



**Project On**  
**Hospital Management System**  
**Database Management System**  
**(CSF205)**  
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## CANDIDATES DECLARATION

We, hereby certify that the work, which is being presented in the Report, entitled **Hospital Management**, in partial fulfilment of the requirement as part of the **Database Management System** of the Degree of **Bachelor of Technology** and submitted to the **DIT University** is an authentic record of my work carried out during the period **06-04-2022** to **16-04-2022** under the guidance of **Mr. Anuj Kumar Yadav**.

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## ABSTRACT

The purpose of this project is to outline **Hospital data** and requirements, to recommend data management solutions and to provide an information regarding the **hospital management**.

The purpose of this project is to develop a data management system to consolidate, organize, document, store and distribute information related to hospital management system. A centralized database created to consolidate data, allowing integrated, long-term analyses.

The scope of the project is managing a consistency and storage of data by dedicated data administrator. It provides most of the features that a Database Management System should have. It is developed by using **MySQL database**. It has been implemented in **WINDOWS** platform.

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# Chapter 1

## Introduction To DBMS

A **database management system (DBMS)** refers to the technology for creating and managing databases. Basically, DBMS is a software tool to organize (create, retrieve, update and manage) data in a database. The main aim of a DBMS is to supply a way to store up and retrieve database information that is both convenient and efficient. By data, we mean known facts that can be recorded and that have embedded meaning. Normally people use software such as **DBASE IV or V, Microsoft ACCESS, or EXCEL** to store data in the form of database.

### 1.1 Features

- Database systems are meant to handle large collection of information.
- Management of data involves both defining structures for storage of information and providing mechanisms that can do the manipulation of those stored information.
- The database system must ensure the safety of the information stored, despite system crashes or attempts at unauthorized access.

### 1.2. Applications Of DBMS

The development of **computer graphics** has been driven both by the **needs of the user community and by the advances in hardware and software**. The applications of database are many and varied; it can be divided into four major areas:

- Hierarchical and network system
- Flexibility with relational database
- Object oriented application.
- Interchanging the data on the web for e-commerce.

## **Chapter 2**

### **Requirements**

#### **2.1. Functional Requirements**

This project is primarily requiring the use of mysql database management system which is being implemented in this project thoroughly.

Moreover, this project consists of single module i.e., Admin responsible for managing the data entries such as inserting, updating the data entries into the database.

#### **2.2. Non-Functional Requirements**

- **Hardware specification**

Processor: i5 Core Processor

Clock speed: 2.5GHz

Monitor: 1024 \* 768 Resolution Color

Keyboard: QWERTY

RAM: 1 GB

Input Output Console for interaction

- **Software specification**

MySQL server

Operating system: Windows 10

## Chapter 3

### Design Of Project

#### 3.1. Schema Diagram

##### DOCTOR

<u>Did</u>	DName	Dept	Dsep	DCharge
------------	-------	------	------	---------

##### PATIENT

Pid	Pname	Page	PGender	Phone_no	Address	PDisease	Did
-----	-------	------	---------	----------	---------	----------	-----

