INFSCI 2710: DATABASE MANAGEMENT SYSTEM

PROJECT REPORT

OVER-THE-COUNTER MEDICINES

PHARMACY APPLICATION MANAGEMENT SYSTEM

University of Pittsburgh

Submitted by:

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1. **Basic Introduction**

The pharmacy application system has an inventory of <u>Over the Counter</u> (OTC) medicines packages, hereinafter referred simply as Medicine for brevity, categorized by disease/ailment type, that can be browsed and searched by customers on the website and can be added to the cart to make a purchase. The application has two kinds of users/actors. They are stated as follows:

I. **Users/Actors**

- **Customers** - a Person who purchase medicines.
- **Staff** - Staff can either be a salesperson or a manager.
    - **Salesperson** – a Person who manage the order of customers and have access to the inventory / stock for a particular store.
    - **Manager -** a Person who manage inventory and salesperson details for a particular store. They can also view the statistics (viz. sales across stores, medicine availability, top selling items(medicines) and so on.) for their stores.

The application has a login page for all types of Actors, viz. Customer and Staff. There is a role-based authentication process, which means that all the users/actors can login using the same login page, however they will be directed to a different portal after logging in, according to their access or roles.

II. **Application Features**

   A. **Login/Registration**
   i.   All actors are able to login into the system if they have their user-id and password created.
   ii.   After logging in they view a welcome page with features respective to their role/access.
   iii.   The Salespersons has to create a new user account for the Customer so that the new customer can access the website.

   B. **Customer Specific Features**
   i.   Customer's profile will be created by Staff.
   ii.   The customer can login into the system from the web portal.
   iii.   After login, the customer is greeted with a 'Welcome Message".
   iv.   From the welcome screen, the customer can navigate to the following pages:
   - Medicines (View the list of medicines by choosing a particular store/pharmacy)
   - Orders (View his/her order history)
   - Cart (View or Edit Cart)
   - Logout (The logout page – the customer will be able to logout)

v.   He/she can check the stock availability of the medicine(s), based on store and then place order.

vi.   Once a Customer picks a medicine from a store and the quantity, she/he can add it to the shopping cart.

    a.   The Customer can continue to shop for Medicines after adding a Medicine to the cart. The cart will continue to hold the Medicine(s) she/he has added in it.

    b.   Customer can visit her/his cart anytime to check the items in the cart. The cart lists the Medicine(s) added to the cart for which the order is not yet placed.

    c.   Once a medicine is chosen from a store, another store cannot be chosen. Medicine can be added to cart from one store only.

    d.   In the cart the Customer cannot increase/decrease a Medicine that she/he has added before.

    e.   In the cart the Customer can delete any Medicine from the cart.

vii.   After placement of order, he/she will receive a confirmation message.

C. Salesperson Specific Features

i.   Salesperson's profile will be created by Manager.

ii.   The salesperson can login into the system from the web portal.

iii.   After login, he/she can see the new orders placed by the customer. He/she can see the order history of the customers.

iv.   He/she can:

- View / add / update the list of medicines(products).
- View / add / update inventory details.
- View / add / update customer details.
- View/ add category of medicine
- View sale for his/her store

D. Manager Specific Features

i.   The manager can login into the system from the web portal.

ii.   The manager can oversee all the details pertaining to the store.

iii.   The manager has all the roles which the salesperson has.

iv.   Additionally, he/she has a provision to see the statistical reports of the store that he/she manages.

2. Business Rules

a.   User can be a customer or a staff.

b.   One customer can place many orders.

c.   One order is only from one customer.

d.   One staff works in only one store.

e.   One store can have many staffs.

f.   One manager can manage only one store.

g.   One order can contain many items.

h.   One item can belong to only one order.

i.   Order_item can contain only one medicine.

j.   One medicine can be in many order_items.

k.   One medicine can be in many categories.

l.   One category has many medicines.

m.   One medicine can be in many stocks.

n.   One Stock has many medicines.

o.   One medicine can be from many suppliers.

p.   One supplier can have many medicines.

q.   One store can have many stocks.

r.   One stock can be in one store.

s.   One supplier can have many stocks.

t.   One stock can be from many suppliers.

u.   One order is placed to one store

v.   One store can have many orders.

w.   One manager has many salespersons.

x.   One salesperson has only one manager.

3. Technologies Used in building the application

- **Database:** MySQL
- **Front-end:** HTML, CSS, PHP

4. Assumptions

a.   The number of stores has been limited to 3.

b.   The number of suppliers has been limited to 3.

c.   No user-profile will be physically deleted from the system.

