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TOPIC – HOSPITAL MANAGEMENT SYSTEM

BATCH – T177/SQL/RC/18thJun/10am - 1pm/W

COURSE – DATA SCIENCE AND ANALYTICS WITH AI

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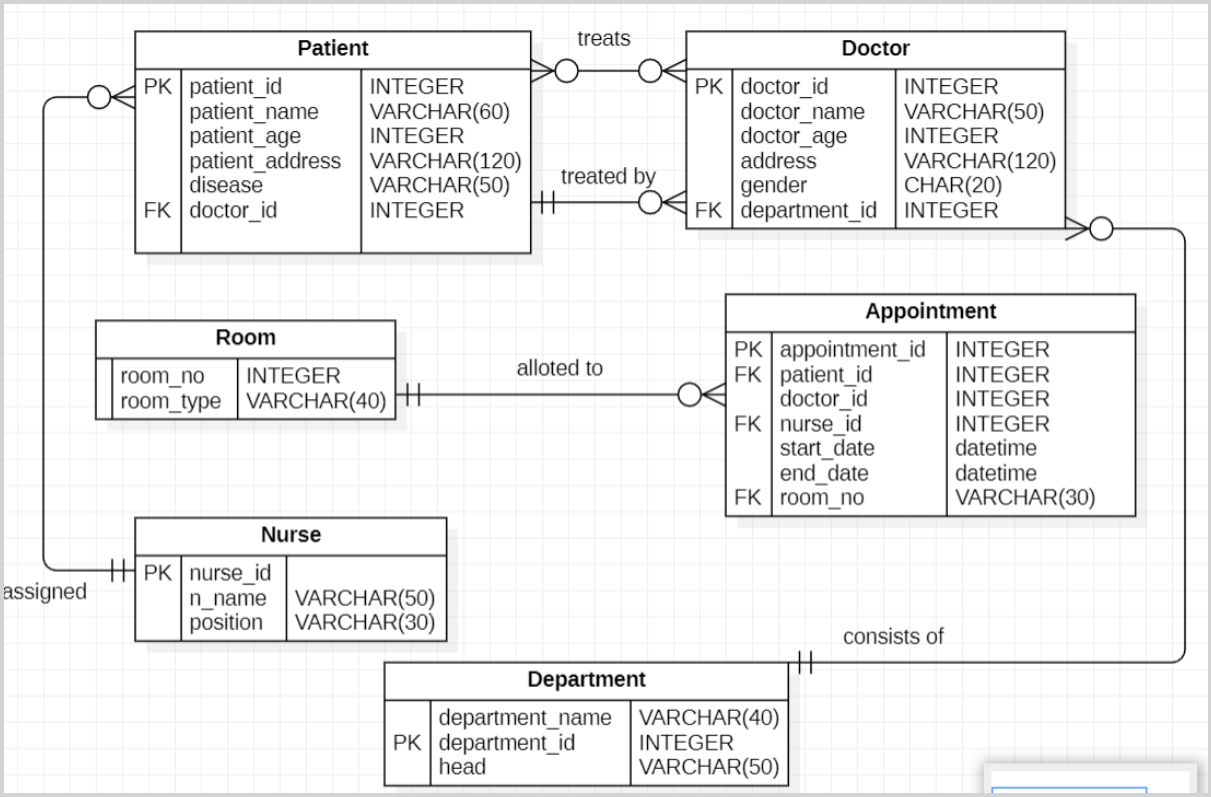
HOSPITAL MANAGEMENT SYSTEM

Hospitals interact with a lot of people in a day and there are various activities involved in day-to-day operations of hospitals, for example booking of appointments, managing doctor schedules, managing patient diagnoses, managing medical histories of patients, etc. The aim of this project is to show how data related to these tasks can be made easier to manage using databases.

Hospital Management System (HMS) is a web application used in hospitals to manage Doctors and Patients. Online Hospital management Systems are used in Hospitals to allow Patients to manage appointments, Doctors can check Patients appointment, view Patients appointment history and Administrator can manage both the Doctors and Patients activities.

ER Diagram:



Data Definition Language (DDL) Query

Database:

- Database name → SQLproject
- Tables →
    1. Patient
    2. Doctor
    3. Room
    4. Appointment
    5. Nurse
    6. Department

- Create & Use Database

```
MariaDB [(none)]> create database SQLproject;
Query OK, 1 row affected (0.028 sec)

MariaDB [(none)]> use SQLproject;
Database changed
MariaDB [SQLproject]>
```

- Create Table
    1. Patient

```
MariaDB [sqlproject]>

                    create table patient(patient_id int primary key,patient_name varchar(60),patient_age int,patient_address varcha
r(120),disease varchar(50),doctor_id int,foreign key(doctor_id) references doctor(doctor_id));
Query OK, 0 rows affected (0.046 sec)

MariaDB [sqlproject]> desc patient;
+-----------------+--------------+------+-----+---------+-------+
| Field           | Type         | Null | Key | Default | Extra |
+-----------------+--------------+------+-----+---------+-------+
| patient_id      | int(11)      | NO   | PRI | NULL    |       |
| patient_name    | varchar(60)  | YES  |     | NULL    |       |
| patient_age     | int(11)      | YES  |     | NULL    |       |
| patient_address | varchar(120) | YES  |     | NULL    |       |
| disease         | varchar(50)  | YES  |     | NULL    |       |
| doctor_id       | int(11)      | YES  | MUL | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
6 rows in set (0.030 sec)
```

    2. Doctor

```
MariaDB [sqlproject]> create table doctor(doctor_id int primary key,doctor_name varchar(50),doctor_age int,address varchar(120),gende
r char(20),department_id int,foreign key(department_id) references department(department_id));
Query OK, 0 rows affected (0.027 sec)

MariaDB [sqlproject]> desc doctor;
+---------------+--------------+------+-----+---------+-------+
| Field         | Type         | Null | Key | Default | Extra |
+---------------+--------------+------+-----+---------+-------+
| doctor_id     | int(11)      | NO   | PRI | NULL    |       |
| doctor_name   | varchar(50)  | YES  |     | NULL    |       |
| doctor_age    | int(11)      | YES  |     | NULL    |       |
| address       | varchar(120) | YES  |     | NULL    |       |
| gender        | char(20)     | YES  |     | NULL    |       |
| department_id | int(11)      | YES  | MUL | NULL    |       |
+---------------+--------------+------+-----+---------+-------+
6 rows in set (0.031 sec)
```

3. Room

```
MariaDB [sqlproject]> create table room(room_no int primary key,room_type varchar(40));
Query OK, 0 rows affected (0.041 sec)

MariaDB [sqlproject]> desc room;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| room_no    | int(11)     | NO   | PRI | NULL    |       |
| room_type  | varchar(40) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
2 rows in set (0.033 sec)
```

