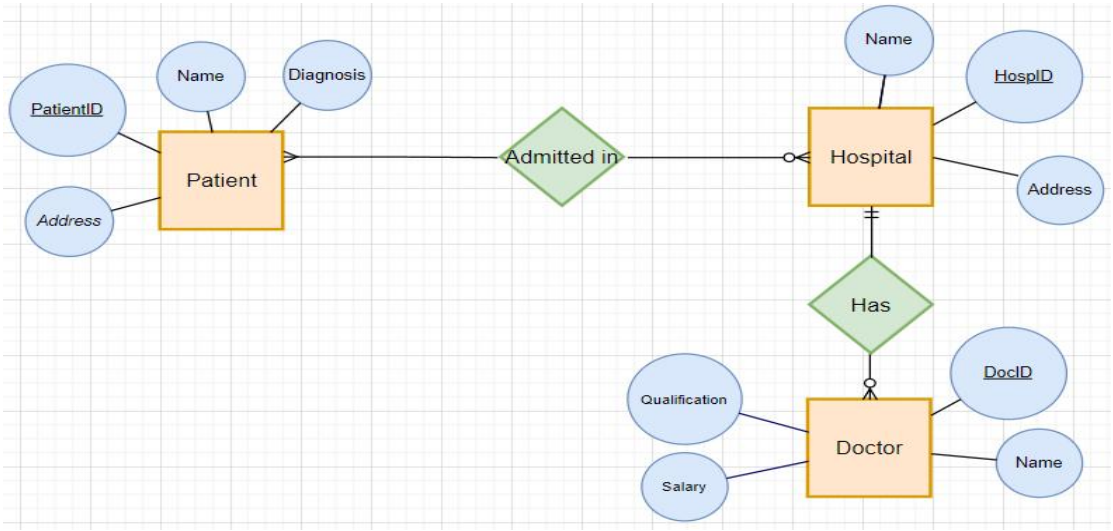
Assignment

1. Using the below shown ERD create a database “HospitalDB” which will have below shown tables along with the attributes. Also show description of tables, insert three records in each table and display all the records from all tables.




```
mysql> create database HospitalDB;
Query OK, 1 row affected (0.03 sec)
```

```
mysql> use HospitalDB;
Database changed
```

```
mysql> CREATE TABLE Hospital (
    ->     hospId INT PRIMARY KEY,
    ->     name VARCHAR(255),
    ->     address VARCHAR(255)
    -> );
Query OK, 0 rows affected (0.09 sec)
```

```
mysql> CREATE TABLE Patient (
    ->     patientId INT PRIMARY KEY,
    ->     name VARCHAR(255),
    ->     diagnosis VARCHAR(255),
    ->     address VARCHAR(255),
    ->     hospitalId INT,
    ->     FOREIGN KEY (hospitalId) REFERENCES Hospital(hospId)
    -> );
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> CREATE TABLE Doctor (
    ->     docId INT PRIMARY KEY,
    ->     name VARCHAR(255),
    ->     qualification VARCHAR(255),
    ->     salary DECIMAL(10, 2),
    ->     hospitalId INT,
    ->     FOREIGN KEY (hospitalId) REFERENCES Hospital(hospId)
    -> );
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> INSERT INTO Hospital (hospId, name, address) VALUES
    -> (1, 'General Hospital', '123 Main Street'),
    -> (2, 'City Medical Center', '456 Elm Avenue'),
    -> (3, 'County Health Clinic', '789 Oak Road');
Query OK, 3 rows affected (0.05 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> Select * from Hospital;
+--------+----------------------+-----------------+
| hospId | name                 | address         |
+--------+----------------------+-----------------+
|      1 | General Hospital     | 123 Main Street |
|      2 | City Medical Center  | 456 Elm Avenue  |
|      3 | County Health Clinic | 789 Oak Road    |
+--------+----------------------+-----------------+
3 rows in set (0.01 sec)
```

```
mysql> INSERT INTO Doctor (docId, name, qualification, salary, hospitalId) VALUES
    -> (101, 'Dr. Smith', 'MD', 120000, 1),
    -> (102, 'Dr. Johnson', 'Surgeon', 150000, 2),
    -> (103, 'Dr. Brown', 'Pediatrician', 110000, 1);
Query OK, 3 rows affected (0.02 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> Select * from Doctor;
+-------+------------+---------------+----------+------------+
| docId | name       | qualification | salary   | hospitalId |
+-------+------------+---------------+----------+------------+
|   101 | Dr. Smith  | MD            | 120000.00 |          1 |
|   102 | Dr. Johnson | Surgeon       | 150000.00 |          2 |
|   103 | Dr. Brown  | Pediatrician  | 110000.00 |          1 |
+-------+------------+---------------+----------+------------+
3 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Patient (patientId, name, diagnosis, address, hospitalId) VALUES
    -> (1001, 'John Doe', 'Fever', '456 Elm Avenue', 2),
    -> (1002, 'Jane Smith', 'Broken Arm', '123 Main Street', 1),
    -> (1003, 'Robert Johnson', 'Cough', '789 Oak Road', 3);
Query OK, 3 rows affected (0.04 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> Select * from Patient;
+-----------+---------------+------------+-----------------+------------+
| patientId | name          | diagnosis  | address         | hospitalId |
+-----------+---------------+------------+-----------------+------------+
|      1001 | John Doe      | Fever      | 456 Elm Avenue  |          2 |
|      1002 | Jane Smith    | Broken Arm | 123 Main Street |          1 |
|      1003 | Robert Johnson | Cough      | 789 Oak Road    |          3 |
+-----------+---------------+------------+-----------------+------------+
3 rows in set (0.00 sec)
```