d.   For the purpose of this system, dummy data has been creation with a timeline of one year.
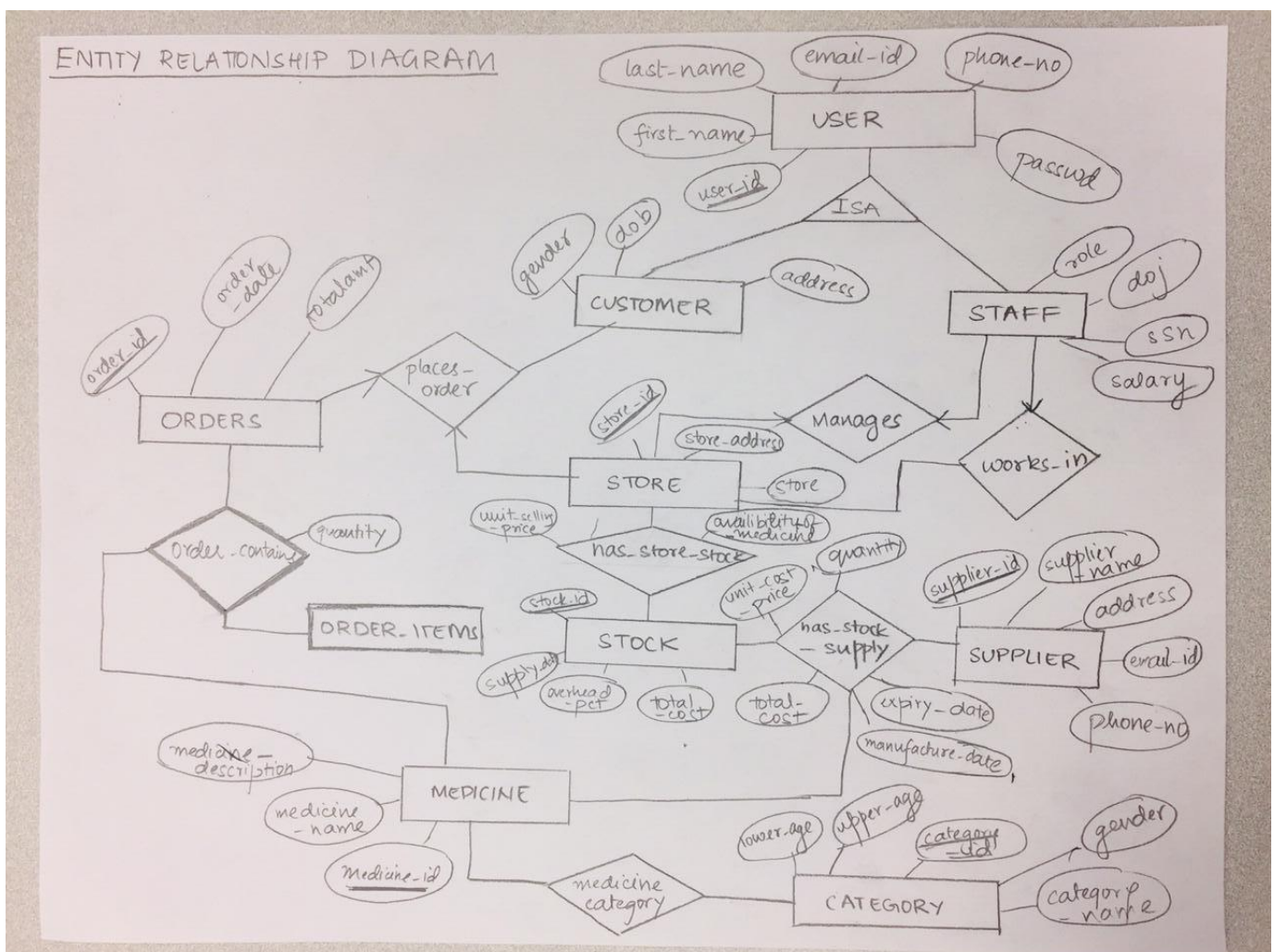
e.   All medicines received in stock have not expired

f. A state tax of 7% all orders and overhead costs on inventory received is different for each supplier

g. Manager will be added by DBA.

5. Project Repository

The project repository can be found in the following location:

https://github.com/piumallick/Online-Pharmacy-Application-Management-System

6. ER Diagram

7. Database Design

Files:
- Create_tables.sql – Table Definitions
- Insert.sql – Insert script to insert the dummy data
- Update.sql – Update script added to perform calculations of the cost of inventory received adding the overhead costs and include the tax on the items sold when an order is placed.

The following tables have been created for the project:
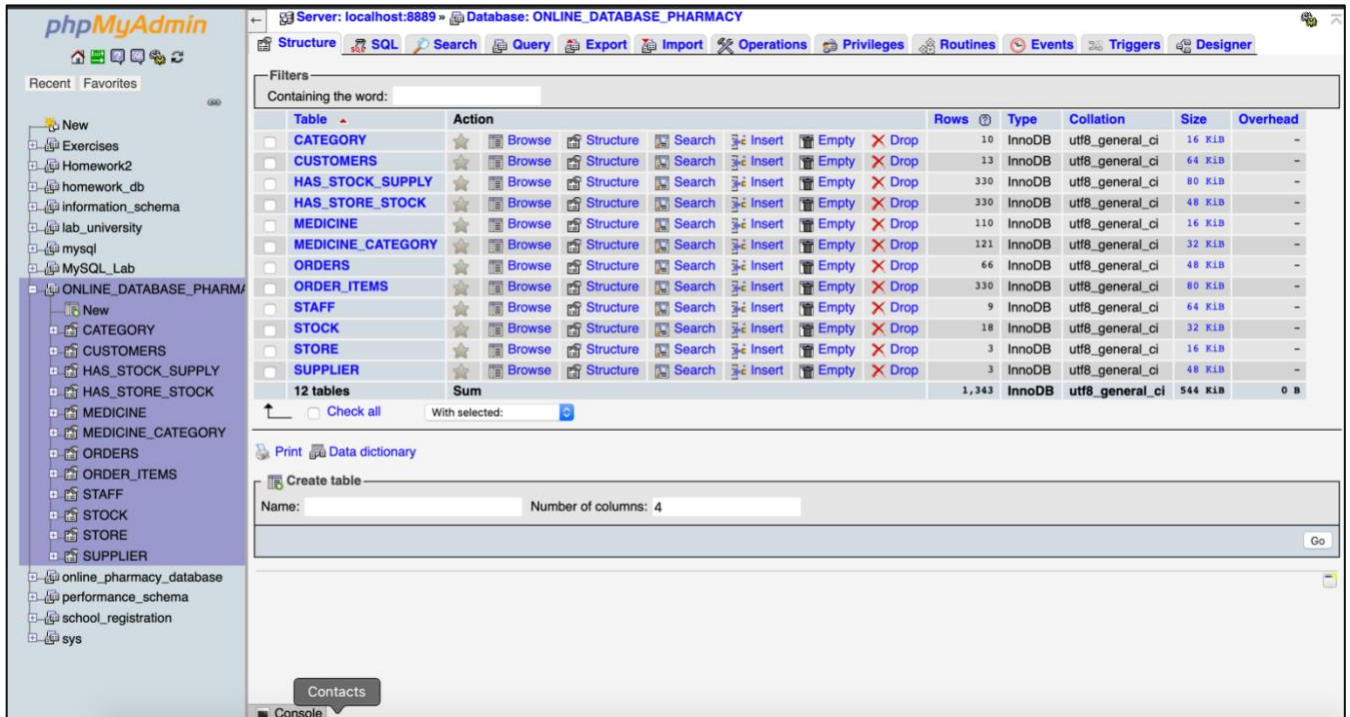
The detailed description of each table is given below:

a. STORE

TABLE STRUCTURE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	store_id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	store_name	varchar(50)	utf8_general_ci		No	None			Change Drop More
3	store_address	varchar(50)	utf8_general_ci		No	None			Change Drop More

With selected: Browse Change Drop Primary Unique Index Fulltext

- The table 'STORE' contains 3 unique records.
- It contains the details of the stores, such as store id, store name and store address.
- 'store_id', which is the primary key of the table STORE, is set to AUTO_INCREMENT.

