17/Nov/2020

CS313 DBMS Project Report

Group Name : G8

Team members:

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Rupesh Kalantre (180010029)

Project Name : Resource management for fairly small grocery stores

Overview

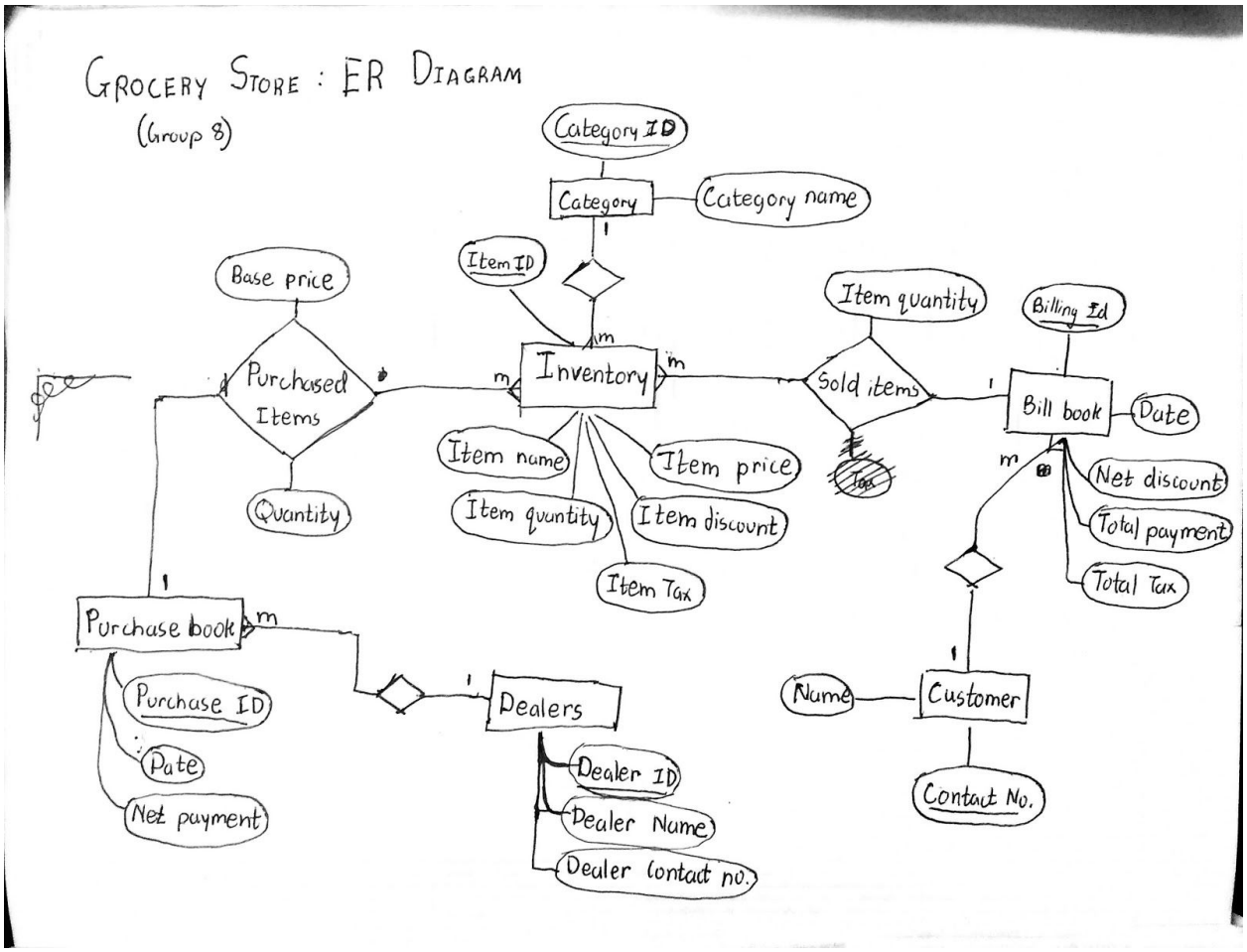
This project is about maintaining the grocery prices, inventory stock, list of suppliers, monthly accounts using database systems through a website application interface. While billing, our application will provide the available stock count for the item, it's price, current discount to the cashier. This application will also help with the billing process and organizing it. It will become easier for the owner to track details of items he brought like the date,dealer,etc. Our application will prepare a monthly report which will help the owner to make future decisions.