4. Appointment

```
MariaDB [sqlproject]> create table appointment(appointment_id int primary key,patient_id int,foreign key(patient_id) references patie
nt(patient_id),doctor_id int,foreign key(doctor_id) references doctor(doctor_id),nurse_id int,foreign key(nurse_id) references nurse(
nurse_id),start_date datetime,end_date datetime,room_no int,foreign key(room_no) references room(room_no));
Query OK, 0 rows affected (0.054 sec)

MariaDB [sqlproject]> desc appointment;
+----------------+----------+------+-----+---------+-------+
| Field          | Type     | Null | Key | Default | Extra |
+----------------+----------+------+-----+---------+-------+
| appointment_id | int(11)  | NO   | PRI | NULL    |       |
| patient_id     | int(11)  | YES  | MUL | NULL    |       |
| doctor_id      | int(11)  | YES  | MUL | NULL    |       |
| nurse_id       | int(11)  | YES  | MUL | NULL    |       |
| start_date     | datetime | YES  |     | NULL    |       |
| end_date       | datetime | YES  |     | NULL    |       |
| room_no        | int(11)  | YES  | MUL | NULL    |       |
+----------------+----------+------+-----+---------+-------+
7 rows in set (0.032 sec)
```

5. Nurse

```
MariaDB [sqlproject]> create table nurse(nurse_id int primary key,n_name varchar(50),position varchar(30));
Query OK, 0 rows affected (0.025 sec)

MariaDB [sqlproject]> desc nurse;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| nurse_id | int(11)     | NO   | PRI | NULL    |       |
| n_name   | varchar(50) | YES  |     | NULL    |       |
| position | varchar(30) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.032 sec)
```

6. Department

```
MariaDB [sqlproject]> create table department(department_name varchar(40),department_id int primary key,head varchar(50));
Query OK, 0 rows affected (0.043 sec)

MariaDB [sqlproject]> desc department;
+-----------------+-------------+------+-----+---------+-------+
| Field           | Type        | Null | Key | Default | Extra |
+-----------------+-------------+------+-----+---------+-------+
| department_name | varchar(40) | YES  |     | NULL    |       |
| department_id   | int(11)     | NO   | PRI | NULL    |       |
| head            | varchar(50) | YES  |     | NULL    |       |
+-----------------+-------------+------+-----+---------+-------+
```

```
MariaDB [sqlproject]> show tables;
+------------------------+
| Tables_in_sqlproject   |
+------------------------+
| appointment            |
| department             |
| doctor                 |
| nurse                  |
| patient                |
| room                   |
+------------------------+
6 rows in set (0.023 sec)
```

- Alter Query
    1. Add column
       Add new column in patient table as appointment_id

```
MariaDB [sqlproject]> alter table patient add appointment_id int;
Query OK, 0 rows affected (0.040 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [sqlproject]> desc patient;
+-----------------+-------------+------+-----+---------+-------+
| Field           | Type        | Null | Key | Default | Extra |
+-----------------+-------------+------+-----+---------+-------+
| patient_id      | int(11)     | NO   | PRI | NULL    |       |
| patient_name    | varchar(60) | YES  |     | NULL    |       |
| patient_age     | int(11)     | YES  |     | NULL    |       |
| patient_address | varchar(120)| YES  |     | NULL    |       |
| disease         | varchar(50) | YES  |     | NULL    |       |
| doctor_id       | int(11)     | YES  | MUL | NULL    |       |
| appointment_id  | int(11)     | YES  |     | NULL    |       |
+-----------------+-------------+------+-----+---------+-------+
7 rows in set (0.027 sec)
```

    2. Delete column
       Delete column appointment_id from patient

```
MariaDB [sqlproject]> alter table patient drop appointment_id;
Query OK, 0 rows affected (0.047 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [sqlproject]> desc patient;
+-----------------+-------------+------+-----+---------+-------+
| Field           | Type        | Null | Key | Default | Extra |
+-----------------+-------------+------+-----+---------+-------+
| patient_id      | int(11)     | NO   | PRI | NULL    |       |
| patient_name    | varchar(60) | YES  |     | NULL    |       |
| patient_age     | int(11)     | YES  |     | NULL    |       |
| patient_address | varchar(120)| YES  |     | NULL    |       |
| disease         | varchar(50) | YES  |     | NULL    |       |
| doctor_id       | int(11)     | YES  | MUL | NULL    |       |
+-----------------+-------------+------+-----+---------+-------+
6 rows in set (0.029 sec)
```

    3. Change datatype of column
       Change data type of gender from char to varchar in doctor

```
MariaDB [sqlproject]> alter table doctor modify gender varchar(10);
Query OK, 0 rows affected (0.092 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [sqlproject]> desc doctor;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| doctor_id     | int(11)     | NO   | PRI | NULL    |       |
| doctor_name   | varchar(50) | YES  |     | NULL    |       |
| doctor_age    | int(11)     | YES  |     | NULL    |       |
| address       | varchar(120)| YES  |     | NULL    |       |
| gender        | varchar(10) | YES  |     | NULL    |       |
| department_id | int(11)     | YES  | MUL | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
6 rows in set (0.031 sec)
```

4. Change column name
   Change column name of patient_address as p_address

```
MariaDB [sqlproject]> alter table patient change patient_address p_address varchar(120);
Query OK, 0 rows affected (0.015 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [sqlproject]> desc patient;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| patient_id   | int(11)      | NO   | PRI | NULL    |       |
| patient_name | varchar(60)  | YES  |     | NULL    |       |
| patient_age  | int(11)      | YES  |     | NULL    |       |
| p_address    | varchar(120) | YES  |     | NULL    |       |
| disease      | varchar(50)  | YES  |     | NULL    |       |
| doctor_id    | int(11)      | YES  | MUL | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
6 rows in set (0.014 sec)
```

5. Change table name

```
MariaDB [sqlproject]> desc doc;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| doc_id | int(11)     | YES  |     | NULL    |       |
| name   | varchar(20) | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
2 rows in set (0.025 sec)

MariaDB [sqlproject]> alter table doc rename to doc_1;
Query OK, 0 rows affected (0.046 sec)

MariaDB [sqlproject]> desc doc_1;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| doc_id | int(11)     | YES  |     | NULL    |       |
| name   | varchar(20) | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
2 rows in set (0.024 sec)
```