##### TREATMENT

<u>Tid</u>	TName	TDuration	TCharge
------------	-------	-----------	---------

##### SECTION

<u>Sid</u>	ward	Build	Room	Tid
------------	------	-------	------	-----

##### RECEIPT

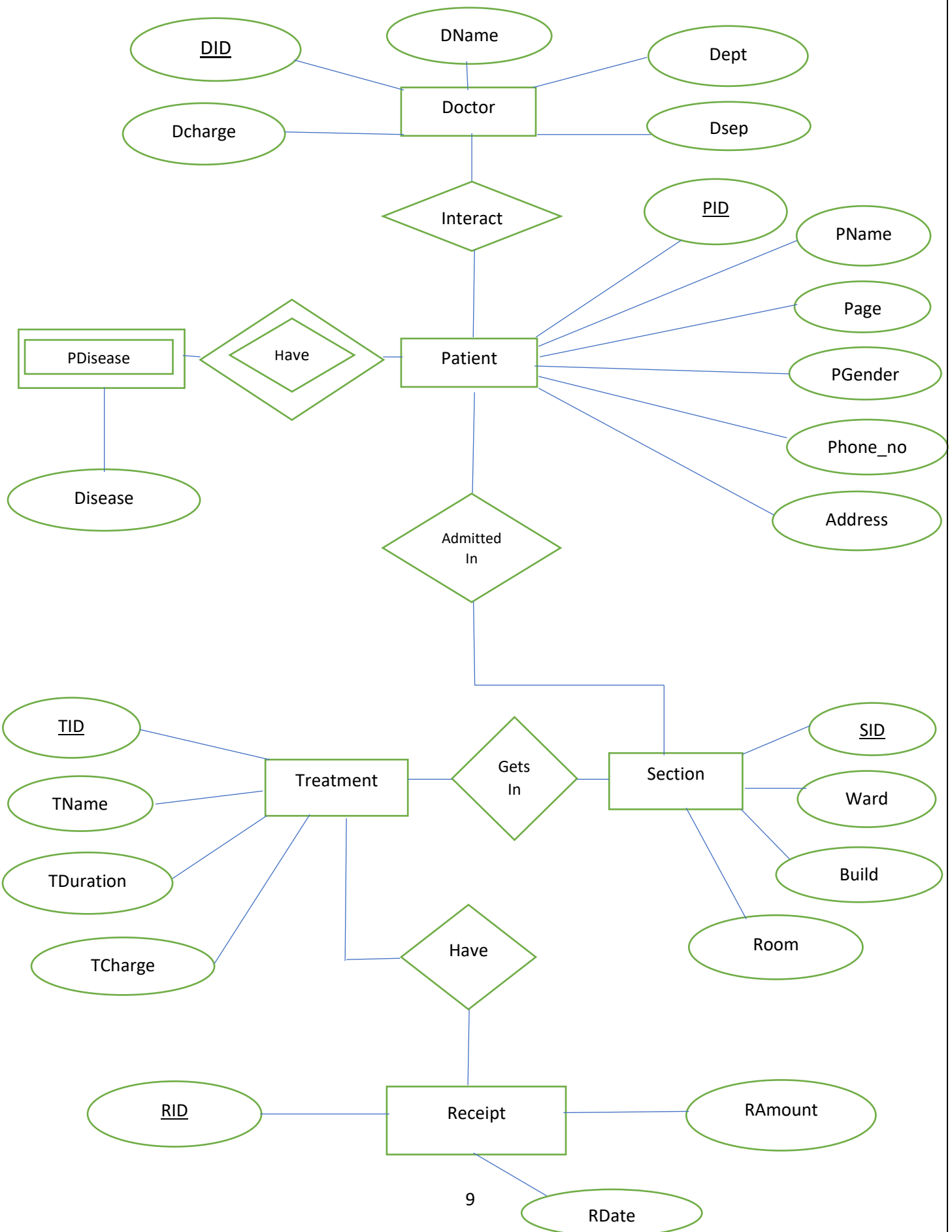
<u>Rid</u>	RAmount	RDate	Pid
------------	---------	-------	-----

##### PDISEASE

Disease	Tid	Pid
---------	-----	-----



### 3.2. E-R Diagram



## Chapter 4

### Implementation

#### 4.1. Database

```
mysql> use Hospital;  
Database changed
```

#### 4.2. Table Creation

##### 4.2.1. Creation of Doctor Table

```
mysql> create table Doctor  
-> (Did int(6) primary key,  
-> Dname varchar(20) NOT NULL,  
-> Dept varchar(20) NOT NULL,  
-> Dsepc varchar(20) NOT NULL ,  
-> Dcharge decimal(10,2) NOT NULL check(Dcharge>0));  
Query OK, 0 rows affected, 1 warning (0.07 sec)
```

##### 4.2.2. Creation of Patient Table

```
mysql> create table Patient  
-> (Pid int(10) primary key,  
-> Pname varchar(20) NOT NULL ,  
-> Page int(6) NOT NULL check(Page>0),  
-> Pgender varchar(20) NOT NULL,  
-> Phone_no int(10) NOT NULL UNIQUE,  
-> Address varchar(30) NOT NULL ,  
-> Did int(10),  
-> Foreign key(Did) references Doctor(Did));  
Query OK, 0 rows affected, 4 warnings (0.07 sec)
```