2. Create a table “MyCustomer” with the data given below where “Cust_id” is the primary key and “Cust_name” cannot have null values.
   Create a table “MyOrders” with the data given below where “Ord_id” is the primary key and “Cust_id” is referring to “MyCustomer” table for its values. Also “Prod_id” is referring to “MyProduct” table for its values.
   Create a table “MyProduct” with the data given below where “Prod_id” is the primary key.

```
mysql> CREATE TABLE MyCustomer (
    -> Cust_id INT PRIMARY KEY,
    -> Cust_name VARCHAR(50) NOT NULL,
    -> Cust_phone INT(10),
    -> City varchar(50),
    -> Country varchar(50));
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> CREATE TABLE MyOrder(
    -> Ord_id varchar(4) PRIMARY KEY,
    -> Ord_Date date,
    -> Ship_Date date,
    -> Cust_id INT,
    -> Prod_ID varchar(50),
    ->  FOREIGN KEY (Cust_id) REFERENCES MyCustomer(Cust_id),
    ->     FOREIGN KEY (Prod_id) REFERENCES MyProduct(Prod_id)
    -> );
Query OK, 0 rows affected (0.05 sec)
```

```
mysql> CREATE TABLE Myproduct(
    -> Prod_id varchar(4) PRIMARY KEY,
    -> Prod_name varchar(50),
    -> Category varchar(50),
    -> Price INT(10),
    -> Qty_Available INT
    -> );
Query OK, 0 rows affected (0.05 sec)
```