6. Truncate

```
MariaDB [sqlproject]> truncate table doc_1;
Query OK, 0 rows affected (0.043 sec)
```

7. Drop

```
MariaDB [sqlproject]> drop table doc_1;
Query OK, 0 rows affected (0.028 sec)
```

- Display table details, constraints name, data type ,etc.

```
MariaDB [sqlproject]> show create table patient;
+---------+-----------------------------------------------------------------------
| Table   | Create Table
                                                                                   |
+---------+-----------------------------------------------------------------------
| patient | CREATE TABLE `patient` (
  `patient_id` int(11) NOT NULL,
  `patient_name` varchar(60) DEFAULT NULL,
  `patient_age` int(11) DEFAULT NULL,
  `p_address` varchar(120) DEFAULT NULL,
  `disease` varchar(50) DEFAULT NULL,
  `doctor_id` int(11) DEFAULT NULL,
  PRIMARY KEY (`patient_id`),
  KEY `doctor_id` (`doctor_id`),
  CONSTRAINT `patient_ibfk_1` FOREIGN KEY (`doctor_id`) REFERENCES `doctor` (`doctor_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci |
+---------+-----------------------------------------------------------------------
1 row in set (0.004 sec)
```

Data Manipulate Language (DML) Query

- Insert query

1. Insert one record at a time

```
MariaDB [sqlproject]> insert into nurse values(301,'Sujata Nele','RN');
Query OK, 1 row affected (0.004 sec)
```

2. Insert with column name and values

```
MariaDB [sqlproject]> insert into nurse(nurse_id,n_name) values(302,'Shyam Joshi');
Query OK, 1 row affected (0.022 sec)
```

3. Insert multiple records

```
MariaDB [sqlproject]> insert into nurse(nurse_id,n_name,position) values (303,'Kedar Pande','APRN'),(304,'Raj Sharma','DNP'),(305,'Ra
shi Bhat','CNA'),(306,'Pooja Shinde','LPN'),(307,'Shweta Anand','RN');
Query OK, 5 rows affected (0.015 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

4. Display records

a. Patient

```
MariaDB [sqlproject]> select * from patient;
+------------+---------------+-------------+-----------+----------------------+-----------+
| patient_id | patient_name  | patient_age | p_address | disease              | doctor_id |
+------------+---------------+-------------+-----------+----------------------+-----------+
|        101 | Nil Kadam     |          23 | Thane     | SnakeBite            |       205 |
|        102 | Nilesh Desai  |          43 | Thane     | Heart Attack         |       207 |
|        103 | Sanvi Nene    |          30 | Airoli    | Vaginal infection    |       208 |
|        104 | Rajas Teli    |          32 | Dadar     | Tooth Cavity         |       209 |
|        105 | Omi Joshi     |          13 | Thane     | Fracture             |       205 |
|        106 | Keshav Pandit |          45 | Vashi     | Brain Tumor          |       206 |
|        107 | Anil Yadav    |          63 | Thane     | High Blood Pressure  |       207 |
+------------+---------------+-------------+-----------+----------------------+-----------+
7 rows in set (0.013 sec)
```

b. Doctor

```
MariaDB [sqlproject]> select * from doctor;
+-----------+--------------+------------+------------+--------+---------------+
| doctor_id | doctor_name  | doctor_age | address    | gender | department_id |
+-----------+--------------+------------+------------+--------+---------------+
|       201 | Kasturi Roy  |         26 | Thane      | Female |           425 |
|       202 | Kranti Rede  |         34 | Airoli     | Female |           423 |
|       203 | Apurva Yadav |         40 | Dadar      | Male   |           428 |
|       204 | Ram Keshav   |         50 | Bandra     | Male   |           425 |
|       205 | Omkar Lele   |         30 | Thane      | Male   |           427 |
|       206 | Rahul Kapoor |         44 | Ghodbandar | Male   |           422 |
|       207 | Rashi Obroi  |         38 | Dadar      | Female |           421 |
|       208 | Megha Shetty |         47 | Worli      | Female |           425 |
|       209 | Avnish Kadam |         55 | Thane      | Male   |           426 |
+-----------+--------------+------------+------------+--------+---------------+
9 rows in set (0.001 sec)
```

c. Nurse

```
MariaDB [sqlproject]> select * from nurse;
+----------+--------------+----------+
| nurse_id | n_name       | position |
+----------+--------------+----------+
|      301 | Sujata Nele  | RN       |
|      302 | Shyam Joshi  | NULL     |
|      303 | Kedar Pande  | APRN     |
|      304 | Raj Sharma   | DNP      |
|      305 | Rashi Bhat   | CNA      |
|      306 | Pooja Shinde | LPN      |
|      307 | Shweta Anand | RN       |
+----------+--------------+----------+
7 rows in set (0.001 sec)
```

d. Room

```
MariaDB [sqlproject]> select * from room;
+---------+------------------------------+
| room_no | room_type                    |
+---------+------------------------------+
|      21 | Medical Surgical patient room |
|      22 | Maternity Care Room          |
|      23 | Examination room             |
|      24 | Physical therapy             |
|      25 | Day Care                     |
|      26 | Twin Sharing room            |
|      27 | Deluxe room                  |
|      28 | General Ward-1               |
|      29 | General Ward-2               |
+---------+------------------------------+
9 rows in set (0.001 sec)
```

e. Department

```
MariaDB [sqlproject]> select * from department;
+------------------+--------------+-------------+
| department_name  | department_id | head        |
+------------------+--------------+-------------+
| Cardiology       |          421 | Aparna Kamat |
| Neurology        |          422 | Raj Patil    |
| General Surgery  |          423 | Ashi Jain    |
| Internal Medicine |          424 | Rohit Yadav  |
| Gynaecology      |          425 | Rucha Sharma |
| Pediatrics       |          426 | Bhavesh Naik |
| Physical Therapy |          427 | Ramesh Rai   |
| Anesthesiology   |          428 | Ragini Pande |
+------------------+--------------+-------------+
8 rows in set (0.001 sec)
```

f. Appointment

```
MariaDB [sqlproject]> select * from appointment;
+----------------+------------+-----------+----------+---------------------+---------------------+---------+
| appointment_id | patient_id | doctor_id | nurse_id | start_date          | end_date            | room_no |
+----------------+------------+-----------+----------+---------------------+---------------------+---------+
|             11 |        105 |       205 |      307 | 0000-00-00 00:00:00 | 0000-00-00 00:00:00 |      28 |
|             12 |        106 |       206 |      302 | 0000-00-00 00:00:00 | 0000-00-00 00:00:00 |      27 |
|             13 |        102 |       207 |      305 | 0000-00-00 00:00:00 | 0000-00-00 00:00:00 |      26 |
|             14 |        104 |       209 |      301 | 0000-00-00 00:00:00 | 0000-00-00 00:00:00 |      23 |
|             15 |        101 |       205 |      307 | 0000-00-00 00:00:00 | 0000-00-00 00:00:00 |      23 |
|             16 |        103 |       208 |      304 | 0000-00-00 00:00:00 | 0000-00-00 00:00:00 |      26 |
+----------------+------------+-----------+----------+---------------------+---------------------+---------+
6 rows in set (0.001 sec)
```

- Update query
  1. Change age of patient to 40 with patient_id 106