##### 4.2.3. Creation of Treatment Table

```
mysql> create table Treatment  
-> (Tid int(10) primary key,  
-> Tname varchar(20) NOT NULL,  
-> Tduration varchar(20) NOT NULL,  
-> Tcharge decimal(10,2) NOT NULL);  
Query OK, 0 rows affected, 1 warning (0.04 sec)
```

#### 4.2.4. Creation of Patient Disease Table

```
mysql> create table P_disease
-> (Pid int(10),
-> Foreign key(Pid) references Patient(Pid),
-> Tid int(10),
-> Foreign key(Tid) references Treatment(Tid),
-> Disease varchar(20) NOT NULL);
Query OK, 0 rows affected, 2 warnings (0.06 sec)
```

#### 4.2.5. Creation of Receipt Table

```
mysql> create table Reciept
-> (Rid int(10) primary key,
-> Ramount decimal(10,2) NOT NULL,
-> Rdate DATE NOT NULL,
-> Pid int(10),
-> Foreign key(Pid) references Patient(Pid));
Query OK, 0 rows affected, 2 warnings (0.05 sec)
```

#### 4.2.6. Creation of Section Table

```
mysql> create table Section
-> (Sid int(10) primary key,
-> Ward varchar(20) NOT NULL,
-> Room int(5) NOT NULL,
-> Building varchar(20) NOT NULL ,
-> Tid int(10),
-> Foreign key(Tid) references Treatment(Tid));
Query OK, 0 rows affected, 3 warnings (0.05 sec)
```

## 4.3 Fields Description

### 4.3.1. Doctor Fields

```
mysql> desc Doctor;
```

Field	Type	Null	Key	Default	Extra
Did	int	NO	PRI	NULL	
Dname	varchar(20)	NO		NULL	
Dept	varchar(20)	NO		NULL	
Dsepc	varchar(20)	NO		NULL	
Dcharge	decimal(10,2)	NO		NULL	

```
5 rows in set (0.03 sec)
```

### 4.3.2 Patient Fields

```
mysql> desc Patient;
```

Field	Type	Null	Key	Default	Extra
Pid	int	NO	PRI	NULL	
Pname	varchar(20)	NO		NULL	
Page	int	NO		NULL	
Pgender	varchar(20)	NO		NULL	
Phone_no	int	NO	UNI	NULL	
Address	varchar(30)	NO		NULL	
Did	int	YES	MUL	NULL	

```
7 rows in set (0.00 sec)
```

### 4.3.3. Treatment Fields

```
mysql> desc Treatment;
```

Field	Type	Null	Key	Default	Extra
Tid	int	NO	PRI	NULL	
Tname	varchar(20)	NO		NULL	
Tduration	varchar(20)	NO		NULL	
Tcharge	decimal(10,2)	NO		NULL	

```
4 rows in set (0.00 sec)
```

#### 4.3.4. Patient Disease Fields

```
mysql> desc P_disease;
```

Field	Type	Null	Key	Default	Extra
Pid	int	YES	MUL	NULL	
Tid	int	YES	MUL	NULL	
Disease	varchar(20)	NO		NULL	

3 rows in set (0.00 sec)

#### 4.3.5. Receipt Field

```
mysql> desc Reciept;
```

Field	Type	Null	Key	Default	Extra
Rid	int	NO	PRI	NULL	
Ramount	decimal(10,2)	NO		NULL	
Rdate	date	NO		NULL	
Pid	int	YES	MUL	NULL	

4 rows in set (0.00 sec)

#### 4.3.6. Section Field

```
mysql> desc Section;
```

Field	Type	Null	Key	Default	Extra
Sid	int	NO	PRI	NULL	
Ward	varchar(20)	NO		NULL	
Room	int	NO		NULL	
Building	varchar(20)	NO		NULL	
Tid	int	YES	MUL	NULL	

5 rows in set (0.00 sec)

## 4.4. Insertion

### 4.4.1. Entries in Doctor table

```
mysql> insert into Doctor values(101,"Malik kumar","OPD","Family Physician",12000.00);
Query OK, 1 row affected (0.03 sec)

mysql> insert into Doctor values(102,"Deepesh Thakur","Medical","Anesthesiology",10000.00);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Doctor values(103,"Manik kumar","Radiology","Diagnostic Radiology",5000.00);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Doctor values(104,"Allum Rajput","Operation Theatre","Ophthalmology",25000.00);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Doctor values(105,"Vishwas Thakur","Operation Theatre","Surgery",15000.00);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Doctor values(106,"Ankur Rana","Operation Theatre","Surgery",20000.00);
Query OK, 1 row affected (0.01 sec)
```

