HOSPITAL MANAGEMENT SYSTEM

Contents:

ABSTRACT:

A hospital is a health care institution providing patient treatment with specialized health science and auxiliary healthcare staff and medical equipment. Hospitals are usually distinguished from other types of medical facilities by their ability to admit and care for inpatients whilst the others, which are smaller, are often described as clinics.

Hospitals are largely staffed by professional physicians, surgeons, nurses, and allied health practitioners, whereas in the past, this work was usually performed by the members of founding religious orders or by volunteers.

Hospital Management system includes registration of patients, storing their details into the system, and also booking their appointments with doctors. Hospital Management System is an organized computerized system designed and programmed to deal with day-to-day operations and management of hospital activities.

Hospital Management System is a system enabling hospitals to manage information and data related to all aspects of healthcare – processes, providers, patients, and more, which in turn ensures that processes are completed swiftly and effectively.

OBJECTIVE:

- To promote awareness among functionaries involved in Health and Hospital Management.
- To promote research in the field of Health and Hospital Management.
- To improve the efficiency of Health Care delivery Systems.
- To promote the development of high quality hospital services and community health care.

STRUCTURE OF TABLES:

HOSPITALS:

This table contains the details of the hospitals which includes serial number, name, city, contact, department, etc.

```
MariaDB [base]> desc hospital;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| sl_no      | int(11)     | YES  |     | NULL    |       |
| ward_no    | int(11)     | NO   | PRI | NULL    |       |
| Hcity      | varchar(20) | YES  |     | NULL    |       |
| Hcontact   | int(11)     | YES  |     | NULL    |       |
| department | varchar(20) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
5 rows in set (0.042 sec)
```

PHARMACY:

This table contains the details of all the pharmacy such as their id, name, dosage details, patient_id, etc.

```
MariaDB [base]> desc pharmacy;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| m_id       | int(11)     | YES  |     | NULL    |       |
| m_name     | varchar(20) | YES  |     | NULL    |       |
| dosage     | varchar(20) | YES  |     | NULL    |       |
| patient_id | int(11)     | YES  |     | NULL    |       |
| ward_no    | int(11)     | YES  | MUL | NULL    |       |
+------------+-------------+------+-----+---------+-------+
5 rows in set (0.042 sec)
```

STAFFS:

This table contains the details of all the staffs such as their name, age, salary, designation, etc.

```
MariaDB [base]> desc staffs;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| fname       | varchar(30) | YES  |     | NULL    |       |
| lname       | varchar(30) | YES  |     | NULL    |       |
| age         | int(11)     | YES  |     | NULL    |       |
| salary      | int(11)     | YES  |     | NULL    |       |
| designation | varchar(20) | YES  |     | NULL    |       |
| ward_no     | int(11)     | YES  | MUL | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
6 rows in set (0.021 sec)
```

PATIENTS:

This table contains the details of all the patients such as their id, name, gender, age, etc.

```
MariaDB [base]> desc patients;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| patient_id | int(11)     | YES  |     | NULL    |       |
| fname      | varchar(20) | YES  |     | NULL    |       |
| lname      | varchar(20) | YES  |     | NULL    |       |
| gender     | varchar(20) | YES  |     | NULL    |       |
| age        | int(11)     | YES  |     | NULL    |       |
| ward_no    | int(11)     | YES  | MUL | NULL    |       |
+------------+-------------+------+-----+---------+-------+
6 rows in set (0.034 sec)
```

DETAILS OF TABLES:

HOSPITALS:

```
MariaDB [base]> select* from hospital;
+-------+---------+-----------+------------+-------------+
| sl_no | ward_no | Hcity     | Hcontact   | department  |
+-------+---------+-----------+------------+-------------+
|     1 |      20 | panvel    | 2147483647 | surgery     |
|     5 |      22 | dadar     | 2147483647 | cardiology  |
|     2 |      25 | thane     | 2147483647 | gynaecology |
|     3 |      30 | mumbra    | 2147483647 | obstetrics  |
|     8 |      33 | ambernath | 2147483647 | neurology   |
|     4 |      35 | kalva     | 2147483647 | paediatrics |
|     6 |      40 | ghatkopar | 2147483647 | skin        |
|     9 |      44 | badlapur  | 2147483647 | psychiatry  |
|     7 |      55 | kalyan    | 2147483647 | ENT         |
|    10 |      95 | dombivli  | 2147483647 | medicine    |
+-------+---------+-----------+------------+-------------+
10 rows in set (0.004 sec)
```