- All the fields are set to NOT NULL.

b. CUSTOMERS

TABLE STRUCTURE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action		
1	cust_id 🔑🔑	int(11)			No	None		AUTO_INCREMENT	Change	Drop	More
2	first_name	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
3	last_name	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
4	email_address 🔑	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
5	passwd	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
6	phone_number 🔑	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
7	address	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
8	gender	varchar(1)	utf8_general_ci		No	None			Change	Drop	More
9	dob	date			No	None			Change	Drop	More

- The table 'CUSTOMERS' contains 13 unique records.
- It contains the details of the customers, such as cust_id, first_name, last_name, email_address, passwd, phone_number, address, gender and dob (date of birth).
- Gender 'F' refers to female customers, whereas gender 'M' refers to male customers.
- 'cust_id', which is the primary key of the table CUSTOMERS, is set to AUTO_INCREMENT.
- All the fields are set to NOT NULL.
- 'email_address' and 'phone_number' have unique constraints.

c. STAFF

TABLE STRUCTURE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action		
1	staff_id 🔑	int(11)			No	None		AUTO_INCREMENT	Change	Drop	More
2	first_name	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
3	last_name	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
4	email_address 🔑	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
5	passwd	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
6	phone_number 🔑	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
7	ssn	int(11)			No	None			Change	Drop	More
8	date_of_joining	date			No	None			Change	Drop	More
9	salary	int(11)			No	None			Change	Drop	More
10	store_id 🔑	int(11)			No	None			Change	Drop	More
11	role	varchar(20)	utf8_general_ci		No	None			Change	Drop	More

- The table 'STAFF' contains 9 unique records.
- Staff can be either a manager or a salesperson: Manager is identified by the role 'M' and Salesperson is identified by the role 'S'.

- It contains the details of the staff, such as staff_id, first_name, last_name, email_address, passwd, phone_number, ssn, date_of_joining, salary, store_id and role.
- 'staff_id', which is the primary key of the table STAFF, is set to AUTO_INCREMENT.
- All the fields are set to NOT NULL.
- 'email_address' and 'phone_number' have unique constraints.

d. MEDICINE

TABLE STRUCTURE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action		
1	medicine_id	int(11)			No	None		AUTO_INCREMENT	Change	Drop	More
2	medicine_name	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
3	medicine_desc	varchar(255)	utf8_general_ci		No	None			Change	Drop	More

- The table 'MEDICINE' contains 110 unique records.
- It contains the details of all the OTC (Over the Counter) medicines, such as medicine_id, medicine_name and medicine_desc (medicine description).
- 'medicine_id', which is the primary key of the table MEDICINE, is set to AUTO_INCREMENT.
- All the fields are set to NOT NULL.

e. CATEGORY

TABLE STRUCTURE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action		
1	category_id	int(11)			No	None		AUTO_INCREMENT	Change	Drop	More
2	category_name	varchar(20)	utf8_general_ci		No	None			Change	Drop	More
3	lower_age	varchar(10)	utf8_general_ci		No	None			Change	Drop	More
4	upper_age	varchar(10)	utf8_general_ci		No	None			Change	Drop	More
5	gender	varchar(2)	utf8_general_ci		No	None			Change	Drop	More

- The table 'CATEGORY' contains 10 unique records.
- It contains the details of all the medicine categories, such as category_id, category_name, lower_age, upper_age and gender.
- 'category_id', which is the primary key of the table CATEGORY, is set to AUTO_INCREMENT.
- All the fields are set to NOT NULL.

f. MEDICINE_CATEGORY

TABLE STRUCTURE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action		
1	category_id	int(11)			No	None			Change	Drop	More
2	medicine_id	int(11)			No	None			Change	Drop	More

- The table 'MEDICINE_CATEGORY' contains 121 unique records.

- It contains the details of all the medicines and its categories. The details are stored in the fields like medicine_id and category_id.

- 'medicine_id' and 'category_id' are both defined as the primary keys of the table MEDICINE_CATEGORY, and hence they can be called composite primary keys.

- All the fields are set to NOT NULL.

g. SUPPLIER

TABLE STRUCTURE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action		
1	supplier_id	int(11)			No	None		AUTO_INCREMENT	Change	Drop	More
2	supplier_name	varchar(50)	utf8_general_ci		No	None			Change	Drop	More
3	address	varchar(255)	utf8_general_ci		No	None			Change	Drop	More
4	phone_number	varchar(20)	utf8_general_ci		No	None			Change	Drop	More
5	email_address	varchar(20)	utf8_general_ci		No	None			Change	Drop	More

- The table 'SUPPLIER' contains 3 unique records.

- It contains the details of all the suppliers who supply medicines to different stores. It contains different attributes like supplier_id, supplier_name, address, phone_number and email_address.

- "supplier_id', which is the primary key of the table SUPPLIER, is set to AUTO_INCREMENT.

- All the fields are set to NOT NULL.

- 'email_address' and 'phone_number' have unique constraints.

h. STOCK

TABLE STRUCTURE

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action		
1	stock_id	int(11)			No	None		AUTO_INCREMENT	Change	Drop	More
2	supply_date	date			No	None			Change	Drop	More
3	overhead_pct	float			No	None			Change	Drop	More
4	total_cost	decimal(20,10)			No	0.0000000000			Change	Drop	More
5	supplier_id	int(11)			No	None			Change	Drop	More

- The table 'STOCK' contains 18 unique records.