```
MariaDB [sqlproject]> update patient set patient_age=40 where patient_id=106;
Query OK, 1 row affected (0.029 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [sqlproject]> select * from patient;
+------------+--------------+-------------+-----------+--------------------+-----------+
| patient_id | patient_name | patient_age | p_address | disease            | doctor_id |
+------------+--------------+-------------+-----------+--------------------+-----------+
|        101 | Nil Kadam    |          23 | Thane     | SnakeBite          |       205 |
|        102 | Nilesh Desai |          43 | Thane     | Heart Attack       |       207 |
|        103 | Sanvi Nene   |          30 | Airoli    | Vaginal infection  |       208 |
|        104 | Rajas Teli   |          32 | Dadar     | Tooth Cavity       |       209 |
|        105 | Omi Joshi    |          13 | Thane     | Fracture           |       205 |
|        106 | Keshav Pandit|          40 | Vashi     | Brain Tumor        |       206 |
|        107 | Anil Yadav   |          63 | Thane     | High Blood Pressure|       207 |
+------------+--------------+-------------+-----------+--------------------+-----------+
7 rows in set (0.001 sec)
```

  2. Change doctor_id of patient to 201 where patient id is 103

```
MariaDB [sqlproject]> update patient set doctor_id=201 where patient_id=103;
Query OK, 1 row affected (0.016 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [sqlproject]> select * from patient;
+------------+--------------+-------------+-----------+--------------------+-----------+
| patient_id | patient_name | patient_age | p_address | disease            | doctor_id |
+------------+--------------+-------------+-----------+--------------------+-----------+
|        101 | Nil Kadam    |          23 | Thane     | SnakeBite          |       205 |
|        102 | Nilesh Desai |          43 | Thane     | Heart Attack       |       207 |
|        103 | Sanvi Nene   |          30 | Airoli    | Vaginal infection  |       201 |
|        104 | Rajas Teli   |          32 | Dadar     | Tooth Cavity       |       209 |
|        105 | Omi Joshi    |          13 | Thane     | Fracture           |       205 |
|        106 | Keshav Pandit|          40 | Vashi     | Brain Tumor        |       206 |
|        107 | Anil Yadav   |          63 | Thane     | High Blood Pressure|       207 |
+------------+--------------+-------------+-----------+--------------------+-----------+
7 rows in set (0.001 sec)
```

- Delete Query
  1. Delete record in department where department id=424

```
MariaDB [sqlproject]> delete from department where department_id=424;
Query OK, 1 row affected (0.016 sec)

MariaDB [sqlproject]> select * from department;
+------------------+---------------+--------------+
| department_name  | department_id | head         |
+------------------+---------------+--------------+
| Cardiology       |           421 | Aparna Kamat |
| Neurology        |           422 | Raj Patil    |
| General Surgery  |           423 | Ashi Jain    |
| Gynaecology      |           425 | Rucha Sharma |
| Pediatrics       |           426 | Bhavesh Naik |
| Physical Therapy |           427 | Ramesh Rai   |
| Anesthesiology   |           428 | Ragini Pande |
+------------------+---------------+--------------+
7 rows in set (0.001 sec)
```

Data Query Language (DQL) Query

Select Query:

1. Display details of entire table

```
MariaDB [sqlproject]> select * from nurse;
+----------+--------------+----------+
| nurse_id | n_name       | position |
+----------+--------------+----------+
|      301 | Sujata Nele  | RN       |
|      302 | Shyam Joshi  | NULL     |
|      303 | Kedar Pande  | APRN     |
|      304 | Raj Sharma   | DNP      |
|      305 | Rashi Bhat   | CNA      |
|      306 | Pooja Shinde | LPN      |
|      307 | Shweta Anand | RN       |
+----------+--------------+----------+
```

2. Select specific column

```
MariaDB [sqlproject]> select doctor_id,doctor_name,department_id from doctor;
+-----------+-------------+---------------+
| doctor_id | doctor_name  | department_id |
+-----------+-------------+---------------+
|       201 | Kasturi Roy  |           425 |
|       202 | Kranti Rede  |           423 |
|       203 | Apurva Yadav |           428 |
|       204 | Ram Keshav   |           425 |
|       205 | Omkar Lele   |           427 |
|       206 | Rahul Kapoor |           422 |
|       207 | Rashi Obroi  |           421 |
|       208 | Megha Shetty |           425 |
|       209 | Avnish Kadam |           426 |
+-----------+-------------+---------------+
9 rows in set (0.020 sec)
```

3. Distinct command

```
MariaDB [sqlproject]> select distinct doctor_id from patient;
+-----------+
| doctor_id |
+-----------+
|       201 |
|       205 |
|       206 |
|       207 |
|       209 |
+-----------+
5 rows in set (0.024 sec)
```

4. AND operator
   Select patient details whose age<30 and attended by doctor_id=205

```
MariaDB [sqlproject]> select * from patient where age<30 AND doctor_id=205;
ERROR 1054 (42S22): Unknown column 'age' in 'where clause'
MariaDB [sqlproject]> select * from patient where patient_age<30 AND doctor_id=205;
+------------+--------------+-------------+-----------+-----------+-----------+
| patient_id | patient_name | patient_age | p_address | disease   | doctor_id |
+------------+--------------+-------------+-----------+-----------+-----------+
|        101 | Nil Kadam    |          23 | Thane     | SnakeBite |       205 |
|        105 | Omi Joshi    |          13 | Thane     | Fracture  |       205 |
+------------+--------------+-------------+-----------+-----------+-----------+
2 rows in set (0.022 sec)
```

5. OR operator
   Select doctor details who lives in thane or is male

```
MariaDB [sqlproject]> select * from doctor where address='Thane' OR gender='Male';
+-----------+--------------+------------+------------+--------+---------------+
| doctor_id | doctor_name  | doctor_age | address    | gender | department_id |
+-----------+--------------+------------+------------+--------+---------------+
|       201 | Kasturi Roy  |         26 | Thane      | Female |           425 |
|       203 | Apurva Yadav |         40 | Dadar      | Male   |           428 |
|       204 | Ram Keshav   |         50 | Bandra     | Male   |           425 |
|       205 | Omkar Lele   |         30 | Thane      | Male   |           427 |
|       206 | Rahul Kapoor |         44 | Ghodbandar | Male   |           422 |
|       209 | Avnish Kadam |         55 | Thane      | Male   |           426 |
+-----------+--------------+------------+------------+--------+---------------+
6 rows in set (0.001 sec)
```

6. NOT operator
   Select room type and number except general ward-1,2