PHARMACY:

```
MariaDB [base]> select* from pharmacy;
+------+----------------+----------+------------+---------+
| m_id | m_name         | dosage   | patient_id | ward_no |
+------+----------------+----------+------------+---------+
|    1 | Hydrocodone    | high     |        201 |      30 |
|    2 | Metformin      | low      |        250 |      20 |
|    3 | Losartan       | moderate |        151 |      95 |
|    4 | Antibiotics    | low      |        300 |      25 |
|    5 | Albuterol      | high     |        120 |      55 |
|    6 | Antihistamines | high     |        220 |      22 |
|    7 | Gabapentin     | moderate |        300 |      33 |
|    8 | Omeprazole     | low      |        330 |      40 |
|    9 | Levothyroxine  | high     |        320 |      44 |
|   10 | Atorvastatin   | low      |        400 |      35 |
+------+----------------+----------+------------+---------+
10 rows in set (0.003 sec)
```

STAFFS:

```
MariaDB [base]> select* from staffs;
+-----------+-----------+------+--------+-------------+---------+
| fname     | lname     | age  | salary | designation | ward_no |
+-----------+-----------+------+--------+-------------+---------+
| gokul     | gopi      |   28 |  50000 | doctor      |      30 |
| rahul     | reddy     |   26 |  45000 | pharmasist  |      20 |
| reshmi    | panicker  |   25 |  65000 | nurse       |      95 |
| vishal    | vijayan   |   33 |  75000 | doctor      |      25 |
| reshma    | ravindran |   22 |  64000 | physician   |      55 |
| pooja     | patkar    |   22 |  40000 | nurse       |      22 |
| anjali    | sharma    |   23 |  45000 | doctor      |      33 |
| vyshnav   | sajeevan  |   41 |  64000 | physician   |      40 |
| manish    | shelke    |   32 |  75000 | doctor      |      44 |
| siddharth | singh     |   29 |  80000 | pharmasist  |      35 |
+-----------+-----------+------+--------+-------------+---------+
10 rows in set (0.001 sec)
```

PATIENTS:

```
MariaDB [base]> select* from patients;
+------------+----------+-----------+--------+------+---------+
| patient_id | fname    | lname     | gender | age  | ward_no |
+------------+----------+-----------+--------+------+---------+
|        300 | gokul    | gopi      | male   |   28 |      33 |
|        250 | reshma   | panicker  | female |   22 |      20 |
|        201 | reshmi   | ravindran | female |   18 |      30 |
|        151 | rahul    | nair      | male   |   26 |      95 |
|        300 | akhila   | raul      | female |   29 |      25 |
|        120 | rindo    | bestin    | male   |   28 |      55 |
|        220 | vyshnav  | sajeevan  | male   |   27 |      22 |
|        330 | pooja    | patkar    | female |   25 |      40 |
|        320 | anjali   | sharma    | female |   24 |      44 |
|        400 | aradhana | pillai    | female |   25 |      35 |
+------------+----------+-----------+--------+------+---------+
10 rows in set (0.001 sec)
```

SUBQUERIES:

1. Show all the details of all the Staff's working in the hospital having salary > 50000

```
MariaDB [base]> select * from staffs where salary>"50000";
+-----------+-----------+------+--------+-------------+---------+
| fname     | lname     | age  | salary | designation | ward_no |
+-----------+-----------+------+--------+-------------+---------+
| reshmi    | panicker  |   25 |  65000 | nurse       |      95 |
| vishal    | vijayan   |   33 |  75000 | doctor      |      25 |
| reshma    | ravindran |   22 |  64000 | physician   |      55 |
| vyshnav   | sajeevan  |   41 |  64000 | physician   |      40 |
| manish    | shelke    |   32 |  75000 | doctor      |      44 |
| siddharth | singh     |   29 |  80000 | pharmasist  |      35 |
+-----------+-----------+------+--------+-------------+---------+
6 rows in set (0.012 sec)
```

2. Show all the details of the patient having patient_id as 250

```
MariaDB [base]> select* from patients where patient_id=250;
+------------+--------+----------+--------+------+---------+
| patient_id | fname  | lname    | gender | age  | ward_no |
+------------+--------+----------+--------+------+---------+
|        250 | reshma | panicker | female |   22 |      20 |
+------------+--------+----------+--------+------+---------+
1 row in set (0.006 sec)
```