### 4.4.2. Entries in Patient table

```
mysql> insert into Patient values(1,"Subham sharma",19,"Male",989317650,"DDN",101);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Patient values(2,"Ram sharma",21,"Male",979347350,"CG",103);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Patient values(3,"Mahima Singh",20,"female",949442350,"Delhi",102);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Patient values(4,"Karina Rajput",21,"female",919452350,"Delhi",106);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Patient values(5,"Alok Mishra",19,"Male",977452350,"Goa",105);
Query OK, 1 row affected (0.01 sec)
```

### 4.4.3. Entries in Treatment table

```
mysql> insert into Treatment values(21,"Chemotherapy","6 months",20000.00);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Treatment values(22,"Surgery","1 months",22000.00);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Treatment values(23,"Radiation Therapy","20 days",1000.00);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Treatment values(24,"Biological Therapy","2 months",15000.00);
Query OK, 1 row affected (0.01 sec)
```



#### 4.4.4. Entries in Patient Disease table

```
mysql> insert into Reciept values(1011,27000,"2000-01-22",1);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Reciept values(1024,25000,"2022-03-11",2);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Reciept values(1023,30000,"2022-03-15",3);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Reciept values(1025,42000,"2022-03-27",4);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Reciept values(1015,37000,"2022-04-01",5);
Query OK, 1 row affected (0.01 sec)
```

#### 4.4.5 Entries in the Receipt table

```
mysql> insert into Section values(51,"A",1,"Tower Wing",21);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Section values(52,"A",3,"Tower Wing",22);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Section values(53,"B",6,"Angles",21);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Section values(54,"A",9,"M&D Tower",23);
Query OK, 1 row affected (0.01 sec)

mysql> insert into Section values(55,"C",1,"M&D Tower",24);
Query OK, 1 row affected (0.00 sec)

mysql> insert into Section values(56,"B",2,"Angles",22);
Query OK, 1 row affected (0.01 sec)
```

#### 4.4.6 Entries in the Section table

```
mysql> insert into P_disease values(1,21,"Blood Cancer");
Query OK, 1 row affected (0.01 sec)

mysql> insert into P_disease values(2,24,"Flu");
Query OK, 1 row affected (0.01 sec)

mysql> insert into P_disease values(3,21,"Lungs Cancer");
Query OK, 1 row affected (0.01 sec)

mysql> insert into P_disease values(4,22,"Spinal Disorder");
Query OK, 1 row affected (0.01 sec)

mysql> insert into P_disease values(5,22,"Kidney Tumar");
Query OK, 1 row affected (0.01 sec)
```

## 4.5. Queries Executed

1. Show all doctors details having charge > 10,000.

```
mysql> select * from Doctor where Dcharge>10000;
```

Did	Dname	Dept	Dsepc	Dcharge
101	Malik kumar	OPD	Family Physician	12000.00
104	Allum Rajput	Operation Theatre	Ophthalmology	25000.00
105	Vishwas Thakur	Operation Theatre	Surgery	15000.00
106	Ankur Rana	Operation Theatre	Surgery	20000.00

4 rows in set (0.01 sec)

2. List all the patients located in Delhi State.

```
mysql> select * from Patient where Address = "delhi";
```

Pid	Pname	Page	Pgender	Phone_no	Address	Did
3	Mahima Singh	20	female	949442350	Delhi	102
4	Karina Rajput	21	female	919452350	Delhi	106

2 rows in set (0.01 sec)

3. Find details of patient which are treated by corresponding doctors and show doctor details.

```
mysql> select Patient.Pid, Patient.Pname, Patient.Page, Doctor.Did, Doctor.Dname, Doctor.Dsepc  
-> from Patient  
-> JOIN  
-> Doctor  
-> ON Patient.Did = Doctor.Did;
```

Pid	Pname	Page	Did	Dname	Dsepc
1	Subham sharma	19	101	Malik kumar	Family Physician
2	Ram sharma	21	103	Manik kumar	Diagnostic Radiology
3	Mahima Singh	20	102	Deepesh Thakur	Anesthesiology
4	Karina Rajput	21	106	Ankur Rana	Surgery
5	Alok Mishra	19	105	Vishwas Thakur	Surgery