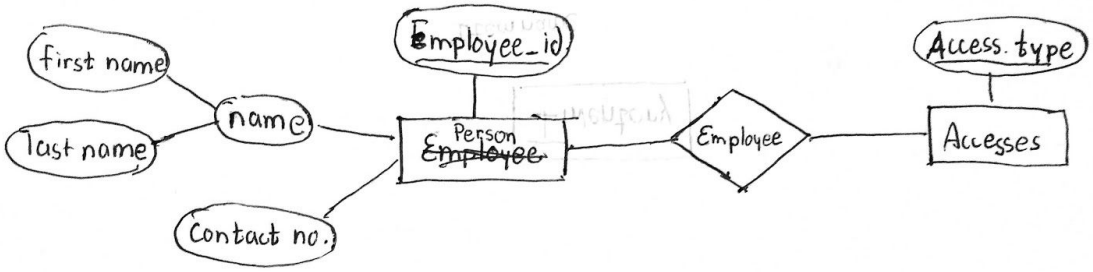
Since our project is more concerned with quantity of the item/good and the time of sales, data we will be handling will thus be of quantitative and time series in nature. The relationship that stores current record will have daily transactions and the relationship that stores monthly statistics will have monthly transactions.

There are mainly three users, owner, cashier and stock manager.They will have their own credentials for logging in to the web application interface.Owner will have complete access to the database, while cashier and stock manager will be given restricted access. Cashiers will be given access to sales relation and view access to inventory. The stock manager will have access to inventory and view access to the statistics table.