```
MariaDB [sqlproject]> select * from room where room_type!='General Ward-1' AND room_type<>'General Ward-2';
+---------+-------------------------------+
| room_no | room_type                     |
+---------+-------------------------------+
|      21 | Medical Surgical patient room |
|      22 | Maternity Care Room           |
|      23 | Examination room              |
|      24 | Physical therapy              |
|      25 | Day Care                      |
|      26 | Twin Sharing room             |
|      27 | Deluxe room                   |
+---------+-------------------------------+
7 rows in set (0.020 sec)
```

7. Select patient details who lives in thane

```
MariaDB [sqlproject]> select * from patient where p_address='Thane';
+------------+--------------+-------------+-----------+--------------------+-----------+
| patient_id | patient_name | patient_age | p_address | disease            | doctor_id |
+------------+--------------+-------------+-----------+--------------------+-----------+
|        101 | Nil Kadam    |          23 | Thane     | SnakeBite          |       205 |
|        102 | Nilesh Desai |          43 | Thane     | Heart Attack       |       207 |
|        105 | Omi Joshi    |          13 | Thane     | Fracture           |       205 |
|        107 | Anil Yadav   |          63 | Thane     | High Blood Pressure |       207 |
+------------+--------------+-------------+-----------+--------------------+-----------+
4 rows in set (0.001 sec)
```

8. Select details of male doctors

```
MariaDB [sqlproject]> select * from doctor where gender='Male';
+-----------+--------------+------------+------------+--------+---------------+
| doctor_id | doctor_name  | doctor_age | address    | gender | department_id |
+-----------+--------------+------------+------------+--------+---------------+
|       203 | Apurva Yadav |         40 | Dadar      | Male   |           428 |
|       204 | Ram Keshav   |         50 | Bandra     | Male   |           425 |
|       205 | Omkar Lele   |         30 | Thane      | Male   |           427 |
|       206 | Rahul Kapoor |         44 | Ghodbandar | Male   |           422 |
|       209 | Avnish Kadam |         55 | Thane      | Male   |           426 |
+-----------+--------------+------------+------------+--------+---------------+
5 rows in set (0.001 sec)
```

9. Select patient details whose age<40

```
MariaDB [sqlproject]> select * from patient where patient_age<40;
+------------+--------------+-------------+-----------+-------------------+-----------+
| patient_id | patient_name | patient_age | p_address | disease           | doctor_id |
+------------+--------------+-------------+-----------+-------------------+-----------+
|        101 | Nil Kadam    |          23 | Thane     | SnakeBite         |       205 |
|        103 | Sanvi Nene   |          30 | Airoli    | Vaginal infection |       201 |
|        104 | Rajas Teli   |          32 | Dadar     | Tooth Cavity      |       209 |
|        105 | Omi Joshi    |          13 | Thane     | Fracture          |       205 |
+------------+--------------+-------------+-----------+-------------------+-----------+
4 rows in set (0.001 sec)
```

- Between operator
  Display doctor between age 30 to 50

```
MariaDB [sqlproject]> select * from doctor where doctor_age between 30 and 50;
+-----------+--------------+------------+------------+--------+---------------+
| doctor_id | doctor_name  | doctor_age | address    | gender | department_id |
+-----------+--------------+------------+------------+--------+---------------+
|       202 | Kranti Rede  |         34 | Airoli     | Female |           423 |
|       203 | Apurva Yadav |         40 | Dadar      | Male   |           428 |
|       204 | Ram Keshav   |         50 | Bandra     | Male   |           425 |
|       205 | Omkar Lele   |         30 | Thane      | Male   |           427 |
|       206 | Rahul Kapoor |         44 | Ghodbandar | Male   |           422 |
|       207 | Rashi Obroi  |         38 | Dadar      | Female |           421 |
|       208 | Megha Shetty |         47 | Worli      | Female |           425 |
+-----------+--------------+------------+------------+--------+---------------+
7 rows in set (0.020 sec)
```

- In operator
  Display nurse name from position either RN, CAN, LPN

```
MariaDB [sqlproject]> select * from nurse where position in('RN','CAN','LPN');
+----------+--------------+----------+
| nurse_id | n_name       | position |
+----------+--------------+----------+
|      301 | Sujata Nele  | RN       |
|      306 | Pooja Shinde | LPN      |
|      307 | Shweta Anand | RN       |
+----------+--------------+----------+
3 rows in set (0.001 sec)
```

- Like operator
  1. Display doctor details whose name is starting with ‘R’

```
MariaDB [sqlproject]> select * from doctor where doctor_name like 'R%';
+-----------+--------------+------------+------------+--------+---------------+
| doctor_id | doctor_name  | doctor_age | address    | gender | department_id |
+-----------+--------------+------------+------------+--------+---------------+
|       204 | Ram Keshav   |         50 | Bandra     | Male   |           425 |
|       206 | Rahul Kapoor |         44 | Ghodbandar | Male   |           422 |
|       207 | Rashi Obroi  |         38 | Dadar      | Female |           421 |
+-----------+--------------+------------+------------+--------+---------------+
3 rows in set (0.016 sec)
```

  2. Display patient details whose name ends with ‘i’,

```
MariaDB [sqlproject]> select * from patient where patient_name like '%i';
+------------+--------------+-------------+-----------+--------------+-----------+
| patient_id | patient_name | patient_age | p_address | disease      | doctor_id |
+------------+--------------+-------------+-----------+--------------+-----------+
|        102 | Nilesh Desai |          43 | Thane     | Heart Attack |       207 |
|        104 | Rajas Teli   |          32 | Dadar     | Tooth Cavity |       209 |
|        105 | Omi Joshi    |          13 | Thane     | Fracture     |       205 |
+------------+--------------+-------------+-----------+--------------+-----------+
3 rows in set (0.001 sec)
```

  3. Display department details with department head name as ‘_a%’

```
MariaDB [sqlproject]> select * from department where head like '_a%';
+-----------------+---------------+--------------+
| department_name | department_id | head         |
+-----------------+---------------+--------------+
| Neurology       |           422 | Raj Patil    |
| Physical Therapy |           427 | Ramesh Rai   |
| Anesthesiology  |           428 | Ragini Pande |
+-----------------+---------------+--------------+
3 rows in set (0.022 sec)
```

- Limit operator
  1. Display only 4 department details starting from 2