3. Show all the details of the doctors and nurses working in the hospital .

```
MariaDB [base]> select * from staffs where designation="doctor" or designation="nurse";
+--------+----------+------+--------+-------------+---------+
| fname  | lname    | age  | salary | designation | ward_no |
+--------+----------+------+--------+-------------+---------+
| gokul  | gopi     |   28 |  50000 | doctor      |      30 |
| reshmi | panicker |   25 |  65000 | nurse       |      95 |
| vishal | vijayan  |   33 |  75000 | doctor      |      25 |
| pooja  | patkar   |   22 |  40000 | nurse       |      22 |
| anjali | sharma   |   23 |  45000 | doctor      |      33 |
| manish | shelke   |   32 |  75000 | doctor      |      44 |
+--------+----------+------+--------+-------------+---------+
6 rows in set (0.005 sec)
```

JOINS:

1. Display all the details of staffs and patients in one table.

```
MariaDB [base]> select* from patients inner join staffs on patients.ward_no= staffs.ward_no;
+------------+---------+----------+--------+------+---------+----------+----------+------+--------+-------------+---------+
| patient_id | fname   | lname    | gender | age  | ward_no | fname    | lname    | age  | salary | designation | ward_no |
+------------+---------+----------+--------+------+---------+----------+----------+------+--------+-------------+---------+
|        201 | reshmi  | ravindran | female |   18 |      30 | gokul    | gopi     |   28 |  50000 | doctor      |      30 |
|        250 | reshma  | panicker | female |   22 |      20 | rahul    | reddy    |   26 |  45000 | pharmasist  |      20 |
|        151 | rahul   | nair     | male   |   26 |      95 | reshmi   | panicker |   25 |  65000 | nurse       |      95 |
|        300 | akhila  | raul     | female |   29 |      25 | vishal   | vijayan  |   33 |  75000 | doctor      |      25 |
|        120 | rindo   | bestin   | male   |   28 |      55 | reshma   | ravindran |   22 |  64000 | physician   |      55 |
|        220 | vyshnav | sajeevan | male   |   27 |      22 | pooja    | patkar   |   22 |  40000 | nurse       |      22 |
|        300 | gokul   | gopi     | male   |   28 |      33 | anjali   | sharma   |   23 |  45000 | doctor      |      33 |
|        330 | pooja   | patkar   | female |   25 |      40 | vyshnav  | sajeevan |   41 |  64000 | physician   |      40 |
|        320 | anjali  | sharma   | female |   24 |      44 | manish   | shelke   |   32 |  75000 | doctor      |      44 |
|        400 | aradhana | pillai   | female |   25 |      35 | siddharth | singh    |   29 |  80000 | pharmasist  |      35 |
+------------+---------+----------+--------+------+---------+----------+----------+------+--------+-------------+---------+
10 rows in set (0.010 sec)
```

2. Display all the details of patients and common details of staffs.

```
MariaDB [base]> select* from patients left join staffs on patients.ward_no= staffs.ward_no;
+------------+---------+-----------+--------+------+---------+-----------+-----------+------+--------+-------------+---------+
| patient_id | fname   | lname     | gender | age  | ward_no | fname     | lname     | age  | salary | designation | ward_no |
+------------+---------+-----------+--------+------+---------+-----------+-----------+------+--------+-------------+---------+
|        300 | gokul   | gopi      | male   |   28 |      33 | anjali    | sharma    |   23 |  45000 | doctor      |      33 |
|        250 | reshma  | panicker  | female |   22 |      20 | rahul     | reddy     |   26 |  45000 | pharmasist  |      20 |
|        201 | reshmi  | ravindran | female |   18 |      30 | gokul     | gopi      |   28 |  50000 | doctor      |      30 |
|        151 | rahul   | nair      | male   |   26 |      95 | reshmi    | panicker  |   25 |  65000 | nurse       |      95 |
|        300 | akhila  | raul      | female |   29 |      25 | vishal    | vijayan   |   33 |  75000 | doctor      |      25 |
|        120 | rindo   | bestin    | male   |   28 |      55 | reshma    | ravindran |   22 |  64000 | physician   |      55 |
|        220 | vyshnav | sajeevan  | male   |   27 |      22 | pooja     | patkar    |   22 |  40000 | nurse       |      22 |
|        330 | pooja   | patkar    | female |   25 |      40 | vyshnav   | sajeevan  |   41 |  64000 | physician   |      40 |
|        320 | anjali  | sharma    | female |   24 |      44 | manish    | shelke    |   32 |  75000 | doctor      |      44 |
|        400 | aradhana | pillai   | female |   25 |      35 | siddharth | singh     |   29 |  80000 | pharmasist  |      35 |
+------------+---------+-----------+--------+------+---------+-----------+-----------+------+--------+-------------+---------+
10 rows in set (0.011 sec)
```