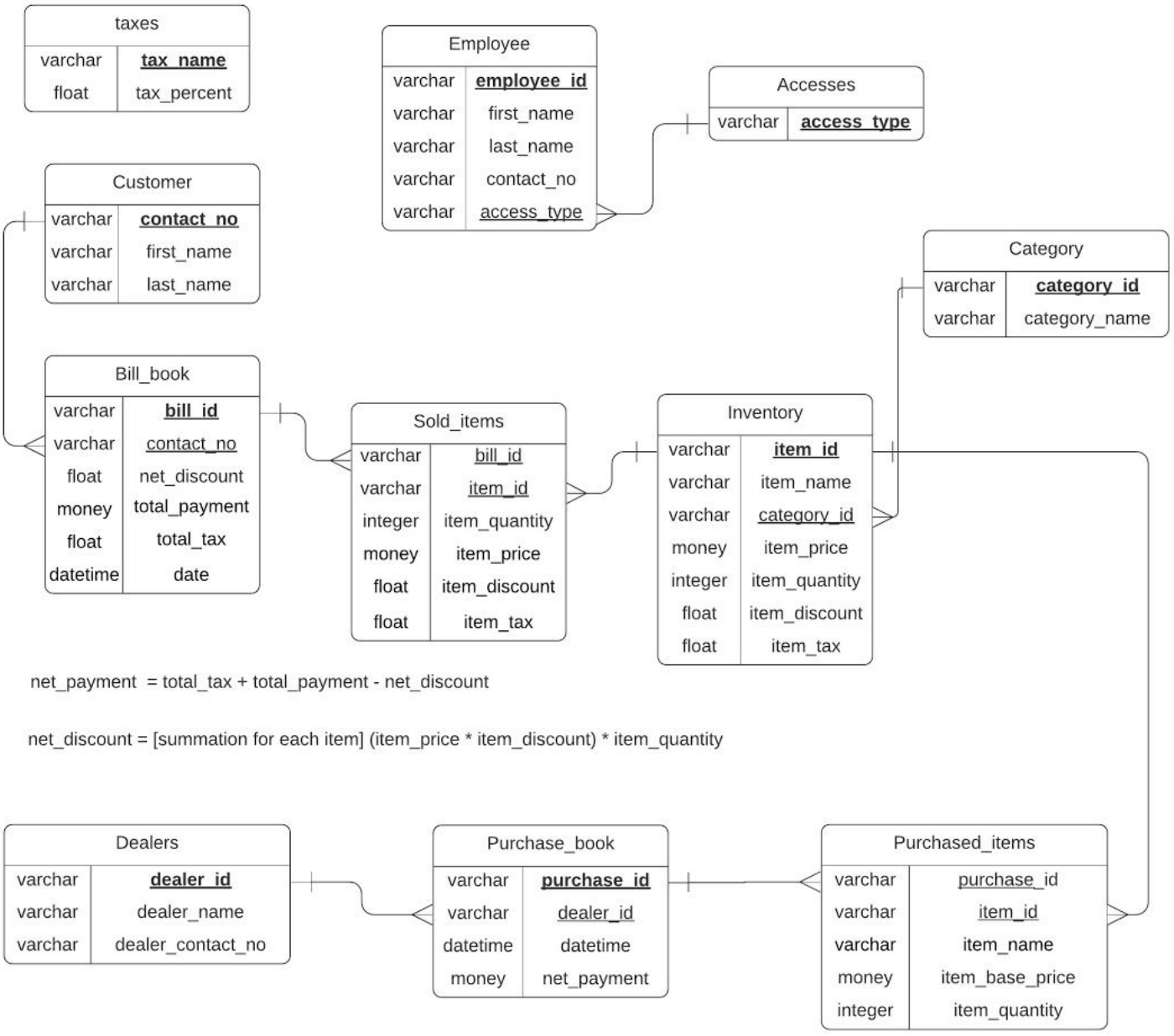
This application is very useful for stores. Many stores have a hard time maintaining their inventory due to lack of a centralised and easy to maintain inventory database. The billing machine stores data in its own database, which is separate from the inventory database. If the owner wants statistics of the sales he/she needs to refer to both billing data and inventory data. Our application provides a single and centralized database with different user rights so that data can’t be exploited. Since there are **many** shops that have the same structure,i.e.inventory-sales-statistics, our application can help many shopkeepers, and reduce their headache of maintaining different databases.