- The table is being used to store the bulk orders to a particular supplier. A stock can consist of many medicines ordered in bulk from the same supplier.

- It contains different attributes like stock_id, supply_date, overhead_pct, total_cost and supplier_id.

- "stock_id', which is the primary key of the table STOCK, is set to AUTO_INCREMENT.

- All the fields are set to NOT NULL.
- The attribute 'total_cost' is set to a default value of 0.

i. HAS_STOCK_SUPPLY

TABLE STRUCTURE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	stock_id	int(11)			No	None			Change Drop More
2	supplier_id	int(11)			No	None			Change Drop More
3	unit_cost_price	decimal(7,4)			No	0.0000			Change Drop More
4	medicine_id	int(11)			No	None			Change Drop More
5	manufacture_date	date			No	None			Change Drop More
6	expiry_date	date			No	None			Change Drop More
7	quantity	int(20)			No	0			Change Drop More
8	total_cost	decimal(20,10)			No	0.0000000000			Change Drop More

- The table 'HAS_STOCK_SUPPLY' contains 330 unique records.
- This table contains the list of medicines supplied by "a supplier" and the quantity purchased and the cost price. This table would contain and would be useful when there is a need to know "How much of the medicine has been sold?"
- It contains different attributes like stock_id, supplier_id, unit_cost_price, medicine_id, manufacture_date, expiry_date, quantity and total_cost.
- 'stock_id', 'supplier_id' and 'medicine_id' are all defined as the primary keys of the table HAS_STOCK_SUPPLY, and hence they can be called composite primary keys.
- All the fields are set to NOT NULL.
- The columns 'unit_cost_price', 'quantity' and 'total_cost" have been set to a default value of 0.

j. HAS_STORE_STOCK

TABLE STRUCTURE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	store_id	int(11)			No	None			Change Drop More
2	stock_id	int(11)			No	None			Change Drop More
3	medicine_id	int(11)			No	None			Change Drop More
4	availability_of_medicine	varchar(4)	utf8_general_ci		No	None			Change Drop More
5	unit_selling_price	decimal(7,4)			No	0.0000			Change Drop More

- The table 'HAS_STORE_STOCK' contains 330 unique records.
- This table is used to divide the stock among 3 stores.
- It contains different attributes like stock_id, stock_id, medicine_id, availability_of_medicine and unit_selling_price.
- 'store_id', 'stock_id' and 'medicine_id' are all defined as the primary keys of the table HAS_STORE_STOCK, and hence they can be called composite primary keys.

- All the fields are set to NOT NULL.
- The column 'unit_selling_price' was set to a default value of 0.

k.   **ORDERS**

TABLE STRUCTURE:

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action		
☐	1	order_id 🔑	int(11)			No	None		AUTO_INCREMENT	🖉 Change	✖ Drop	▽ More
☐	2	total_amt	decimal(20,10)			No	None			🖉 Change	✖ Drop	▽ More
☐	3	order_date	date			No	None			🖉 Change	✖ Drop	▽ More
☐	4	cust_id 🔑	int(11)			No	None			🖉 Change	✖ Drop	▽ More
☐	5	store_id 🔑	int(11)			No	None			🖉 Change	✖ Drop	▽ More

- The table 'ORDERS' contains 66 unique records.
- This table is used to track the order details of each customer pertaining to various stores.
- It contains different attributes like order_id, total_amt, order_date, cust_id and store_id.
- 'order_id', which is the primary key of the table ORDERS, is set to AUTO_INCREMENT
- 'cust_id' and 'store_id' are the Foreign Key Constraints which refer to the CUSTOMERS and STORE tables respectively.
- All the fields are set to NOT NULL.

l.   **ORDER_ITEMS**

TABLE STRUCTURE

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action		
☐	1	order_id 🔑	int(11)			No	None			🖉 Change	✖ Drop	▽ More
☐	2	medicine_id 🔑 🔑	int(11)			No	None			🖉 Change	✖ Drop	▽ More
☐	3	stock_id 🔑 🔑	int(11)			No	None			🖉 Change	✖ Drop	▽ More
☐	4	unit_selling_price	decimal(7,4)			No	0.0000			🖉 Change	✖ Drop	▽ More
☐	5	quantity	int(11)			No	0			🖉 Change	✖ Drop	▽ More
☐	6	total_amt	decimal(20,10)			No	0.0000000000			🖉 Change	✖ Drop	▽ More

- The table 'ORDER_ITEMS' contains 330 unique records.
- This table is used to track the list of the medicines in an order.
- It contains different attributes like order_id, medicine_id, stock_id, unit_selling_price, quantity and total_amt.

- 'order_id', 'medicine_id' and 'stock_id' are all defined as the primary keys of the table. ORDER_ITEMS, and hence they can be called composite primary keys.
- All the fields are set to NOT NULL.
- The fields 'unit_selling_price', 'quantity' and 'total_amt' are set to default value of 0 at the first place.

