DBMS PROJECT

1. Introduction to the working of the system:

Pharmacy Management System

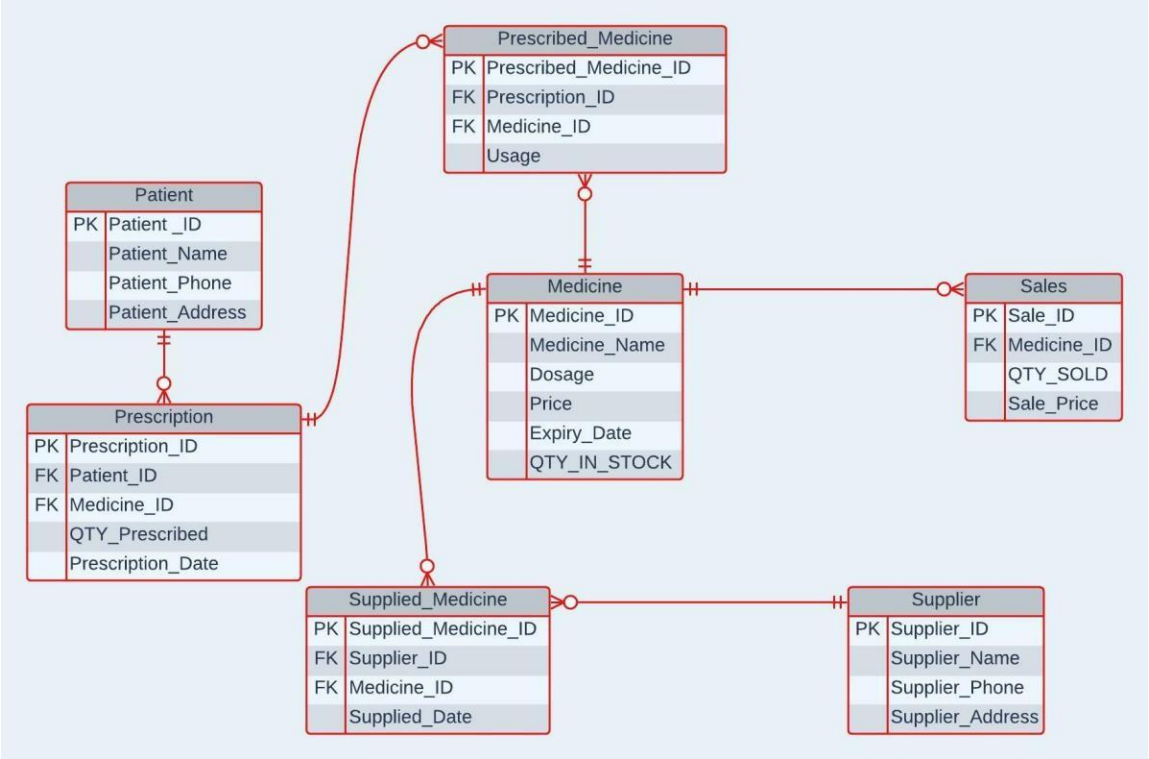
It is a well-known and the most demanding database System in the current era. It will provide a solution for managing the day-by-day operations of a pharmacy. It includes various operations like sales of medicine, suppliers information, medicine information, patient information, prescribed medicines etc. The main objective of this system is to provide an efficient and effective way of managing the pharmacy's operations.

Working of Our System:

- Our system will have the detail of all those supplier companies (name, phone, address, id) who deliver different medicines to any pharmacy. It will help the pharmacy to keep the records of all the supplier so that they can contact them again, moreover, it will help to add or update the quantity of medicine at the time of receiving.
- It will contain the records of the patient (name, phone, address) who received any medicine so that he can ask for the same medicine using the prescription number assigned to him.
- This system will help us to check in seconds that either a medicine available or not and the quantity of medicine.
- This system will keep the records of Medicines i.e. id, name, price, Expiry date and the quantity available

- After selecting the medicine by the patient, it will keep the record of the medicines bought, quantities and total price with the patient's id.
- It will also store the information of Sales of each medicine.