ER Diagram


Grocery Store : ER Diagram
(Group 8)
Category ID
Category
Category name
Item ID
Base price
Purchased Items
Quantity
Inventory
Item name
Item price
Item quantity
Item discount
Item Tax
Item quantity
Billing Id
Sold items
Tax
Bill book
Date
Net discount
Total payment
Total Tax
Purchase book
Purchase ID
Date
Net payment
Dealers
Dealer ID
Dealer Name
Dealer contact no.
Name
Customer
Contact No.


Employee_id
first name
name
last name
Person
Employee
Contact no.
Employee
Access. type
Accesses

Database relational model

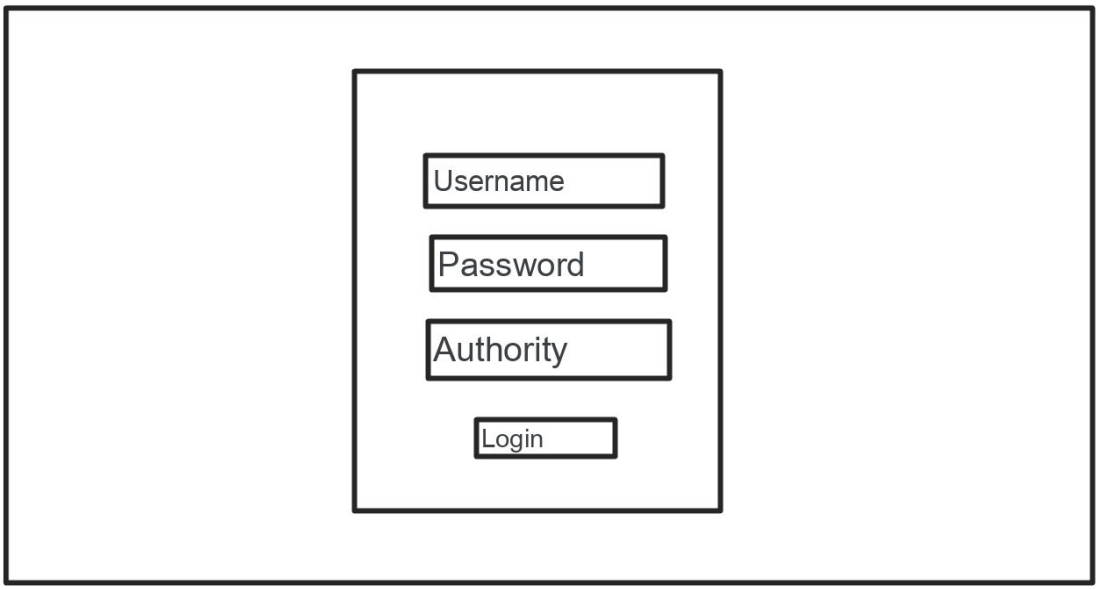


net_payment = total_tax + total_payment - net_discount

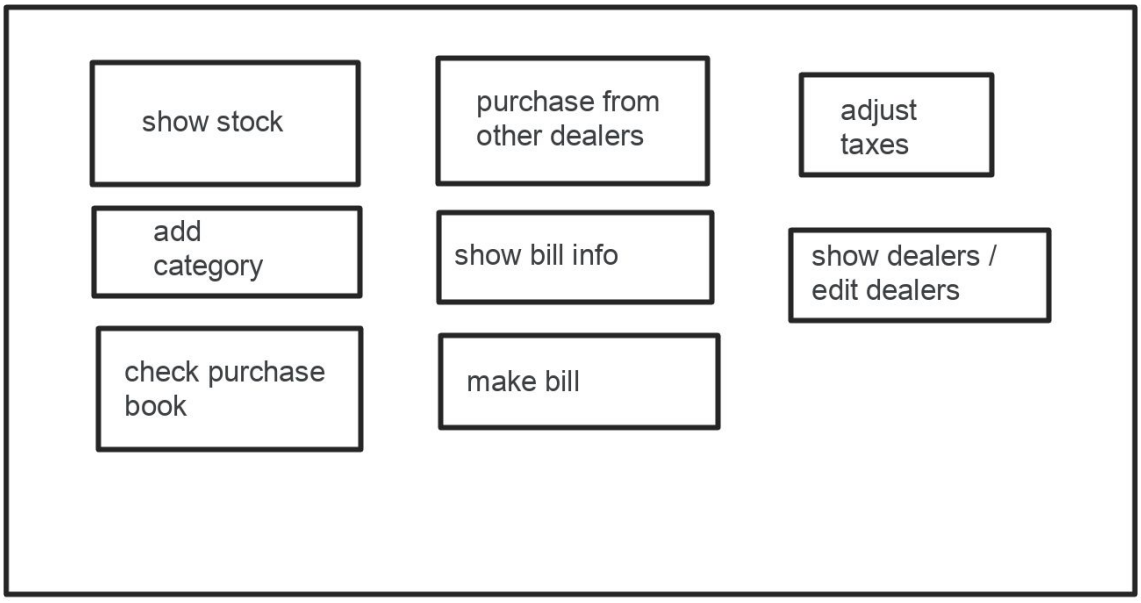
net_discount = [summation for each item] (item_price * item_discount) * item_quantity