After doing the initial insertion of data into the tables (**insert.sql**), following update scripts(**update.sql**) were executed. The following code is also available in the Github repository (link mentioned previously in the report).

```sql
/* UPDATE ON HAS_STOCK_SUPPLY TOTAL_COST WHERE TOTAL_COST = UNIT_COST_PRICE * QUANTITY*/
UPDATE HAS_STOCK_SUPPLY SET total_cost= (quantity*unit_cost_price);

/* UPDATE ON STOCK TOTAL_COST WHERE TOTAL_COST = SUM(TOTAL_AMT) * (100*OVERHEAD_PCT/100) */
UPDATE STOCK
SET total_cost = (SELECT SUM(HAS_STOCK_SUPPLY.total_cost)
                    FROM HAS_STOCK_SUPPLY
            WHERE FROM HAS_STOCK_SUPPLY
            WHERE HAS_STOCK_SUPPLY.supplier_id = STOCK.supplier_id
            GROUP BY HAS_STOCK_SUPPLY.stock_id);


UPDATE STOCK
SET total_cost = total_cost * (1 + overhead_pct*0.01);

/* UPDATE ON HAS_STORE_STOCK UNIT_SELLING PRICE = HAS_STOCK_SUPPLY.UNIT_COST_PRICE * 1.15 */
UPDATE HAS_STORE_STOCK
SET UNIT_SELLING_PRICE = ((SELECT UNIT_COST_PRICE
                            FROM HAS_STOCK_SUPPLY
                            WHERE HAS_STOCK_SUPPLY.stock_id = HAS_STORE_STOCK.stock_id
                            and HAS_STOCK_SUPPLY.medicine_id = HAS_STORE_STOCK.medicine_id) * 1.15);

/* UPDATE ON ORDER_ITEMS TOTAL_AMT WHERE TOTAL_AMT= UNIT_SELLING PRICE_PRICE * QUANTITY*/
UPDATE ORDER_ITEMS SET total_amt = quantity * unit_selling_price;

/* UPDATE ON ORDERS TOTAL_AMT WHERE TOTAL_AMT= (SUM(total_amt)) * 1.07 where we add */
UPDATE ORDERS
SET total_amt= (SELECT SUM(total_amt)
FROM ORDER_ITEMS WHERE ORDER_ITEMS.order_id = ORDERS.order_id) * 1.07;
```

8. **Application Screenshots & Flow**

   a. **User Log in Page**

   b. **Customer Welcome Page**

   c. **Available Medicines for Customers**

d. Customer Order History

Index | Orders | Medicines | Cart | Logout

Orders

Customer Name	Order ID	Order Date	Store Name	Total Amount
Victoria Gray	Order Id - 5067	2019-12-01	Rite Aid Pharmacy	$16.10
Victoria Gray	Order Id - 5066	2019-11-28	CVS Pharmacy	$202.40
Victoria Gray	Order Id - 5053	2019-09-29	Rite Aid Pharmacy	$191.42
Victoria Gray	Order Id - 5040	2019-07-14	Giant Eagle Pharmacy	$176.76
Victoria Gray	Order Id - 5027	2019-05-12	CVS Pharmacy	$169.68
Victoria Gray	Order Id - 5014	2019-04-02	Rite Aid Pharmacy	$253.58
Victoria Gray	Order Id - 5001	2019-01-28	Giant Eagle Pharmacy	$196.08

e. Customer Shopping Cart

Index | Orders | Medicines | Cart | Logout

View or Edit Cart

Medicine ID	Medicine Name	Unit Price	Quantity	Total Price	Delete
1015	Psuefoephedrine 30 mg	$2.30	1	$2.30	Delete
			Grand Total:	$2.3	

Submit Order   Empty Cart

f. Customer Submit order

Index | Orders | Medicines | Cart | Logout

View or Edit Cart

Your order has been successfully received

g. Staff Welcome Page (for Salesperson)

Index | Add Customer | View Customers | Add Category | View Categories | Add Medicine Info | View Medicines | Add Stock | View Stocks | View Sales | View Store Stocks | Logout

Welcome Joshua Zacharia!

Have a good day of work

h. Staff Welcome Page (for Store Manager)

Index | Add Customer | View Customers | Add Category | View Categories | Medicine Info | View Medicines | Add Stock | View Stocks | View Sales | View Store Stocks | Staff Info | View Staff | Store Info | View Stores | Supplier Info | View Supplier | Statistics | Logout

Welcome Emma Fernadez!

Have a good day of work

i. Customer Creation Page

Index | Add Customer | View Customers | Add Category | View Categories | Medicine Info | View Medicines | Add Stock | View Stocks | View Sales | View Store Stocks | Logout

Create New Customer

Enter First Name

Enter Last Name

Enter Email

Enter Phone Number

Enter Address

Select gender...

Enter Date of Birth YYY

Enter Password

Re-enter Password

Submit

j. Staff Creation Page for a Manager

Create New Staff

Enter First Name

Enter Last Name

Enter Email

Enter Phone Number

Enter SSN

Enter Date Hired YYYY

Enter Staff Salary

Enter Password

Re-enter Password

Submit

k. Edit Customer Details

Edit Customer

Riley

Hall

rileyhall@gmail.com

3418902345

5600 Bellefront Ave

Male

1989-12-09

New Password   Leave blank to keep old password

Repeat New Password

submit

l. Edit Staff Details for the Manager

Edit Staff Information

Emma

Fernadez

emmafernandiz@gmail

5670986752

690525890

2010-07-08

37054

Enter Password   Leave Blank To Keep Old Password

Re-enter Password

submit

m. List Customer Details

List Customers

Name	Email	Phone	Address	Gender	Date of Birth	Edit
Victoria Gray	victoriagray@gmail.com	7024683456	378 Atwood St	F	1995-08-11	Edit
John Smith	johnsmith@reddit.com	4123459087	3459 Fifth Avenue	M	1992-10-11	Edit
Kevin Meyers	kevinmeyers@gmail.com	5689023456	970 Murray Ave	M	1972-11-06	Edit
Ana Lee	analee@gmail.com	7120986572	456 North Criag St	F	1990-03-12	Edit
Mark Robinson	markrobinson@hotmail.com	9860012345	708 Penn Ave	M	1993-12-10	Edit
Julia Stewarts	juliastewarts@outlook.com	4023458901	567 Carson St	F	1969-03-06	Edit
Riley Hall	rileyhall@gmail.com	3418902345	5600 Bellefront Ave	M	1989-12-09	Edit
Alyssa Lewis	alyssalewis@gmail.com	8048901238	871 Bellefield Ave	F	1998-07-23	Edit
Sadie Ward	sadieward@gmail.com	9423570121	2100 Lincon St	F	1984-08-08	Edit
Simon Cowell	simoncowell@hotmail.com	9838467352	048 Doerrville Ave	M	2006-02-12	Edit
Savannah Perez	savannahperez@gmail.com	2334800123	4 Winds St	F	1985-09-13	Edit
Mathew Gilbert	mathewgilbert@hotmail.com	6077231567	678 Bradsford St	M	1979-03-18	Edit
Madison Phillips	madisonphillips@gmail.com	8374519876	109 Center Ave	F	1987-04-15	Edit
Kwesi Aguillera	KRA40@pitt.edu	4124785777	100 Bryn Mawr Court East, Apt #516	M	1979-10-14	Edit
Kwesi Aguillera	KRA41@pitt.edu	4124785776	100 Bryn Mawr Court East, Apt #516	M	1979-10-14	Edit
Kwesi Aguillera	KRA10@pitt.edu	4124785710	100 Bryn Mawr Court East, Apt #516	M	1979-10-14	Edit
Kwesi Aguillera	kaguillera@gmail.com	4124785720	100 Bryn Mawr Ct E Apt 516	M	1979-10-14	Edit