3. Display all the details of staffs and common details of patients.

```
MariaDB [base]> select* from patients right join staffs on patients.ward_no= staffs.ward_no;
+------------+---------+-----------+--------+------+---------+-----------+-----------+------+--------+-------------+---------+
| patient_id | fname   | lname     | gender | age  | ward_no | fname     | lname     | age  | salary | designation | ward_no |
+------------+---------+-----------+--------+------+---------+-----------+-----------+------+--------+-------------+---------+
|        201 | reshmi  | ravindran | female |   18 |      30 | gokul     | gopi      |   28 |  50000 | doctor      |      30 |
|        250 | reshma  | panicker  | female |   22 |      20 | rahul     | reddy     |   26 |  45000 | pharmasist  |      20 |
|        151 | rahul   | nair      | male   |   26 |      95 | reshmi    | panicker  |   25 |  65000 | nurse       |      95 |
|        300 | akhila  | raul      | female |   29 |      25 | vishal    | vijayan   |   33 |  75000 | doctor      |      25 |
|        120 | rindo   | bestin    | male   |   28 |      55 | reshma    | ravindran |   22 |  64000 | physician   |      55 |
|        220 | vyshnav | sajeevan  | male   |   27 |      22 | pooja     | patkar    |   22 |  40000 | nurse       |      22 |
|        300 | gokul   | gopi      | male   |   28 |      33 | anjali    | sharma    |   23 |  45000 | doctor      |      33 |
|        330 | pooja   | patkar    | female |   25 |      40 | vyshnav   | sajeevan  |   41 |  64000 | physician   |      40 |
|        320 | anjali  | sharma    | female |   24 |      44 | manish    | shelke    |   32 |  75000 | doctor      |      44 |
|        400 | aradhana | pillai   | female |   25 |      35 | siddharth | singh     |   29 |  80000 | pharmasist  |      35 |
+------------+---------+-----------+--------+------+---------+-----------+-----------+------+--------+-------------+---------+
10 rows in set (0.017 sec)
```

VIEWS :

1. Create a table to select fname of the person having designation as a nurse.

Create view status as select fname,Designation from staffs where designation="nurse";

```
MariaDB [base]> select * from status;
+--------+-------------+
| fname  | Designation |
+--------+-------------+
| reshmi | nurse       |
| pooja  | nurse       |
+--------+-------------+
2 rows in set (0.034 sec)
```

2. Create a table to select non vaccinated patients of age <=25.

Create view nonvaccinated as select patient_id,fname,ward_no from patients where age<="25";

```
MariaDB [base]> select * from nonvaccinated;
+------------+----------+---------+
| patient_id | fname    | ward_no |
+------------+----------+---------+
|        250 | reshma   |      20 |
|        201 | reshmi   |      30 |
|        330 | pooja    |      40 |
|        320 | anjali   |      44 |
|        400 | aradhana |      35 |
+------------+----------+---------+
5 rows in set (0.006 sec)
```

3. Create a table to select high dosage medicines from pharmacy.

create view highdosage as select m_id,m_name,ward_no from pharmacy where dosage="high";

```
MariaDB [base]> select * from highdosage;
+------+----------------+---------+
| m_id | m_name         | ward_no |
+------+----------------+---------+
|    1 | Hydrocodone    |      30 |
|    5 | Albuterol      |      55 |
|    6 | Antihistamines |      22 |
|    9 | Levothyroxine  |      44 |
+------+----------------+---------+
4 rows in set (0.001 sec)
```

CONCLUSION:

A hospital management system was created using Mysql with detailed data's in the tables and commands like subqueries, joins & views were explained with characteristic examples.