```
MariaDB [sqlproject]> select * from department limit 2,4;
+------------------+---------------+--------------+
| department_name  | department_id | head         |
+------------------+---------------+--------------+
| General Surgery  |           423 | Ashi Jain    |
| Gynaecology      |           425 | Rucha Sharma |
| Pediatrics       |           426 | Bhavesh Naik |
| Physical Therapy |           427 | Ramesh Rai   |
+------------------+---------------+--------------+
4 rows in set (0.001 sec)
```

  2. Display only 3 nurse details

```
MariaDB [sqlproject]> select * from nurse limit 3;
+----------+-------------+----------+
| nurse_id | n_name      | position |
+----------+-------------+----------+
|      301 | Sujata Nele | RN       |
|      302 | Shyam Joshi | NULL     |
|      303 | Kedar Pande | APRN     |
+----------+-------------+----------+
3 rows in set (0.001 sec)
```

- Order by
  1. Display patient details with doctor id in ascending order

```
MariaDB [sqlproject]> select * from patient order by doctor_id;
+------------+--------------+-------------+-----------+--------------------+-----------+
| patient_id | patient_name | patient_age | p_address | disease            | doctor_id |
+------------+--------------+-------------+-----------+--------------------+-----------+
|        103 | Sanvi Nene   |          30 | Airoli    | Vaginal infection  |       201 |
|        101 | Nil Kadam    |          23 | Thane     | SnakeBite          |       205 |
|        105 | Omi Joshi    |          13 | Thane     | Fracture           |       205 |
|        106 | Keshav Pandit |         40 | Vashi     | Brain Tumor        |       206 |
|        102 | Nilesh Desai |          43 | Thane     | Heart Attack       |       207 |
|        107 | Anil Yadav   |          63 | Thane     | High Blood Pressure |       207 |
|        104 | Rajas Teli   |          32 | Dadar     | Tooth Cavity       |       209 |
+------------+--------------+-------------+-----------+--------------------+-----------+
7 rows in set (0.020 sec)
```

  2. Display doctor details with department id in descending order

```
MariaDB [sqlproject]> select * from doctor order by department_id;
+-----------+--------------+------------+------------+--------+---------------+
| doctor_id | doctor_name  | doctor_age | address    | gender | department_id |
+-----------+--------------+------------+------------+--------+---------------+
|       207 | Rashi Obroi  |         38 | Dadar      | Female |           421 |
|       206 | Rahul Kapoor |         44 | Ghodbandar | Male   |           422 |
|       202 | Kranti Rede  |         34 | Airoli     | Female |           423 |
|       201 | Kasturi Roy  |         26 | Thane      | Female |           425 |
|       204 | Ram Keshav   |         50 | Bandra     | Male   |           425 |
|       208 | Megha Shetty |         47 | Worli      | Female |           425 |
|       209 | Avnish Kadam |         55 | Thane      | Male   |           426 |
|       205 | Omkar Lele   |         30 | Thane      | Male   |           427 |
|       203 | Apurva Yadav |         40 | Dadar      | Male   |           428 |
+-----------+--------------+------------+------------+--------+---------------+
9 rows in set (0.001 sec)
```

  3. Display nurse details with name in alphabetical order

```
MariaDB [sqlproject]> select * from nurse order by n_name;
+----------+-------------+----------+
| nurse_id | n_name      | position |
+----------+-------------+----------+
|      303 | Kedar Pande | APRN     |
|      306 | Pooja Shinde | LPN     |
|      304 | Raj Sharma  | DNP      |
|      305 | Rashi Bhat  | CNA      |
|      307 | Shweta Anand | RN      |
|      302 | Shyam Joshi | NULL     |
|      301 | Sujata Nele | RN       |
+----------+-------------+----------+
7 rows in set (0.001 sec)
```

- String functions
  1. Concat

```
MariaDB [sqlproject]> select concat(n_name,'  ',position) as 'Nurse name and position' from nurse;
+--------------------------+
| Nurse name and position |
+--------------------------+
| Sujata Nele  RN          |
| NULL                     |
| Kedar Pande  APRN        |
| Raj Sharma  DNP          |
| Rashi Bhat  CNA          |
| Pooja Shinde  LPN        |
| Shweta Anand  RN         |
+--------------------------+
7 rows in set (0.020 sec)
```

  2. Replace

```
MariaDB [sqlproject]> select replace(n_name,'Shweta','Ruchi') as 'Name replaced' from nurse where nurse_id=307;
+---------------+
| Name replaced |
+---------------+
| Ruchi Anand   |
+---------------+
1 row in set (0.001 sec)
```

  3. Reverse

```
MariaDB [sqlproject]> select reverse (department_name)
from department;
+----------------------------+
| reverse (department_name) |
+----------------------------+
| ygoloidraC                 |
| ygolorueN                  |
| yregruS lareneG            |
| ygoloceanyG                |
| scirtaideP                 |
| yparehT lacisyhP           |
| ygoloisehtsenA             |
+----------------------------+
7 rows in set (0.001 sec)
```

  4. Length

```
MariaDB [sqlproject]> select concat(head,'      ',length(head)) as 'Head name and total letters' from department;
+----------------------------+
| Head name and total letters |
+----------------------------+
| Aparna Kamat      12       |
| Raj Patil      9           |
| Ashi Jain      9           |
| Rucha Sharma      12       |
| Bhavesh Naik      12       |
| Ramesh Rai      10         |
| Ragini Pande      12       |
+----------------------------+
7 rows in set (0.001 sec)
```

- Aggregate functions
  1. Count

     Display total number of appointments taken

```
MariaDB [sqlproject]> select count(*) as 'Total appointments taken' from appointment;
+--------------------------+
| Total appointments taken |
+--------------------------+
|                        6 |
+--------------------------+
1 row in set (0.028 sec)
```

     Display total number of nurses with position RN

```
MariaDB [sqlproject]> select position,count(*) as 'Total nurses' from nurse where position='RN';
+----------+--------------+
| position | Total nurses |
+----------+--------------+
| RN       |            2 |
+----------+--------------+
1 row in set (0.001 sec)
```

2. Minimum
   Display minimum age of patient

```
MariaDB [sqlproject]> select min(patient_age) as 'Minimum age' from patient;
+-------------+
| Minimum age |
+-------------+
|          13 |
+-------------+
1 row in set (0.011 sec)
```

3. Maximum
   Display maximum age of doctor

```
MariaDB [sqlproject]> select max(doctor_age) as 'Maximum age' from doctor;
+-------------+
| Maximum age |
+-------------+
|          55 |
+-------------+
1 row in set (0.001 sec)
```

4. Average
   Display average age of patient

```
MariaDB [sqlproject]> select avg(patient_age) as 'Average age' from patient;
+-------------+
| Average age |
+-------------+
|     34.8571 |
+-------------+
1 row in set (0.001 sec)
```

- Date function
  1. Cur date