Interface design

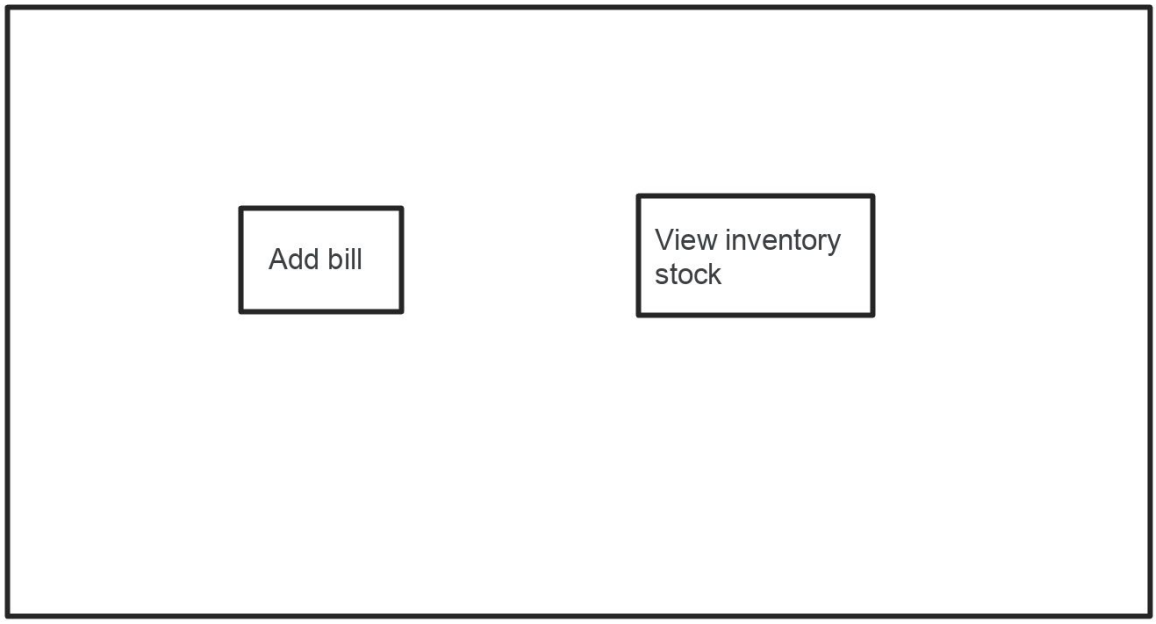
login window



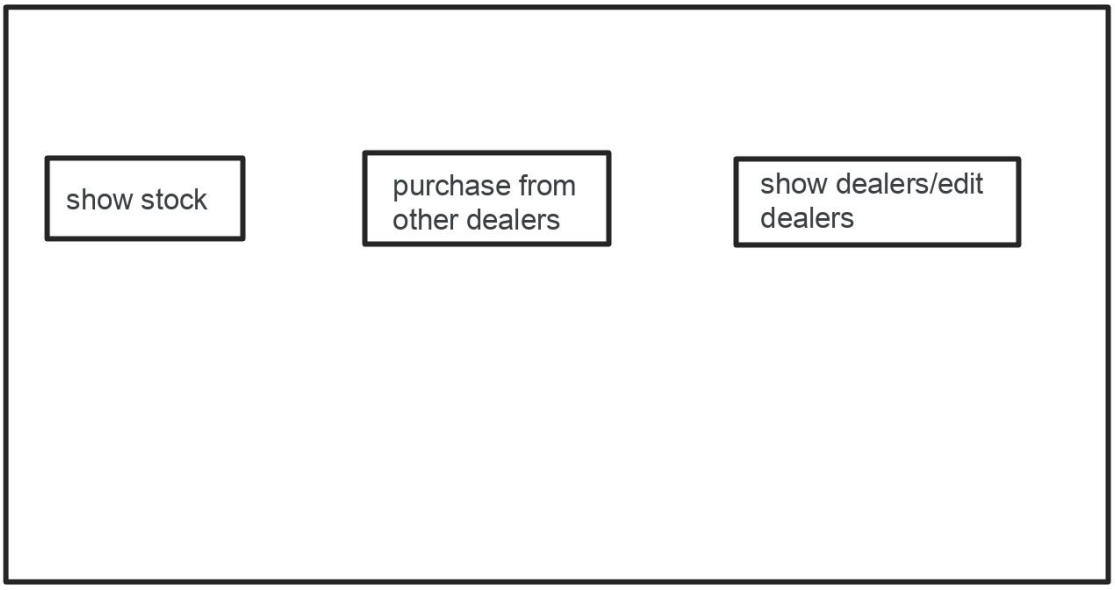
owner window



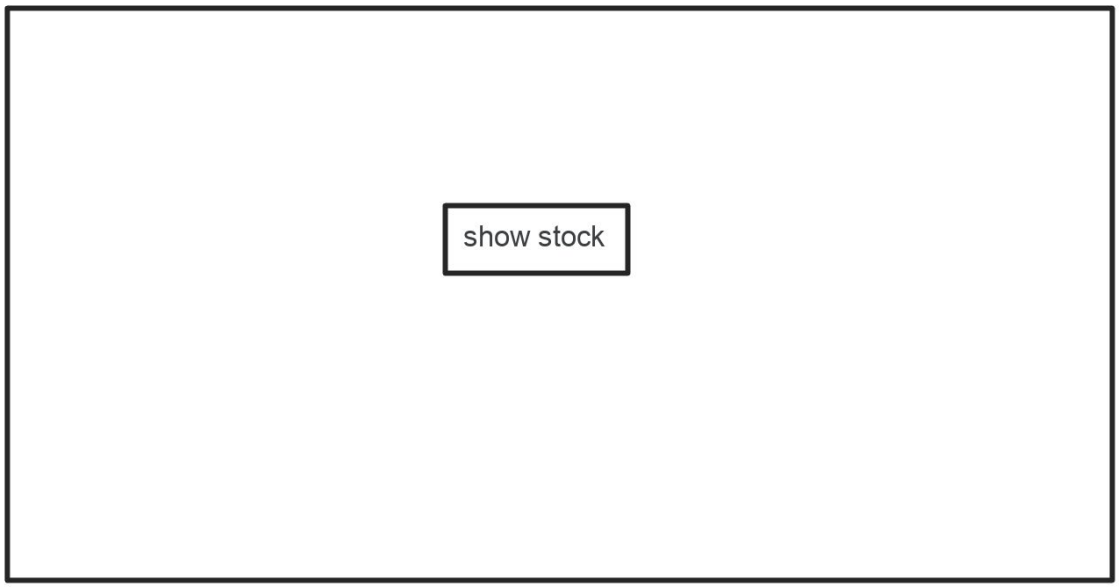
cashier window



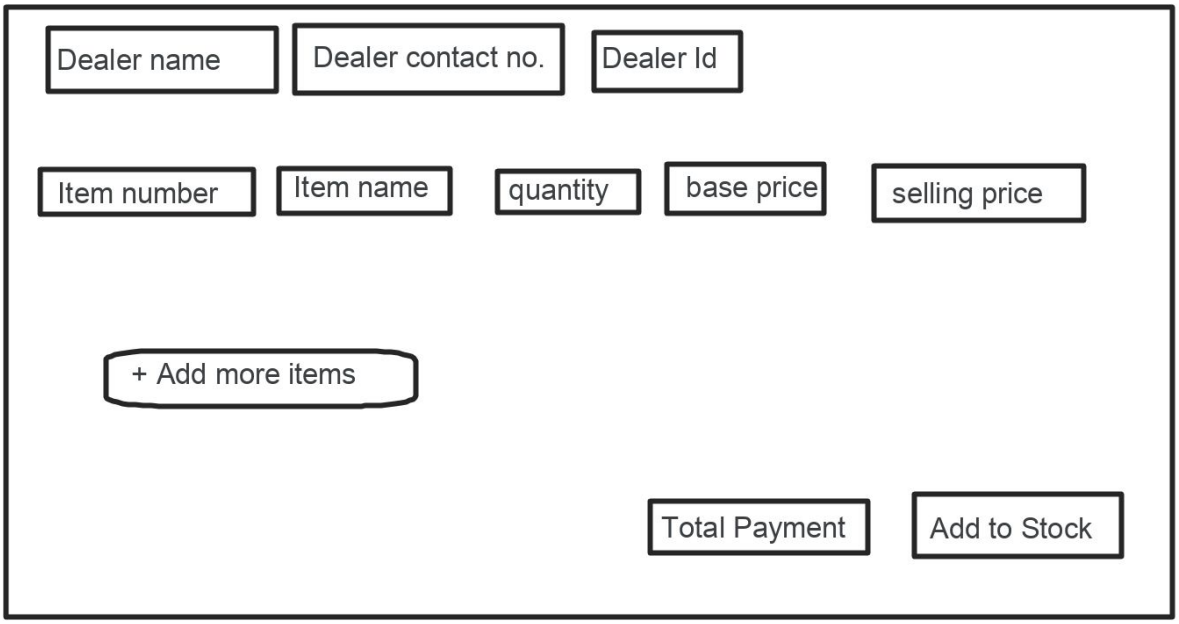
stock manager window



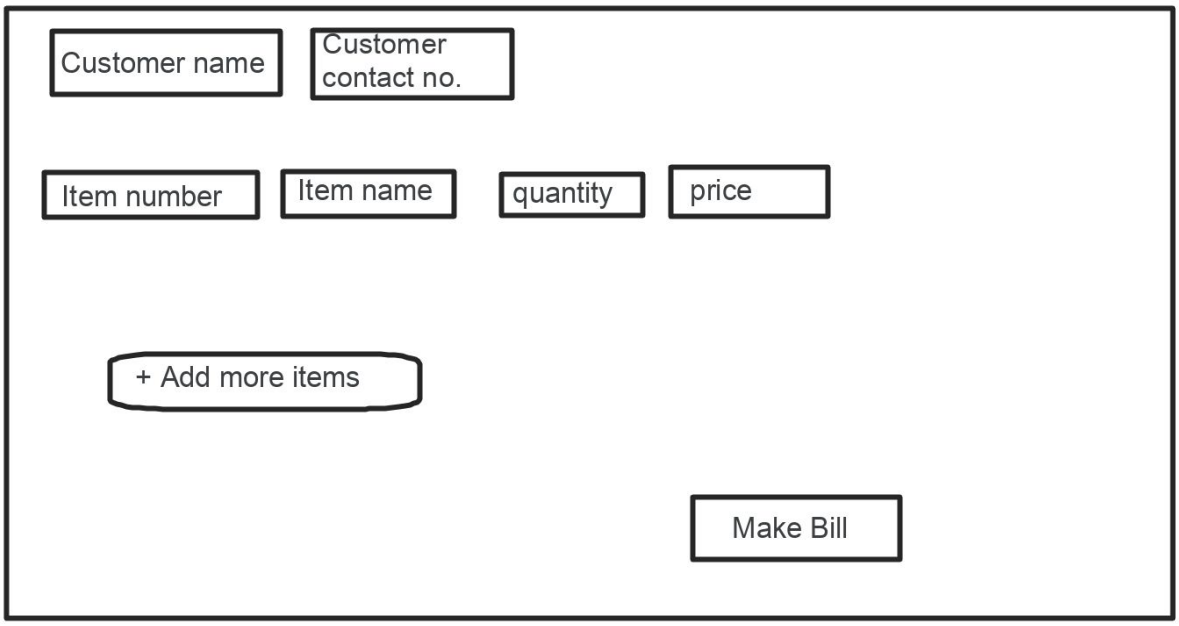
regular staff window



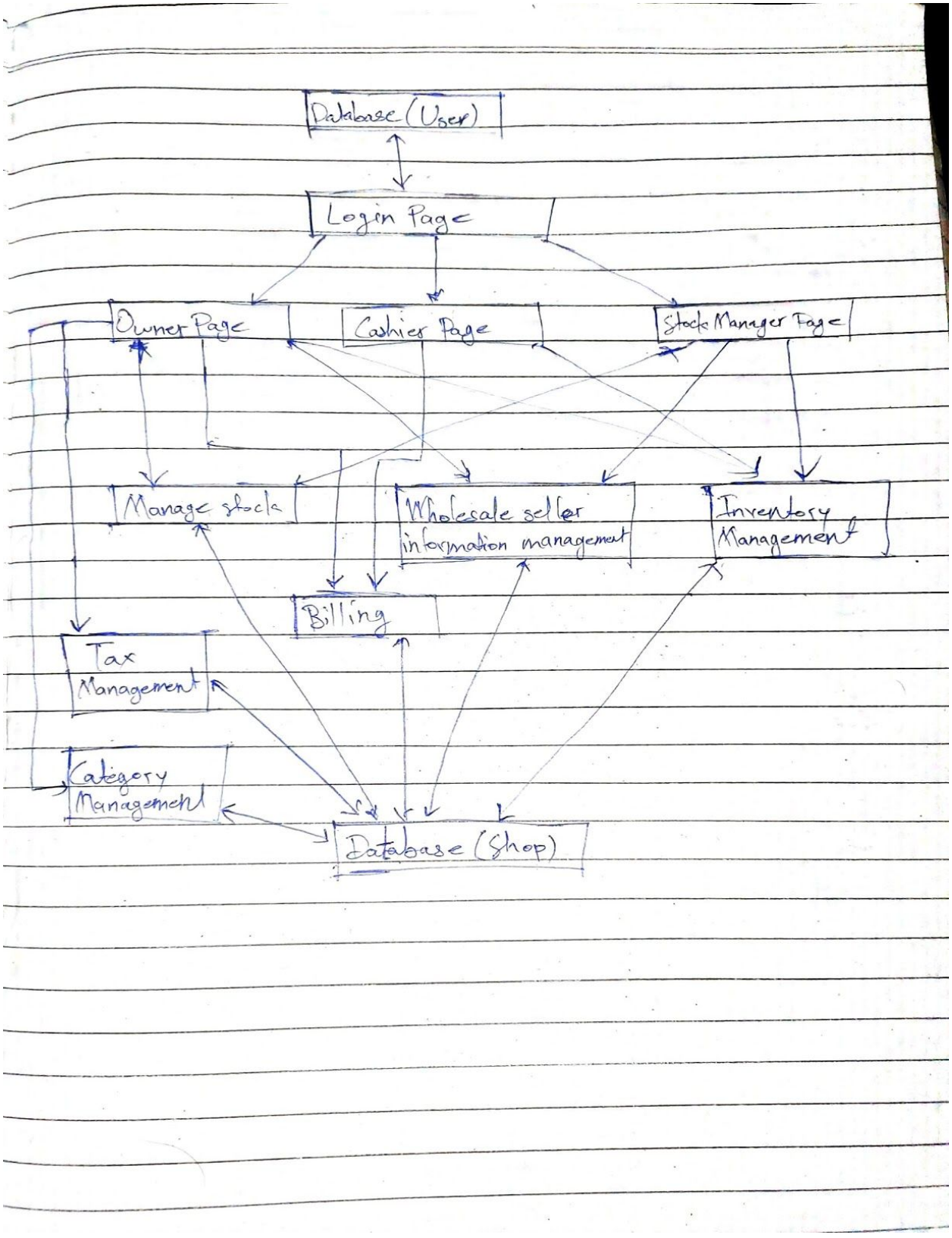
Add stock [puchasing from dealer]



make bill [for goods sold to customer]