2. ERD of the system:



3. Relational Schema evaluated using Normalization:

Relations:

- PATIENT (Patient_ID, Patient_Name, Patient_Phone, Patient_Address)
- MEDICINE (Medicine_ID, Medicine_Name)
- MEDICINE_DOSAGE (Medicine_Dosage_ID, Medicine_ID, Dosage, price, Manufacture_Date, Expiry_Date)
- PRESCRIPTION (Prescription_ID, Patient_ID , Prescription_Date)
- PRESCRIBED_MEDICINE (Prescribed_Medicine_id, Prescription_ID, Medicine_Dosage_ID, qty_prescribed)
- SALES (Sales_ID , Medicine_Dosage_ID, Qty_Sold, Sale_Price, Date_Sold)
- SUPPLIER (Supplier_ID,Supplier_Name, Supplier_Phone , Supplier_Address)
- SUPPLIED_MEDICINE (Supplied_Medicine_ID , Supplier_ID, Medicine_Dosage_ID, Qty_Supplied, Supplied_Date)

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4. Description of the relations in the following format:

Patient:

Attribute	Data Type	Size	Constraints
Patient_ID	Number	6	PK
Patient_Name	VarChar2	30	NOT NULL
Patient_Phone	Char	11	NOT NULL
Patient_Address	VarChar2	50	_____

Medicine:

Attribute	Data Type	Size	Constraints

Medicine_ID	Number	5	PK
Medicine_Name	VarChar2	30	NOT NULL

Medicine_Dosage

Attribute	Data Type	Size	Constraints
Medicine_Dosage_ID	Number	5	PK
Dosage	VarChar2	6	NOT NULL
Price	Number	6	NOT NULL
Manufacture_Date	DATE	___	DEFAULT(SYSDATE)
Expiry_Date	DATE	___	DEFAULT(SYSDATE)
Medicine_ID	Number	5	FK

Prescription:

Attribute	Data Type	Size	Constraints
Prescription _ID	Number	5	PK
Patient_ID	Number	6	FK
Prescription_Date	Date	_____	DEFAULT(SYSDATE)

Sales:

Attribute	Data Type	Size	Constraints
Sales_ID	Number	5	PK

Medicine_Dosage_ID	Number	5	FK
QTY_SOLD	Number	5	NOT NULL , CHECK(QTY>0)
Sale_Price	Number	8	CHECK (SALE_PRICE>0)
Date_Sold	DATE	___	DEFAULT(SYSDATE)

Supplier:

Attribute	Data Type	Size	Constraints
Supplier_ID	Number	5	PK
Supplier_Name	VarChar2	30	NOT NULL
Supplier_Phone	Char	11	NOT NULL
Supplied_Address	VarChar2	30	_____

Supplied_Medicine:

Attribute	Data Type	Size	Constraints
Supplied_Medicine_ID	Number	5	PK
Supplier_ID	Number	5	FK
Medicine_Dosage_ID	Number	5	FK
QTY_Supplied	Number	5	NOT NULL
Supplied_Date	DATE	_____	DEFAULT (SYSDATE)

Prescribed_Medicine:

Attribute	Data Type	Size	Constraints
Prescribed_Medicine_ID	Number	5	PK
Prescription_ID	Number	5	FK
Medicine_Dosage_ID	Number	5	FK
QTY_Prescribed	Number	5	NOT NULL, CHECK(QTY>0)

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5. CREATE TABLE statements for all the relations of your system:

```
CREATE TABLE Patient (
Patient_ID number(6) constraint patient_pk PRIMARY KEY,
Patient_Name varchar2(30) constraint patient_name_const NOT NULL,
Patient_Phone char(11) constraint patient_phone_const NOT NULL,
Patient_Address varchar2(50)
);

CREATE TABLE Medicine (
Medicine_ID number(5) constraint medicine_pk PRIMARY KEY,
Medicine_Name varchar2(30) constraint mname_notnull NOT NULL,
)

CREATE table Medicice_Dosage (
Medicine_Dosage_ID number(5) constraint med_dos_pk PRIMARY KEY,
Medicine_ID number(5),
Dosage varchar2(5) constraint dosage_not_null NOT NULL,
price number(5) NOT NULL,
Manufacture_Date DATE DEFAULT sysdate,
Expiry_Date DATE DEFAULT sysdate,
```

```
constraint med_dos_fk FOREIGN KEY(Medicine_ID) REFERENCES MEDICINE(Medicine_ID)
)

CREATE TABLE Prescription (
Prescription_ID number(5) constraint prescription_pk PRIMARY KEY,
Patient_ID number(6),
Prescription_Date DATE DEFAULT sysdate,
constraint patient_prescription_fk FOREIGN KEY(Patient_ID) REFERENCES Patient(Patient_ID) on delete
set null,
);

CREATE TABLE Prescribed_Medicine (
  Prescribed_Medicine_ID number(5) PRIMARY KEY,
  Prescription_ID number(5),
  Medicine_Dosage_ID INT number(5),
  Qty_prescribed number(3) NOT NULL,
  constrain pre_med_fk FOREIGN KEY(Prescription_ID) REFERENCES Prescription(Prescription_ID),
  constraint pre_med_dos_fk FOREIGN KEY(Medicine_Dosage_ID) REFERENCES
Medicine_Dosage(Medicine_Dosage_ID)
)
CREATE TABLE Sales (
Sales_ID number(5) constraint sales_pk PRIMARY KEY,
Medicine_Dosage_ID number(5),
Qty_Sold number(5) constraint qty_sold_notnull NOT NULL,
Sale_Price number(6) CHECK(Sale_Price>0),
Date_Sold DATE DEFAULT sysdate,
constraint qty_sold_check CHECK(Qty_Sold>0),
constraint medicine_sales_fk FOREIGN KEY(Medicine_Dosage_ID) REFERENCES
Medicine_Dosage(Medicine_Dosage_ID)
);
```

```
CREATE TABLE Supplier (
Supplier_ID number(5) constraint supplier_pk PRIMARY KEY,
Supplier_Name varchar2(30) constraint supp_name_notnull NOT NULL,
Supplier_Phone char(11) NOT NULL,
Supplier_Address varchar2(30)
);

CREATE TABLE Supplied_Medicine (
  Supplied_Medicine_ID number(5) constraint supp_med_pk PRIMARY KEY,
  Supplier_ID number(5),
  Medicine_Dosage_ID number(5),
  Qty_Supplied number(5) NOT NULL,
  Supplied_Date DATE DEFAULT sysdate,
  constraint supp_supp_fk FOREIGN KEY (Supplier_ID) REFERENCES Supplier(Supplier_ID),
  constraint supp_med_fk FOREIGN KEY (Medicine_Dosage_ID) REFERENCES
Medicine_Dosage(Medicine_Dosage_ID),
  constraint qty_supp CHECK(qty_supplied > 0)
);
```