n. List Store Staff

Index | Add Customer | View Customers | Add Category | View Categories | Medicine Info | View Medicines | Add Stock | View Stocks | View Sales | View Store Stocks | Staff Info | View Staff | Store Info | View Stores | Supplier Info | View Supplier | Statistics | Logout

List Store Staff

Name	Email	Phone	SSN	Date of Joining	Salary	Edit
Sebastian Willams	sebastianwillaims@gmail.com	4123456789	504409575	2011-03-31	31956	Edit
Emma Fernadez	emmafernandiz@gmail.com	5670986752	690525890	2010-07-08	37054	Edit
Joshua Zacharia	joshuazacharia@gmail.com	2678901234	451830455	2018-05-19	38077	Edit

o. List Stocks

Index | Add Customer | View Customers | Add Category | View Categories | Add Medicine Info | View Medicines | Add Stock | View Stocks | View Sales | View Store Stocks | Logout

List Stocks

Supply_date	Overhead Percentage	Total Cost	Supplier	View
2017-01-02	3.5	$2,286.06	A	View
2019-01-03	3.5	$1,085.20	A	View
2019-01-08	3.5	$2,286.06	A	View
2019-01-09	3.5	$1,085.20	A	View
2019-01-14	3.5	$2,286.06	A	View
2019-01-15	3.5	$1,085.20	A	View
2019-01-04	3.7	$1,838.29	B	View
2019-01-05	3.7	$1,931.93	B	View
2019-01-10	3.7	$1,838.29	B	View
2019-01-11	3.7	$1,931.93	B	View
2019-01-16	3.7	$1,838.29	B	View
2019-01-17	3.7	$1,931.93	B	View
2019-12-02	3.7	$67.41	B	View
2019-01-06	3.2	$1,722.15	C	View
2019-01-07	3.2	$1,081.74	C	View
2019-01-12	3.2	$1,722.15	C	View
2019-01-13	3.2	$1,081.74	C	View
2019-01-18	3.2	$1,722.15	C	View
2019-01-19	3.2	$1,081.74	C	View

p. List Medicines

List Medicines

Medicine Name	Description	Medication Categories	Edit
Ibuprofen 200 mg	Pain/Fever Reliever	Pain/Fever, Cold/ Cough	Edit
Acetaminophen 325mg	Pain/Fever Reliever	Pain/Fever	Edit
Pediatric Acetaminophen 2.6g	Pain/Fever Reliever	Pain/Fever	Edit
Naxproxen 200mg	Pain/Fever Reliever	Pain/Fever	Edit
Aspirin 81 mg EC	Pain/Fever Reliever	Pain/Fever, Cold/ Cough	Edit
Aspirin 325 mg	Pain/Fever Reliever	Pain/Fever	Edit
Asprin for Kids	Pain/Fever Reliever	Kids, Pain/Fever	Edit
Bengay Cream 2 oz	Ultra Strength Pain Relieving cream	Pain/Fever	Edit
Tiger Balm 2 oz	Pain Relieving Ointment	Pain/Fever	Edit
Tiger Balm Patch 2 oz	Pain Relieving Patch	Pain/Fever	Edit
Diphenhydramine 25g	Allergy Relief	Allergy/Congestion	Edit
Loratidine 10mg	Hayfever and Allergy Relief	Allergy/Congestion	Edit
Loratadine D	Congestion Allergy Relief	Allergy/Congestion	Edit
Cetirzine 10 mg	Allergy Relief	Allergy/Congestion	Edit
Psuefoephedrine 30 mg	Nasal Decongestant	Allergy/Congestion	Edit
Psuefoephedrine 12HR	12 hr Nasal Decongestant	Allergy/Congestion	Edit
Oxymetazoline Nasal Spray	Nasal Spray for sinus	Allergy/Congestion	Edit
Saline Nasal Spray	Natural Nasal Spray	Allergy/Congestion	Edit
Fexofendanine / antihistamine 30mg	Allergy Relief fror Kids	Kids, Allergy/Congestion	Edit

q. List Suppliers

List Suppliers

Supplier Name	Address	Phone Number	Email Address	Edit
A	5678 Boulevard	9871112345	A123@gmail.com	Edit
B	9876 Paxton Road	4120098734	B123@gmail.com	Edit
C	0012 Lorianne Hills VA	9811013341	C123@gmail.com	Edit
D	100 Bryn Mawr Court East, Apt #516	4124785766	KRA40@pitt.edu	Edit

r. List Store Stock

List Store's Stocks

Supply_date	Overhead Percentage	Total Cost	Supplier	Details
2019-01-08	3.5	$2,286.06	A	View
2019-01-09	3.5	$1,085.20	A	View
2019-01-10	3.7	$1,838.29	B	View
2019-01-11	3.7	$1,931.93	B	View
2019-01-12	3.2	$1,722.15	C	View
2019-01-13	3.2	$1,081.74	C	View
2019-12-02	3.7	$67.41	B	View

s. Edit Medicine

Edit Medicine

Ibuprofen 200 mg

Pain/Fever Reliever

Pain/Fever
Cold/ Cough

submit

t. Edit Supplier

Edit Supplier

B

9876 Paxton Road

4120098734

B123@gmail.com

submit

u. Add Medicine Information

Enter New Medication

Enter Medicine Name

Enter Description/Purp

Pain/Fever
Cold/ Cough

Submit

v. Add Stock Information

Add Stock

Please Enter the inventory details ... You may add upto 5 items at a time!