Module Design



Sample data for project

- 30 items in Inventory
- 10 categories
- 4 employee (1 owner,2 cashier,1 stock manager)
- 10 customers
- 20 records in bill book

Some examples are as follows :

Inventory

Item Id	Item name	Item quantity	category_id	price	tax_id	discount
1	nyle shampoo	50	30	200	1	0.5
2	dove shampoo	20	30	300	1	0.5
3	horlicks	10	69	250	2	10

Bill book

bill_id	customer_contact_no	net discount	total_payment	total_tax	date
1	7490987469	20	300	69	12/12/2020
2	9875646546	50	500	45	11/9/2020
3	7490987469	15	1000	169	30/2/2020

Category

Catetory_Id	Category
30	Shampoo
69	Drinks
54	Food

Purchase Book

purchase_id	item_id	item_name	item_quantity	category_id	base_price	selling price
121	1	nyle shampoo	50	shampoo	190	200
231	2	dove shampoo	20	shampoo	298	300
504	3	horlicks	10	drinks	230	250

Log file for work

Date	Time	Members	Work
15/11/2020	5:00 - 5:30	All	Brief Discussion on submission 2
18/11/2020	2:00 - 5:30	Amogh,Paritosh	ER Diagram
		Rupesh	Database design
	9:00 - 11:00	All	Report writing + finalising ER diagram
19/11/12020	6:30 - 10:00	All	Finalising the report

Future implementation plan

- Model Designing - Rupesh and Paritosh
- Finding Database and inserting in it - Amogh
- Backend logic - Amogh and Rupesh
- Frontend designing - Paritosh
- Actual coding - All