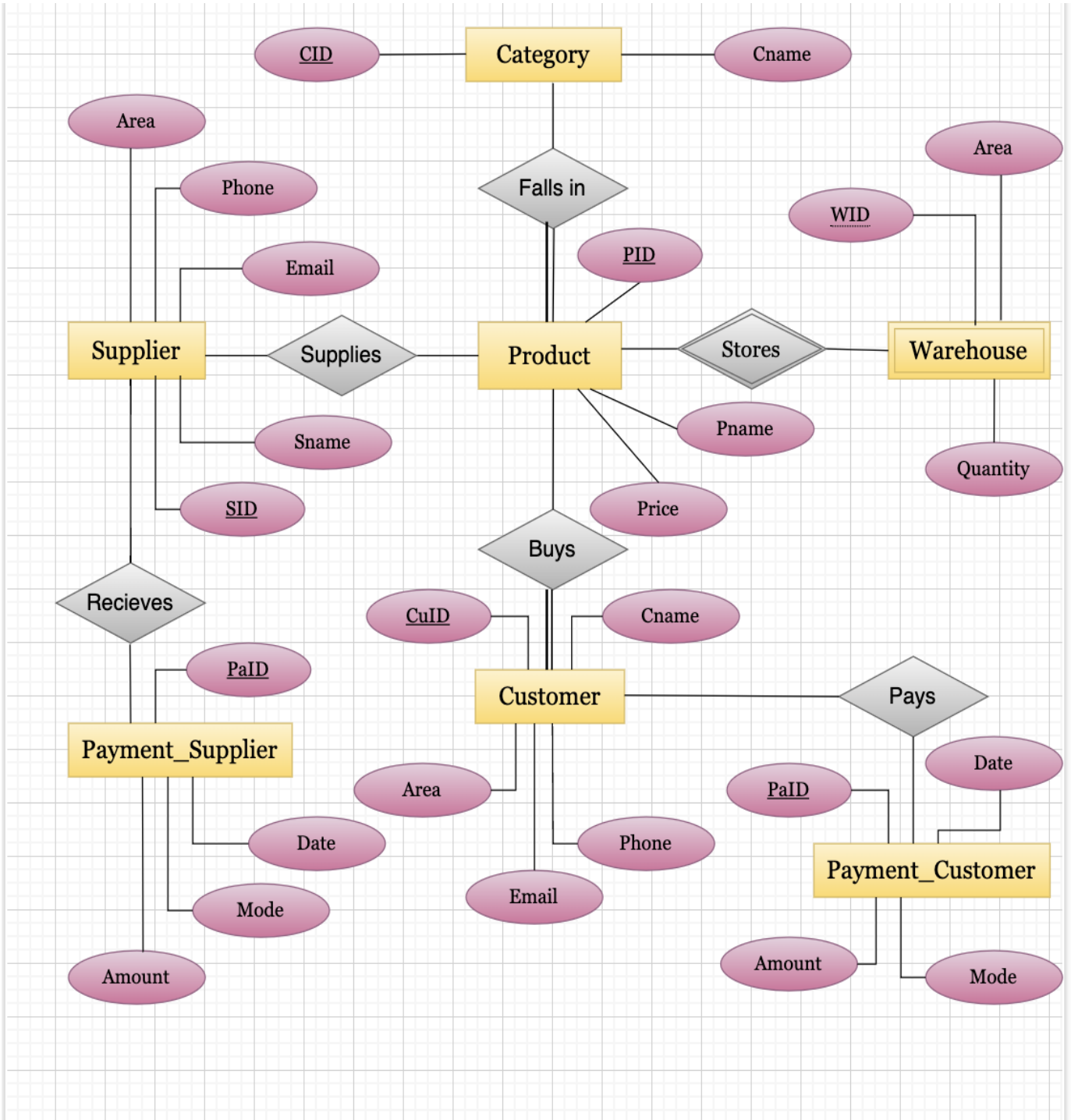
The Wholesale Management System (WMS) has an administrator login for the wholesaler with built-in features to keep a check on the sales and the inventory so as to efficiently run the sales division. The customers and suppliers of the wholesale business can also be registered so as to ensure the smooth functioning of sales. There is also a customer login option which helps the customer in monitoring his purchases from the wholesaler. By having the above features, the WMS greatly simplifies the daily functioning of the business.

Since, many developed countries already use such software to speed up daily business activities; a lot of information is available in the public domain regarding the desirable structure of such software. We have used this information to design and model our project.

SOFTWARE REQUIRED:

- Backend (Database): MySQL version 5.7
- Frontend (Web Technologies): Python jupyter notebook

RELATIONAL MODEL:



APPLICATIONS:

There are two types of accounts: Administrator and Customer. Features for the Administrator:

- Add & Update Product Details by accessing them category-wise.
- Add & Update Supplier Details
- Add & Update Customer Details
- Stock Maintenance (Warehouse)
- Add a new transaction to the system as it happens offline
- Add & Store the payment details accordingly.
- Add & Store the payment details that might be done through the supplier's side.

CONSTRAINTS:

TABLE NAME	ATTRIBUTE	CONSTRAINT TYPE
Category	CID	Primary key
	Cname	Not null
Product	PID	Primary key
	Price	Not null
	CID	Foreign key
Customer	CuID	Primary key
	Cname	Not null
	Area	Not null
	Phone	Not null

	Email	Not null
Supplier	SID	Primary key
	Sname	Not null
	Area	Not null
	Phone	Not null
	Email	Not null
Payment_Customer	PaID	Primary key
	CuID	Foreign key
Payment_Supplier	PaID	Primary key
	SID	Foreign key
Warehouses	WID	Not null
	Area	Not null
	PID	Not null
	Quantity	Not null
	(WID, PID)	Primary key
	PID	Foreign key

WEAK ENTITY:

A weak entity is an entity that cannot be uniquely identified by its attributes alone; therefore, it must use a foreign key in conjunction with its attributes to create a primary key. The foreign key is typically a primary key of an entity it is related to.

In our model we have considered the ***warehouse*** entity to be the weak entity.

CARDINALITY:

Cardinality defines the number of entities in one entity set, which can be associated with the number of entities of other set via the relationship set.

1) Many to Many

One entity from a table can be associated with more than one entity from another table and vice versa.

- Supplier ⇔ product
- Product ⇔ warehouse;
- Product ⇔ Customer

2) One to Many:

One entity from entity set A can be associated with more than one entities of entity set B however an entity from entity set B, can be associated with at most one entity.

- category → product
- supplier → payment_supplier;
- customer → customer_payment;

3) Total Participation:

It specifies that each entity in the entity set must compulsorily participate in at least one relationship instance in that relationship set.

In the model we have considered the below two relations with the entity having total participation is underlined:

- category → product
- product → customer

TRIGGERS:

A trigger is a set of SQL statements that reside in system memory with unique names. It is a specialized category of stored procedure that is called automatically when a database server event occurs.

In the model there are two primary triggers:

1) **Price_trigger:**
   If the price entered is less than 0, the server will automatically input zero in the table.
2) **Quantity_trigger:**
   If the quantity is less than 0, the server will automatically input zero.

CONCLUSION:

Thus, this project on wholesale management system can make the issue of the storage and tracking of various wholesale products and its suppliers as well as customers miniscule.