a) Use a single insert query to insert records in each of the three tables.

```
mysql> INSERT INTO MyCustomer (Cust_id, Cust_name,Cust_phone,City,Country) VALUES
    -> (1,'Ramesh Solanki',12345123,'Pune','India'),
    -> (2,'Geeta Patil',87654567,'Mumbai','India'),
    -> (3,'Chloe Clinton',98125621,'Delhi','India'),
    -> (4,'Selena Shetty',74356980,'Pune','India');
Query OK, 4 rows affected (0.04 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO Myproduct(Prod_id, Prod_name,Category,Price,Qty_Available) VALUES
    -> ('P1','Moisturizer','Skin care',1200,42),
    -> ('P2','The Alchemist','Books',1450,54),
    -> ('P3','Rice','Grocery',2500,8),
    -> ('P4','Kafka on the shore','Books',420,25);
Query OK, 4 rows affected (0.02 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO MyOrder(Ord_id,Ord_Date,Ship_Date,Cust_id,Prod_id) VALUES
    -> (01,'2022-02-12','2022-02-16',2,'P1'),
    -> (02,'2022-06-22','2022-06-26',1,'P2'),
    -> (03,'2021-09-13','2021-09-25',4,'P4'),
    -> (04,'2021-08-04','2021-08-14',3,'P3'),
    -> (05,'2021-02-12','2021-02-14',2,'P4');
Query OK, 5 rows affected (0.04 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

b) Display all records from the tables

Cust_id	Cust_name	Cust_phone	City	Country
C1	Ramesh Solanki	12345123	Pune	India
C2	Geeta Patil	87654567	Mumbai	India
C3	Chloe Clinton	98125621	Delhi	India
C4	Selena Shetty	74356980	Pune	India

```
mysql> select * from MyCustomer;
+---------+----------------+------------+--------+---------+
| Cust_id | Cust_name      | Cust_phone | City   | Country |
+---------+----------------+------------+--------+---------+
|       1 | Ramesh Solanki |   12345123 | Pune   | India   |
|       2 | Geeta Patil    |   87654567 | Mumbai | India   |
|       3 | Chloe Clinton  |   98125621 | Delhi  | India   |
|       4 | Selena Shetty  |   74356980 | Pune   | India   |
+---------+----------------+------------+--------+---------+
4 rows in set (0.00 sec)
```

Ord_id	Ord_Date	Ship_Date	Cust_id	Prod_id
O1	12-FEB-2022	16-FEB-2022	C2	P1
O2	22-JUN-2022	26-JUN-2022	C1	P2
O3	13-NOV-2021	25-NOV-2021	C4	P4
O4	04-OCT-2021	14-OCT-2021	C3	P3
O5	12-FEB-2021	16-FEB-2021	C2	P4

```
mysql> select * from MyOrder;
+--------+------------+------------+---------+---------+
| Ord_id | Ord_Date   | Ship_Date  | Cust_id | Prod_ID |
+--------+------------+------------+---------+---------+
| 1      | 2022-02-12 | 2022-02-16 |       2 | P1      |
| 2      | 2022-06-22 | 2022-06-26 |       1 | P2      |
| 3      | 2021-09-13 | 2021-09-25 |       4 | P4      |
| 4      | 2021-08-04 | 2021-08-14 |       3 | P3      |
| 5      | 2021-02-12 | 2021-02-14 |       2 | P4      |
+--------+------------+------------+---------+---------+
5 rows in set (0.00 sec)
```

Prod_id	Prod_name	Category	Price	Qty_Available
P1	Moisturizer	Skin care	1200	42
P2	The Alchemist	Books	1450	54
P3	Rice	Grocery	2500	8
P4	Kafka on the Shore	Books	420	25

```
mysql> select * from MyProduct;
+---------+--------------------+-----------+-------+---------------+
| Prod_id | Prod_name          | Category  | Price | Qty_Available |
+---------+--------------------+-----------+-------+---------------+
| P1      | Moisturizer        | Skin care |  1200 |            42 |
| P2      | The Alchemist      | Books     |  1450 |            54 |
| P3      | Rice               | Grocery   |  2500 |             8 |
| P4      | Kafka on the shore | Books     |   420 |            25 |
+---------+--------------------+-----------+-------+---------------+
4 rows in set (0.00 sec)
```

Perform the following on the above table:

a. Display the details of the customer that lives in a city which has the second character as “u” in its name.