Select Supplier...

Generic Mucinex DM	4.99	2019-10-10	2020-10-10	12
Select Medication...	Unit Price	Manufacturer Date YYY	Expiry Date YYYY-MM-I	Quantity
Select Medication...	Unit Price	Manufacturer Date YYY	Expiry Date YYYY-MM-I	Quantity
Select Medication...	Unit Price	Manufacturer Date YYY	Expiry Date YYYY-MM-I	Quantity
Select Medication...	Unit Price	Manufacturer Date YYY	Expiry Date YYYY-MM-I	Quantity

Submit

w. Add Supplier Information

Create New Supplier

Enter Supplier Name

Enter Supplier Address

Enter Supplier Phone N

Enter Supplier Address

Submit

x. Store Sales Order History

Store Sales Order History

Customer Name	Order ID	Order Date	Store Name	Total Amount
Victoria Gray	Order Id - 5068	2019-12-02	Rite Aid Pharmacy	$2.30
Victoria Gray	Order Id - 5069	2019-12-02	Rite Aid Pharmacy	$0.00
Victoria Gray	Order Id - 5067	2019-12-01	Rite Aid Pharmacy	$16.10
Madison Phillips	Order Id - 5065	2019-11-25	Rite Aid Pharmacy	$254.38
Simon Cowell	Order Id - 5062	2019-11-18	Rite Aid Pharmacy	$348.45
Riley Hall	Order Id - 5059	2019-11-01	Rite Aid Pharmacy	$330.40
Ana Lee	Order Id - 5056	2019-10-22	Rite Aid Pharmacy	$213.04
Victoria Gray	Order Id - 5053	2019-09-29	Rite Aid Pharmacy	$191.42
Savannah Perez	Order Id - 5050	2019-09-13	Rite Aid Pharmacy	$322.86
Alyssa Lewis	Order Id - 5047	2019-08-24	Rite Aid Pharmacy	$218.50
Mark Robinson	Order Id - 5044	2019-08-16	Rite Aid Pharmacy	$353.05
John Smith	Order Id - 5041	2019-07-21	Rite Aid Pharmacy	$223.68
Mathew Gilbert	Order Id - 5038	2019-07-08	Rite Aid Pharmacy	$155.25
Sadie Ward	Order Id - 5035	2019-06-12	Rite Aid Pharmacy	$170.78
Julia Stewarts	Order Id - 5032	2019-05-27	Rite Aid Pharmacy	$263.35
Kevin Meyers	Order Id - 5029	2019-05-20	Rite Aid Pharmacy	$215.81
Madison Phillips	Order Id - 5026	2019-05-04	Rite Aid Pharmacy	$329.25
Simon Cowell	Order Id - 5023	2019-04-27	Rite Aid Pharmacy	$145.19
Riley Hall	Order Id - 5020	2019-04-19	Rite Aid Pharmacy	$150.08
Ana Lee	Order Id - 5017	2019-04-11	Rite Aid Pharmacy	$231.73
Victoria Gray	Order Id - 5014	2019-04-02	Rite Aid Pharmacy	$253.58
Savannah Perez	Order Id - 5011	2019-03-23	Rite Aid Pharmacy	$160.43
Alyssa Lewis	Order Id - 5008	2019-02-19	Rite Aid Pharmacy	$184.58
Mark Robinson	Order Id - 5005	2019-02-10	Rite Aid Pharmacy	$108.10
John Smith	Order Id - 5002	2019-01-30	Rite Aid Pharmacy	$134.64

y. Statistical Reports for Store Manager
- **Report Dashboard**

View Statistics for all the stores

1. Availability of medicines (quantity) in all the stores:

a. Giant Eagle Pharmacy

b. CVS Pharmacy

c. Rite Aid Pharmacy

2. Maximum order items purchased by customers (usually when quantity is greater than 10): Click here for the report

3. Medicine Backlog: Click here for the report

4. List of medicines whose availability is less (usually less than 7): Click here for the report

5. Total Sales comparison in all the stores: Click here for the report

- **Store Sales Comparison**

Total Sales comparison in all the stores

Back to Statistics page

Store Name	Total Sales
CVS Pharmacy	$53,605.73
Giant Eagle Pharmacy	$77,532.05
Rite Aid Pharmacy	$95,487.63

Back to Statistics page

- **Most Purchased Items by Customers**

Maximum order items purchased by customers (usually when quantity > 10)

Back to Statistics page

Store Name	Medicine Name
Rite Aid Pharmacy	Anti - Dandruff Shampoo
Rite Aid Pharmacy	Bar Soap
Rite Aid Pharmacy	Benzocaine 7 percent Gel
Rite Aid Pharmacy	Chewable Bismuth
Rite Aid Pharmacy	Clotrimazole Vaginal 3 day
Rite Aid Pharmacy	Clotrimazole Vaginal 7 day
Rite Aid Pharmacy	Culturelle for Kids
Rite Aid Pharmacy	Folic Acid 1mg x 100
Rite Aid Pharmacy	Generic DayQuil Cap
Rite Aid Pharmacy	PreNatal Vitamins x 100
Rite Aid Pharmacy	Probiotic Blend
Rite Aid Pharmacy	Protein Powder For Female
Rite Aid Pharmacy	Toothbrush

Back to Statistics page

- **Medicine backlog in the store**

Medicine Backlog (Medicines which are in store for > 1 year)