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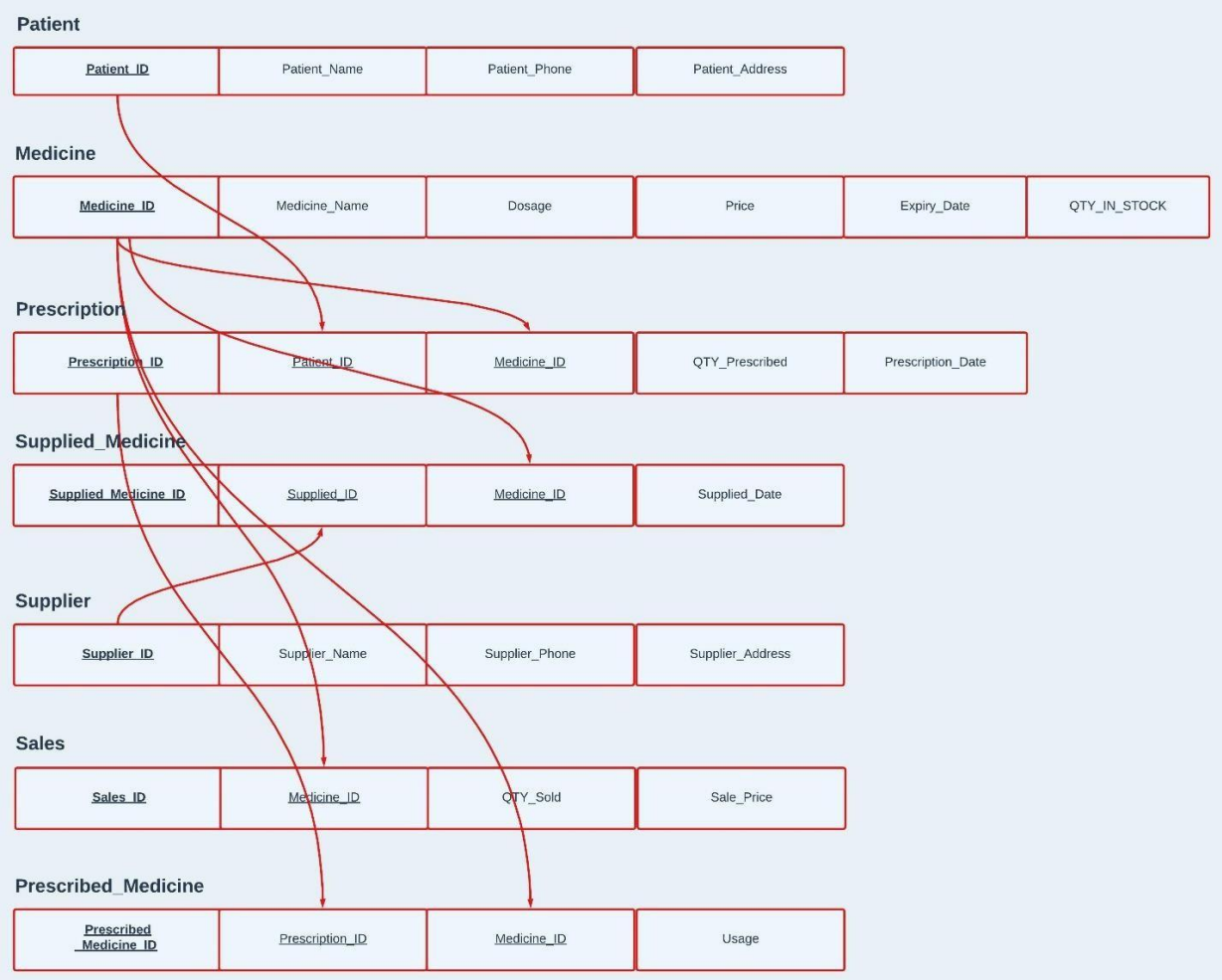
6. Relational data model showing the association among different relations of the relational schema:


Patient
Patient_ID
Patient_Name
Patient_Phone
Patient_Address
Medicine
Medicine_ID
Medicine_Name
Dosage
Price
Expiry_Date
QTY_IN_STOCK
Prescription
Prescription_ID
Patient_ID
Medicine_ID
QTY_Prescribed
Prescription_Date
Supplied_Medicine
Supplied_Medicine_ID
Supplied_ID
Medicine_ID
Supplied_Date
Supplier
Supplier_ID
Supplier_Name
Supplier_Phone
Supplier_Address
Sales
Sales_ID
Medicine_ID
QTY_Sold
Sale_Price
Prescribed_Medicine
Prescribed Medicine_ID
Prescription_ID
Medicine_ID
Usage

7. Select statement for at least five common reports to be generated by the system.

Query 01:

Write a query that will display medicine_name, its different dosages, prices, manufacture_date, expiry_date of Medicine name “Paracetamol”.

SELECT m.medicine_name, d.dosage, d.price, d.manufacture_date, d.expiry_date FROM Medicine_Dosage d join medicine m

ON(m.medicine_id=d.medicine_id) where m.medicine_name='Paracetamol'

```
SELECT m.medicine_name, d.dosage, d.price, d.manufacture_date, d.expiry_date FROM Medicine_Dosage d join medicine m
on(m.medicine_id=d.medicine_id) where m.medicine_name='Paracetamol'
```

Results Explain Describe Saved SQL History

MEDICINE_NAME	DOSAGE	PRICE	MANUFACTURE_DATE	EXPIRY_DATE
Paracetamol	10mg	20	01/01/2022	01/01/2024
Paracetamol	40mg	30	01/01/2022	01/01/2024
Paracetamol	100mg	40	01/01/2022	01/10/2023
Paracetamol	500mg	50	01/01/2022	01/11/2023

4 rows returned in 0.01 seconds Download

Query 02:

Write a Query that will display medicine_name, dosage, quantity sold, sale price and date sold.

select m.medicine_name, d.dosage, s.qty_sold, s.sale_price, s.date_sold

from sales s join medicine_dosage d

on(d.medicine_dosage_id=s.medicine_dosage_id)

join medicine m on(m.medicine_id=d.medicine_id)

```
select m.medicine_name, d.dosage, s.qty_sold, s.sale_price, s.date_sold
from sales s join medicine_dosage d
on(d.medicine_dosage_id=s.medicine_dosage_id)
join medicine m on(m.medicine_id=d.medicine_id)
```

Results Explain Describe Saved SQL History

MEDICINE_NAME	DOSAGE	QTY_SOLD	SALE_PRICE	DATE_SOLD
Aspirin	50mg	10	500	01/01/2022
Aspirin	50mg	15	450	02/01/2022
Aspirin	50mg	20	400	03/01/2022
Paracetamol	10mg	25	350	04/01/2022
Paracetamol	40mg	30	300	05/01/2022
Ibuprofen	15mg	35	250	06/01/2022
Ibuprofen	50mg	40	200	07/01/2022
Amoxicillin	10mg	45	150	08/01/2022
Metronidazole	15mg	50	100	09/01/2022
Metronidazole	100mg	10	50	10/01/2022
Doxycycline	100mg	3	55	11/01/2022
Doxycycline	100mg	15	60	12/01/2022
Azithromycin	5mg	10	65	01/01/2023

Query 03:

Write a Query that will display supplier_name, medicine_name, dosage of medicine, quantity supplied and supplied date.