```
mysql> SELECT *
    -> FROM MyCustomer
    -> WHERE City LIKE '_u%';
+---------+----------------+------------+--------+---------+
| Cust_id | Cust_name      | Cust_phone | City   | Country |
+---------+----------------+------------+--------+---------+
|       1 | Ramesh Solanki |   12345123 | Pune   | India   |
|       2 | Geeta Patil    |   87654567 | Mumbai | India   |
|       4 | Selena Shetty  |   74356980 | Pune   | India   |
+---------+----------------+------------+--------+---------+
3 rows in set (0.00 sec)
```

b. Display the average price of all the products available in the “MyProduct” table, where column header should be “Price Average”

```
mysql> SELECT AVG(Price) AS "Price Average"
    -> FROM MyProduct;
+---------------+
| Price Average |
+---------------+
|     1392.5000 |
+---------------+
1 row in set (0.00 sec)
```

b. Using subquery, find the order date and shipping date for the products ordered by “Selena Shetty”.

```
mysql> SELECT Ord_Date, Ship_Date
    -> FROM MyOrder
    -> WHERE Cust_id = (
    ->     SELECT Cust_id
    ->     FROM MyCustomer
    ->     WHERE Cust_name = 'Selena Shetty'
    -> );
+------------+------------+
| Ord_Date   | Ship_Date  |
+------------+------------+
| 2021-09-13 | 2021-09-25 |
+------------+------------+
1 row in set (0.00 sec)
```

c. Find out the total amount that Customer “Geeta Patil” has to pay on receiving the products she ordered.

```
mysql> SELECT SUM(P.Price) AS Total_Amount
    -> FROM MyOrder O
    -> JOIN MyProduct P ON O.Prod_id = P.Prod_id
    -> JOIN MyCustomer C ON O.Cust_id = C.Cust_id
    -> WHERE C.Cust_name = 'Geeta Patil';
+--------------+
| Total_Amount |
+--------------+
|         1620 |
+--------------+
1 row in set (0.00 sec)
```

d. Demonstrate the use of inner join and cross join on tables “MyCustomer” and “MyOrders”

```
mysql> SELECT *
    -> FROM MyCustomer
    -> INNER JOIN MyOrder ON MyCustomer.Cust_id = MyOrder.Cust_id;
+---------+---------------+------------+--------+---------+--------+------------+------------+---------+---------+
| Cust_id | Cust_name     | Cust_phone | City   | Country | Ord_id | Ord_Date   | Ship_Date  | Cust_id | Prod_ID |
+---------+---------------+------------+--------+---------+--------+------------+------------+---------+---------+
|       1 | Ramesh Solanki |   12345123 | Pune   | India   | 2      | 2022-06-22 | 2022-06-26 |       1 | P2      |
|       2 | Geeta Patil    |   87654567 | Mumbai | India   | 1      | 2022-02-12 | 2022-02-16 |       2 | P1      |
|       2 | Geeta Patil    |   87654567 | Mumbai | India   | 5      | 2021-02-12 | 2021-02-14 |       2 | P4      |
|       3 | Chloe Clinton  |   98125621 | Delhi  | India   | 4      | 2021-08-04 | 2021-08-14 |       3 | P3      |
|       4 | Selena Shetty  |   74356980 | Pune   | India   | 3      | 2021-09-13 | 2021-09-25 |       4 | P4      |
+---------+---------------+------------+--------+---------+--------+------------+------------+---------+---------+
5 rows in set (0.00 sec)
```