Back to Statistics page

Store Name	Medicine Name	Medicine Availability/Count	Supply Date
Giant Eagle Pharmacy	Anti - Dandruff Shampoo	10	2017-01-02
Giant Eagle Pharmacy	AZO	8	2017-01-02
Giant Eagle Pharmacy	Benzoyl Peroxide 10 percent Wash	10	2017-01-02
Giant Eagle Pharmacy	Calcium Citrate 400mg x 100	11	2017-01-02
Giant Eagle Pharmacy	Cetirzine 10 mg	12	2017-01-02
Giant Eagle Pharmacy	Clotrimazole Vaginal 3 day	12	2017-01-02
Giant Eagle Pharmacy	Clotrimazole Vaginal 7 day	10	2017-01-02
Giant Eagle Pharmacy	Dental Floss	10	2017-01-02
Giant Eagle Pharmacy	Fexofendanine / antihistamine 30mg	9	2017-01-02
Giant Eagle Pharmacy	Fish Oil 1200tng x 100	10	2017-01-02
Giant Eagle Pharmacy	Generic Miralax Laxative	5	2017-01-02
Giant Eagle Pharmacy	Hydrogen Peroxide 3 percent	10	2017-01-02
Giant Eagle Pharmacy	Melatonin 5mg x 120	13	2017-01-02
Giant Eagle Pharmacy	Midol	9	2017-01-02
Giant Eagle Pharmacy	Oxymetazoline Nasal Spray	10	2017-01-02
Giant Eagle Pharmacy	PreNatal Vitamins x 100	13	2017-01-02
Giant Eagle Pharmacy	Protein Powder For Men	7	2017-01-02
Giant Eagle Pharmacy	Psuefoephedrine 12HR	11	2017-01-02
Giant Eagle Pharmacy	Psuefoephedrine 30 mg	11	2017-01-02
Giant Eagle Pharmacy	Slow Fe 45mg x 30	12	2017-01-02
Giant Eagle Pharmacy	SPF 30 Sunscreen Spray	9	2017-01-02
Giant Eagle Pharmacy	Terbinafine 1 percent Cream	11	2017-01-02
Giant Eagle Pharmacy	Vitamin B12 2500mcg x 110	6	2017-01-02

Back to Statistics page

- **Low Availability Medicines in the store**

List of medicines whose availability is less (usually less than 7):

Back to Statistics page

Giant Eagle Pharmacy

Medicine Name	Medicine Count
Aspirin 325 mg	5
Generic DayQuil Cap	6
Generic Miralax Laxative	5
Miconazole Vaginal 7 day	6
Right Guard Deodorant	6
Secret Deodorant	5
Senna 8.6mg	6
Sore Throat Lozenges	5
Toothpaste	6
Vitamin B12 2500mcg x 110	6

CVS Pharmacy

Medicine Name	Medicine Count
Calcium Citrate 400mg x 100	5
Chewable Antacid	6
Generiz Robitussin 8 oz	5
Glucosamine 1000mg x 120	6
Glucosamine/Chondroitin x 60	6
Hand Sanitizer 12 oz	5
Mouth Wash 500 ml	5
Petroleum Jelly 3.75 oz	6
Terbinafine 1 percent Cream	6

- **Availability of Medicines in each store**
  - **CVS Pharmacy**

Availability of Medicines in CVS Pharmacy

Back to Statistics page

Medicine Name	Availability of Medicine
Daily Multivitamins Assorted	10
Clotrimazole Vaginal 7 day	10
Loratadine D	10
Tiger Balm 2 oz	10
Cough Drops	10
Benzocaine 7 percent Gel	10
Mucinex for Kids	10
Right Guard Deodorant	10
Asprin for Kids	10
After Shave Lotion	10
Docusate Stool Softener	10
Fexofendanine / antihistamine 30mg	10
Saline Nasal Spray	10
Loratidine 10mg	10
Melatonin 5mg x 120	10
Culturelle for Kids	11
Generic Miralax Laxative	11
Vitamin D 1000iu x 100	11
Benzoyl Peroxide 10 percent Wash	11

  - **Giant Eagle Pharmacy**

Availability of Medicines in Giant Eagle Pharmacy

Back to Statistics page

Medicine Name	Availability of Medicine
Biotin 5000mcg x 110	10
Clotrimazole Vaginal 7 day	10
Oxymetazoline Nasal Spray	10
Men's Healthy Testorsterone	10
CereVe Lotion	10
Petroleum Jelly 3.75 oz	10
Anti - Dandruff Shampoo	10
Folic Acid 400mcg x 100	10
Benzoyl Peroxide 10 percent Wash	10
Famotidine 20mg	10
CereVe Baby Lotion	10
Fish Oil 1200tng x 100	10
Lactase Supplement	10
Dental Floss	10
Mucinex for Kids	10
Generic Mucinex D	10
Hydrogen Peroxide 3 percent	10
Women's supplements	11
Folic Acid 1mg x 100	11

- **Rite Aid Pharmacy**

Availability of Medicines in Rite Aid Pharmacy

Back to Statistics page

Medicine Name	Availability of Medicine
Women's supplements	10
SPF 30 Sunscreen Spray	10
Generic Miralax Laxative	10
Biotin 5000mcg x 110	10
Pediatric Acetaminophen 2.6g	10
Tiger Balm 2 oz	10
Vitamin D 1000iu x 100	10
Toothpaste	10
Benzoyl Peroxide 5 percent Wash	10
Suave 2 in 1 Shampoo	10
Miconazole Vaginal 7 day	10
CereVe Baby Lotion	10
Bar Soap	10
Fish Oil 1200tng x 100	10
Gas Relief 80mg	10
Asprin for Kids	10
Clotrimazole Vaginal 7 day	11
Clotrimazole 1 percent Cream	11
Vitamin C 500mg x 100	11
Shaving Gel	11
Band Aids Assorted	11

9. Testing Efforts

- Unit Testing and Peer Testing have been done across various pages of the application. Certain bugs and merge conflicts were experienced at various steps of the coding and testing phase, which have been resolved in the testing phase.

10. Limitations

- 5 medicines can be added to a stock at one time.
- Adding a medicine, category, customer and staff can only be done one at a time
- Editing of medicine, category, stock, customer and staff can only be done one at a time

11. Future Improvements

- Allow searchable statistics for manager can be implemented.
- Have custom search feature for customer and staff to search for a stock, order or a medicine.
- The old data for customers and staffs can be moved to archival tables instead of deleting.
- The application can be improvised in future by implementing recommendation features using Data Mining algorithms and Machine Learning techniques on a real-time dataset.