```
MariaDB [sqlproject]> select curdate();
+------------+
| curdate()  |
+------------+
| 2023-08-04 |
+------------+
1 row in set (0.020 sec)
```

  2. Date format

```
MariaDB [sqlproject]> select date_format(now(),'%m/%d/%y') as Date;
+----------+
| Date     |
+----------+
| 08/04/23 |
+----------+
1 row in set (0.001 sec)
```

  3. Date difference

```
MariaDB [sqlproject]> select datediff(now(),'2022-08-13');
+-----------------------------+
| datediff(now(),'2022-08-13') |
+-----------------------------+
|                         356 |
+-----------------------------+
1 row in set (0.018 sec)
```

- Group by & having clause
  1. Display total number of doctors from each department

```
MariaDB [sqlproject]> select department_id,count(*) from doctor group by department_id;
+---------------+----------+
| department_id | count(*) |
+---------------+----------+
|           421 |        1 |
|           422 |        1 |
|           423 |        1 |
|           425 |        3 |
|           426 |        1 |
|           427 |        1 |
|           428 |        1 |
+---------------+----------+
7 rows in set (0.001 sec)
```

  2. Display total number of nurses from each position

```
MariaDB [sqlproject]> select position,count(*) from nurse group by position;
+----------+----------+
| position | count(*) |
+----------+----------+
| NULL     |        1 |
| APRN     |        1 |
| CNA      |        1 |
| DNP      |        1 |
| LPN      |        1 |
| RN       |        2 |
+----------+----------+
6 rows in set (0.018 sec)
```

  3. Display total number of patients assigned to each doctor with age<40

```
MariaDB [sqlproject]> select doctor_id,count(*) from patient where patient_age<40 group by doctor_id;
+-----------+----------+
| doctor_id | count(*) |
+-----------+----------+
|       201 |        1 |
|       205 |        2 |
|       209 |        1 |
+-----------+----------+
3 rows in set (0.001 sec)
```

- Subquery
  1. Single row

     Display doctor details whose department id is same as Kasturi Roy

```
MariaDB [sqlproject]> select * from doctor where department_id=(select department_id from doctor where doctor_name='Kasturi Roy');
+-----------+-------------+------------+---------+--------+---------------+
| doctor_id | doctor_name | doctor_age | address | gender | department_id |
+-----------+-------------+------------+---------+--------+---------------+
|       201 | Kasturi Roy |         26 | Thane   | Female |           425 |
|       204 | Ram Keshav  |         50 | Bandra  | Male   |           425 |
|       208 | Megha Shetty|         47 | Worli   | Female |           425 |
+-----------+-------------+------------+---------+--------+---------------+
3 rows in set (0.021 sec)
```

  2. Multiple row

     Display doctor details with min and max age

```
MariaDB [sqlproject]> select * from doctor where doctor_age in (select max(doctor_age) from doctor union select min(doctor_age) from
doctor);
+-----------+-------------+------------+---------+--------+---------------+
| doctor_id | doctor_name | doctor_age | address | gender | department_id |
+-----------+-------------+------------+---------+--------+---------------+
|       201 | Kasturi Roy |         26 | Thane   | Female |           425 |
|       209 | Avnish Kadam|         55 | Thane   | Male   |           426 |
+-----------+-------------+------------+---------+--------+---------------+
2 rows in set (0.023 sec)
```

3. Multiple column
   Display patient details whose p_address and doctor_id is same as Anil Yadav

```
MariaDB [sqlproject]> select * from patient where (p_address,doctor_id)=any(select p_address,doctor_id from patient where Patient_nam
e="Anil Yadav");
+------------+--------------+-------------+-----------+--------------------+-----------+
| patient_id | patient_name | patient_age | p_address | disease            | doctor_id |
+------------+--------------+-------------+-----------+--------------------+-----------+
|        102 | Nilesh Desai |          43 | Thane     | Heart Attack       |       207 |
|        107 | Anil Yadav   |          63 | Thane     | High Blood Pressure |       207 |
+------------+--------------+-------------+-----------+--------------------+-----------+
2 rows in set (0.023 sec)
```

- View
  1. Create View

```
MariaDB [sqlproject]> create view vdoc as select doctor_id,doctor_name,department_id from doctor;
Query OK, 0 rows affected (0.029 sec)

MariaDB [sqlproject]> select * from vdoc;
+-----------+--------------+---------------+
| doctor_id | doctor_name  | department_id |
+-----------+--------------+---------------+
|       201 | Kasturi Roy  |           425 |
|       202 | Kranti Rede  |           423 |
|       203 | Apurva Yadav |           428 |
|       204 | Ram Keshav   |           425 |
|       205 | Omkar Lele   |           427 |
|       206 | Rahul Kapoor |           422 |
|       207 | Rashi Obroi  |           421 |
|       208 | Megha Shetty |           425 |
|       209 | Avnish Kadam |           426 |
+-----------+--------------+---------------+
9 rows in set (0.006 sec)
```

  2. Insert records in view

```
MariaDB [sqlproject]> insert into vdoc values(210,'Omkar Jatt',421);
Query OK, 1 row affected (0.024 sec)

MariaDB [sqlproject]> select * from vdoc;
+-----------+--------------+---------------+
| doctor_id | doctor_name  | department_id |
+-----------+--------------+---------------+
|       201 | Kasturi Roy  |           425 |
|       202 | Kranti Rede  |           423 |
|       203 | Apurva Yadav |           428 |
|       204 | Ram Keshav   |           425 |
|       205 | Omkar Lele   |           427 |
|       206 | Rahul Kapoor |           422 |
|       207 | Rashi Obroi  |           421 |
|       208 | Megha Shetty |           425 |
|       209 | Avnish Kadam |           426 |
|       210 | Omkar Jatt   |           421 |
+-----------+--------------+---------------+
10 rows in set (0.001 sec)
```

  3. Update values in view

```
MariaDB [sqlproject]> update vdoc set doctor_name='Kasturi Desai' where doctor_id=201;
Query OK, 1 row affected (0.023 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [sqlproject]> select * from vdoc;
+-----------+---------------+---------------+
| doctor_id | doctor_name   | department_id |
+-----------+---------------+---------------+
|       201 | Kasturi Desai |           425 |
|       202 | Kranti Rede   |           423 |
|       203 | Apurva Yadav  |           428 |
|       204 | Ram Keshav    |           425 |
|       205 | Omkar Lele    |           427 |
|       206 | Rahul Kapoor  |           422 |
|       207 | Rashi Obroi   |           421 |
|       208 | Megha Shetty  |           425 |
|       209 | Avnish Kadam  |           426 |
|       210 | Omkar Jatt    |           421 |
+-----------+---------------+---------------+
10 rows in set (0.001 sec)
```

4. Change structure