```
mysql> SELECT *
    -> FROM MyCustomer
    -> CROSS JOIN MyOrder;
+---------+---------------+------------+--------+---------+--------+------------+------------+---------+---------+
| Cust_id | Cust_name     | Cust_phone | City   | Country | Ord_id | Ord_Date   | Ship_Date  | Cust_id | Prod_ID |
+---------+---------------+------------+--------+---------+--------+------------+------------+---------+---------+
|       1 | Ramesh Solanki |   12345123 | Pune   | India   | 1      | 2022-02-12 | 2022-02-16 |       2 | P1      |
|       2 | Geeta Patil    |   87654567 | Mumbai | India   | 1      | 2022-02-12 | 2022-02-16 |       2 | P1      |
|       3 | Chloe Clinton  |   98125621 | Delhi  | India   | 1      | 2022-02-12 | 2022-02-16 |       2 | P1      |
|       4 | Selena Shetty  |   74356980 | Pune   | India   | 1      | 2022-02-12 | 2022-02-16 |       2 | P1      |
|       1 | Ramesh Solanki |   12345123 | Pune   | India   | 2      | 2022-06-22 | 2022-06-26 |       1 | P2      |
|       2 | Geeta Patil    |   87654567 | Mumbai | India   | 2      | 2022-06-22 | 2022-06-26 |       1 | P2      |
|       3 | Chloe Clinton  |   98125621 | Delhi  | India   | 2      | 2022-06-22 | 2022-06-26 |       1 | P2      |
|       4 | Selena Shetty  |   74356980 | Pune   | India   | 2      | 2022-06-22 | 2022-06-26 |       1 | P2      |
|       1 | Ramesh Solanki |   12345123 | Pune   | India   | 3      | 2021-09-13 | 2021-09-25 |       4 | P4      |
|       2 | Geeta Patil    |   87654567 | Mumbai | India   | 3      | 2021-09-13 | 2021-09-25 |       4 | P4      |
|       3 | Chloe Clinton  |   98125621 | Delhi  | India   | 3      | 2021-09-13 | 2021-09-25 |       4 | P4      |
|       4 | Selena Shetty  |   74356980 | Pune   | India   | 3      | 2021-09-13 | 2021-09-25 |       4 | P4      |
|       1 | Ramesh Solanki |   12345123 | Pune   | India   | 4      | 2021-08-04 | 2021-08-14 |       3 | P3      |
|       2 | Geeta Patil    |   87654567 | Mumbai | India   | 4      | 2021-08-04 | 2021-08-14 |       3 | P3      |
|       3 | Chloe Clinton  |   98125621 | Delhi  | India   | 4      | 2021-08-04 | 2021-08-14 |       3 | P3      |
|       4 | Selena Shetty  |   74356980 | Pune   | India   | 4      | 2021-08-04 | 2021-08-14 |       3 | P3      |
|       1 | Ramesh Solanki |   12345123 | Pune   | India   | 5      | 2021-02-12 | 2021-02-14 |       2 | P4      |
|       2 | Geeta Patil    |   87654567 | Mumbai | India   | 5      | 2021-02-12 | 2021-02-14 |       2 | P4      |
|       3 | Chloe Clinton  |   98125621 | Delhi  | India   | 5      | 2021-02-12 | 2021-02-14 |       2 | P4      |
|       4 | Selena Shetty  |   74356980 | Pune   | India   | 5      | 2021-02-12 | 2021-02-14 |       2 | P4      |
+---------+---------------+------------+--------+---------+--------+------------+------------+---------+---------+
20 rows in set (0.00 sec)
```

3. **Create the given 3 tables:**

1. **Supplier table:**

S_ID	S_NAME	ADDRESS
1	ABC	221 Park Avenue
2	PQR	Marine lines
3	ZMR	Link Road
4	XYZ	BP Road

```
mysql> CREATE TABLE Supplier (
    ->     S_ID INT,
    ->     S_NAME VARCHAR(50),
    ->     ADDRESS VARCHAR(100)
    -> );
Query OK, 0 rows affected (0.16 sec)

mysql> INSERT INTO Supplier (S_ID, S_NAME, ADDRESS) VALUES
    -> (1, 'ABC', '221 Park Avenue'),
    -> (2, 'PQR', 'Marine lines'),
    -> (3, 'ZMR', 'Link Road'),
    -> (4, 'XYZ', 'BP Road');
Query OK, 4 rows affected (0.03 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