select s.supplier_name, m.medicine_name, d.dosage, supp.qty_supplied, supp.supplied_date from supplier s join supplied_medicine supp on(s.supplier_id=supp.supplier_id) join medicine_dosage d on(d.medicine_dosage_id=supp.medicine_dosage_id) join medicine m on(m.medicine_id=d.medicine_id)

```
select s.supplier_name, m.medicine_name, d.dosage, supp.qty_supplied, supp.supplied_date from
supplier s join supplied_medicine supp on(s.supplier_id=supp.supplier_id)
join medicine_dosage d on(d.medicine_dosage_id=supp.medicine_dosage_id)
join medicine m on(m.medicine_id=d.medicine_id)
```

Results Explain Describe Saved SQL History

SUPPLIER_NAME	MEDICINE_NAME	DOSAGE	QTY_SUPPLIED	SUPPLIED_DATE
Anwar Traders	Ibuprofen	50mg	2000	07/07/2022
Sarwar Suppliers	Ibuprofen	15mg	3000	02/07/2022
Sarwar Suppliers	Doxycycline	100mg	3000	07/04/2022
Tariq Enterprises	Prednisone	15mg	1000	07/09/2022
Hassan Enterprises	Prednisone	15mg	2000	07/07/2021
Waqar & Sons	Prednisone	15mg	1500	04/07/2022
Ahmed Traders	Azithromycin	50mg	500	07/10/2022
Hassan Enterprises	Azithromycin	5mg	300	07/11/2022
Muzaffar & Sons	Ciprofloxacin	15mg	1000	07/07/2020
Waqar & Sons	Ciprofloxacin	15mg	2500	05/07/2022
Anwar Traders	Aspirin	50mg	1000	06/07/2022

Query 04:

Write a Query that will display patient name, medicine name that is prescribed, dosage of medicine, quantity prescribed and prescription date.

select p.patient_name, m.medicine_name, d.dosage, qty.qty_prescribed, pre.prescription_date from prescribed_medicine qty join prescription pre on(pre.prescription_id=qty.prescription_id)

join medicine_dosage d on(d.medicine_dosage_id=qty.medicine_dosage_id)

join patient p on (p.patient_id=pre.patient_id)

join medicine m on(m.medicine_id=d.medicine_id)

```
select p.patient_name, m.medicine_name, d.dosage, qty.qty_prescribed, pre.prescription_date
from prescribed_medicine qty join prescription pre on(pre.prescription_id=qty.prescription_id)
join medicine_dosage d on(d.medicine_dosage_id=qty.medicine_dosage_id)
join patient p on (p.patient_id=pre.patient_id)
join medicine m on(m.medicine_id=d.medicine_id)
```

Results Explain Describe Saved SQL History

PATIENT_NAME	MEDICINE_NAME	DOSAGE	QTY_PRESCRIBED	PRESCRIPTION_DATE
NOMAN	Ibuprofen	50mg	3	04/17/2022
NOMAN	Ibuprofen	50mg	10	12/25/2022
BAJWA	Ibuprofen	50mg	6	12/17/2022
ALI	Ibuprofen	15mg	5	12/16/2022
BAJWA	Amoxicillin	10mg	15	12/07/2021
NOMAN	Amoxicillin	10mg	8	04/17/2022
BAJWA	Metronidazole	15mg	3	12/07/2021
ALI	Metronidazole	15mg	10	10/17/2021
BAJWA	Doxycycline	100mg	10	12/07/2021
ALI	Prednisone	15mg	7	10/17/2021
ALI	Prednisone	15mg	15	12/16/2022
BAJWA	Azithromycin	5mg	12	12/07/2021
BAJWA	Ciprofloxacin	15mg	7	12/17/2022

Query 05:

Write a Query that will display name of Medicine, and calculate sales of each medicine.

select m.medicine_name, sum(s.sale_price) as "Sales of Each Medicine" from medicine m

join medicine_dosage d on(d.medicine_id=m.medicine_id)

join sales s on(s.medicine_dosage_id=d.medicine_dosage_id)

group by m.medicine_name

```
select m.medicine_name, sum(s.sale_price) as "Sales of Each Medicine" from medicine m
join medicine_dosage d on(d.medicine_id=m.medicine_id)
join sales s on(s.medicine_dosage_id=d.medicine_dosage_id)
group by m.medicine_name
```

Results Explain Describe Saved SQL History

MEDICINE_NAME	Sales of Each Medicine
Amoxicillin	150
Hydrocodone	255
Metronidazole	150
Azithromycin	65
Paracetamol	720
Omeprazole	95
Doxycycline	115
Warfarin	100
Aspirin	1350
Ibuprofen	450
Ciprofloxacin	75

11 rows returned in 0.01 seconds Download