```
MariaDB [sqlproject]> select * from vdoc;
+-----------+---------------+---------------+------------+
| doctor_id | doctor_name   | department_id | doctor_age |
+-----------+---------------+---------------+------------+
|       201 | Kasturi Desai |           425 |         26 |
|       202 | Kranti Rede   |           423 |         34 |
|       203 | Apurva Yadav  |           428 |         40 |
|       204 | Ram Keshav    |           425 |         50 |
|       205 | Omkar Lele    |           427 |         30 |
|       206 | Rahul Kapoor  |           422 |         44 |
|       207 | Rashi Obroi   |           421 |         38 |
|       208 | Megha Shetty  |           425 |         47 |
|       209 | Avnish Kadam  |           426 |         55 |
|       210 | Omkar Jatt    |           421 |       NULL |
+-----------+---------------+---------------+------------+
10 rows in set (0.004 sec)
```

- Joins
  1. Inner join

     Display doctor_id ,name, age,department name,id from doctor and department only for male doctors

```
MariaDB [sqlproject]> select d.doctor_id,doctor_name,doctor_age,department_name,r.department_id from doctor d inner join department r
 on d.department_id=r.department_id where gender='Male' order by d.doctor_id;
+-----------+-------------+------------+-----------------+---------------+
| doctor_id | doctor_name | doctor_age | department_name | department_id |
+-----------+-------------+------------+-----------------+---------------+
|       203 | Apurva Yadav |         40 | Anesthesiology  |           428 |
|       204 | Ram Keshav   |         50 | Gynaecology     |           425 |
|       205 | Omkar Lele   |         30 | Physical Therapy |           427 |
|       206 | Rahul Kapoor |         44 | Neurology       |           422 |
|       209 | Avnish Kadam |         55 | Pediatrics      |           426 |
+-----------+-------------+------------+-----------------+---------------+
5 rows in set (0.001 sec)
```

  2. Left outer join

     Display doctor_id ,name, age,department name,id from doctor and department only for female doctors

```
MariaDB [sqlproject]> select d.doctor_id,doctor_name,doctor_age,department_name,r.department_id from doctor d left outer join depart
ent r on d.department_id=r.department_id where gender='female' order by d.doctor_id;
+-----------+---------------+------------+-----------------+---------------+
| doctor_id | doctor_name   | doctor_age | department_name | department_id |
+-----------+---------------+------------+-----------------+---------------+
|       201 | Kasturi Desai |         26 | Gynaecology     |           425 |
|       202 | Kranti Rede   |         34 | General Surgery |           423 |
|       207 | Rashi Obroi   |         38 | Cardiology      |           421 |
|       208 | Megha Shetty  |         47 | Gynaecology     |           425 |
+-----------+---------------+------------+-----------------+---------------+
4 rows in set (0.001 sec)
```

  3. Right outer join

     Display doctor_id ,name, age,department name,id from doctor and department only for doctor age<40

```
MariaDB [sqlproject]> select d.doctor_id,doctor_name,doctor_age,department_name,r.department_id from doctor d right outer join depar
ment r on d.department_id=r.department_id where doctor_age<40 order by d.doctor_id;
+-----------+---------------+------------+-----------------+---------------+
| doctor_id | doctor_name   | doctor_age | department_name | department_id |
+-----------+---------------+------------+-----------------+---------------+
|       201 | Kasturi Desai |         26 | Gynaecology     |           425 |
|       202 | Kranti Rede   |         34 | General Surgery |           423 |
|       205 | Omkar Lele    |         30 | Physical Therapy |           427 |
|       207 | Rashi Obroi   |         38 | Cardiology      |           421 |
+-----------+---------------+------------+-----------------+---------------+
4 rows in set (0.001 sec)
```

4. Full join

```
+-----------+---------------+------------+------------------+---------------+
| doctor_id | doctor_name   | doctor_age | department_name  | department_id |
+-----------+---------------+------------+------------------+---------------+
|       207 | Rashi Obroi   |         38 | Cardiology       |           421 |
|       210 | Omkar Jatt    |       NULL | Cardiology       |           421 |
|       206 | Rahul Kapoor  |         44 | Neurology        |           422 |
|       202 | Kranti Rede   |         34 | General Surgery  |           423 |
|       201 | Kasturi Desai |         26 | Gynaecology      |           425 |
|       204 | Ram Keshav    |         50 | Gynaecology      |           425 |
|       208 | Megha Shetty  |         47 | Gynaecology      |           425 |
|       209 | Avnish Kadam  |         55 | Pediatrics       |           426 |
|       205 | Omkar Lele    |         30 | Physical Therapy |           427 |
|       203 | Apurva Yadav  |         40 | Anesthesiology   |           428 |
+-----------+---------------+------------+------------------+---------------+
10 rows in set (0.002 sec)
```

5. Cross join

```
MariaDB [sqlproject]> select d.doctor_id,doctor_name,department_name from doctor d cross join department where doctor_age<40 order by
 d.doctor_id;
+-----------+---------------+------------------+
| doctor_id | doctor_name   | department_name  |
+-----------+---------------+------------------+
|       201 | Kasturi Desai | Gynaecology      |
|       201 | Kasturi Desai | Neurology        |
|       201 | Kasturi Desai | Anesthesiology   |
|       201 | Kasturi Desai | Pediatrics       |
|       201 | Kasturi Desai | General Surgery  |
|       201 | Kasturi Desai | Cardiology       |
|       201 | Kasturi Desai | Physical Therapy |
|       202 | Kranti Rede   | Physical Therapy |
|       202 | Kranti Rede   | Gynaecology      |
|       202 | Kranti Rede   | Neurology        |
|       202 | Kranti Rede   | Anesthesiology   |
|       202 | Kranti Rede   | Pediatrics       |
|       202 | Kranti Rede   | General Surgery  |
|       202 | Kranti Rede   | Cardiology       |
|       205 | Omkar Lele    | Physical Therapy |
|       205 | Omkar Lele    | Gynaecology      |
|       205 | Omkar Lele    | Neurology        |
|       205 | Omkar Lele    | Anesthesiology   |
|       205 | Omkar Lele    | Pediatrics       |
|       205 | Omkar Lele    | General Surgery  |
|       205 | Omkar Lele    | Cardiology       |
|       207 | Rashi Obroi   | Physical Therapy |
|       207 | Rashi Obroi   | Gynaecology      |
|       207 | Rashi Obroi   | Neurology        |
|       207 | Rashi Obroi   | Anesthesiology   |
|       207 | Rashi Obroi   | Pediatrics       |
```