2. **Parts table:**

P_ID	P_NAME	COLOUR
11	Screw	Red
12	GPU	Green
13	ScDriver	Blue
14	CPU	Yellow

```
mysql> CREATE TABLE Parts (
    ->     P_ID INT,
    ->     P_NAME VARCHAR(50),
    ->     COLOUR VARCHAR(50)
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> INSERT INTO Parts (P_ID, P_NAME, COLOUR) VALUES
    -> (11, 'Screw', 'Red'),
    -> (12, 'GPU', 'Green'),
    -> (13, 'ScDriver', 'Blue'),
    -> (14, 'CPU', 'Yellow');
Query OK, 4 rows affected (0.03 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

3. **Catalog table:**

S_ID	P_ID	COST
1	11	100
1	12	10000
1	13	200
1	14	1200
2	11	105
2	12	9000
2	13	190
3	11	600
3	12	9500
4	13	180

```
mysql> CREATE TABLE Catalog (
    ->     S_ID INT,
    ->     P_ID INT,
    ->     COST INT
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO Catalog (S_ID, P_ID, COST) VALUES
    -> (1, 11, 100),
    -> (1, 12, 10000),
    -> (1, 13, 200),
    -> (1, 14, 1200),
    -> (2, 11, 105),
    -> (2, 12, 9000),
    -> (2, 13, 190),
    -> (3, 11, 600),
    -> (3, 12, 9500),
    -> (4, 13, 180);
Query OK, 10 rows affected (0.06 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

Write Subqueries to solve the following questions:

1) Find the name of the supplier who supply some red parts ?

```
mysql> SELECT DISTINCT S.S_NAME
    -> FROM Supplier S
    -> JOIN Catalog C ON S.S_ID = C.S_ID
    -> JOIN Parts P ON C.P_ID = P.P_ID
    -> WHERE P.COLOUR = 'Red';
+--------+
| S_NAME |
+--------+
| ABC    |
| PQR    |
| ZMR    |
+--------+
```

2) Find the s_id of supplier who supplies some red or green parts?

```
mysql> SELECT DISTINCT C.S_ID
    -> FROM Catalog C
    -> JOIN Parts P ON C.P_ID = P.P_ID
    -> WHERE P.COLOUR IN ('Red', 'Green');
+------+
| S_ID |
+------+
|    1 |
|    2 |
|    3 |
+------+
3 rows in set (0.00 sec)
```

3) Find the s_id of supplier who some red part at 221 Park Avenue?

```
mysql> SELECT DISTINCT S.S_ID
    -> FROM Supplier S
    -> JOIN Catalog C ON S.S_ID = C.S_ID
    -> JOIN Parts P ON C.P_ID = P.P_ID
    -> WHERE P.COLOUR = 'Red' AND S.ADDRESS = '221 Park Avenue';
+------+
| S_ID |
+------+
|    1 |
+------+
1 row in set (0.00 sec)
```

4) Find the names of product supplied by supplier ‘XYZ’.

```
mysql> SELECT DISTINCT P.P_NAME
    -> FROM Supplier S
    -> JOIN Catalog C ON S.S_ID = C.S_ID
    -> JOIN Parts P ON C.P_ID = P.P_ID
    -> WHERE S.S_NAME = 'XYZ';
+----------+
| P_NAME   |
+----------+
| ScDriver |
+----------+
1 row in set (0.00 sec)
```

5) Find the name of supplier whose total product cost is less than or equal to 10000?

```
mysql> SELECT S.S_NAME
    -> FROM Supplier S
    -> JOIN Catalog C ON S.S_ID = C.S_ID
    -> JOIN Parts P ON C.P_ID = P.P_ID
    -> GROUP BY S.S_ID, S.S_NAME
    -> HAVING SUM(C.COST) <= 10000;
+--------+
| S_NAME |
+--------+
| PQR    |
| XYZ    |
+--------+
2 rows in set (0.00 sec)
```