5 rows in set (0.00 sec)



4. Show diseases of all patients through which they are suffering.

```
mysql> select Patient.Pname,P_disease.Disease
-> from Patient
-> JOIN
-> P_disease
-> ON Patient.Pid = P_disease.Pid;
```

Pname	Disease
Subham sharma	Blood Cancer
Ram sharma	Flu
Mahima Singh	Lungs Cancer
Karina Rajput	Spinal Disorder
Alok Mishra	Kidney Tumar

5 rows in set (0.00 sec)

5. List all treatments whose charge is greater than 19000.

```
mysql> select Tname from Treatment where Tcharge > 19000;
```

Tname
Chemotherapy
Surgery

2 rows in set (0.00 sec)

6. List all treatments done in Building is "Tower Wing".

```
mysql> select Treatment.Tname,Section.Building
-> from Section
-> JOIN
-> Treatment
-> ON Section.Tid = Treatment.Tid AND Section.Building = "Tower Wing";
```

Tname	Building
Chemotherapy	Tower Wing
Surgery	Tower Wing

2 rows in set (0.00 sec)

7. Count total number of doctors associated in hospital.

```
mysql> select COUNT(*)
-> from Doctor
-> ;
```

COUNT(*)
6

1 row in set (0.02 sec)

**8. Show patient details whose Reciept id is 1024.**

```
mysql> select Patient.*,Reciept.Rid
-> from Reciept
-> JOIN
-> Patient
-> ON Reciept.Pid = Patient.Pid AND Reciept.Rid = 1024;
```

Pid	Pname	Page	Pgender	Phone_no	Address	Did	Rid
2	Ram sharma	21	Male	979347350	CG	103	1024

1 row in set (0.00 sec)

**9. Show patient details having disease as cancers.**

```
mysql> select Patient.*,P_disease.Disease
-> from P_disease
-> JOIN
-> Patient
-> ON P_disease.Pid = Patient.Pid AND P_disease.Disease LIKE '____Cancer';
```

Pid	Pname	Page	Pgender	Phone_no	Address	Did	Disease
1	Subham sharma	19	Male	989317650	DDN	101	Blood Cancer
3	Mahima Singh	20	female	949442350	Delhi	102	Lungs Cancer

2 rows in set (0.00 sec)

**10. Show all doctors whose name does have T at 8<sup>th</sup> position.**

```
mysql> select * from Doctor Where Dname Like '____T%';
```

Did	Dname	Dept	Dsepc	Dcharge
102	Deepesh Thakur	Medical	Anesthesiology	10000.00
105	Vishwas Thakur	Operation Theatre	Surgery	15000.00

2 rows in set (0.00 sec)

**11. Show reciepts of patient having disease as flu.**

```
mysql> select Reciept.Rid,Reciept.Ramount,Reciept.Rdate,P_disease.Disease
-> from P_disease
-> JOIN
-> Reciept
-> ON P_disease.Pid = Reciept.Pid AND P_disease.Disease = "Flu";
```

Rid	Ramount	Rdate	Disease
1024	25000.00	2022-03-11	Flu

1 row in set (0.00 sec)

**12. Count total number of doctors associated in hospital.**

```
mysql> select COUNT(*)
      -> from Doctor
      -> ;
+-----+
| COUNT(*) |
+-----+
|         6 |
+-----+
1 row in set (0.02 sec)
```

**13. Count total number of doctors having surname as 'Thakur'.**

```
mysql> select Count(*)
      -> From Doctor
      -> where Dname Like '%Thakur';
+-----+
| Count(*) |
+-----+
|         2 |
+-----+
1 row in set (0.00 sec)
```

**14. Calculate total receipt amount made by the hospital.**

```
mysql> select SUM(Ramount)
      -> From Reciept;
+-----+
| SUM(Ramount) |
+-----+
| 161000.00 |
+-----+
1 row in set (0.00 sec)
```

**15. Show all types of treatment provided by the hospital.**

```
mysql> select Tname from Treatment;
+-----+
| Tname |
+-----+
| Chemotherapy |
| Surgery |
| Radiation Therapy |
| Biological Therapy |
+-----+
4 rows in set (0.00 sec)
```

## Chapter 5

### Snapshots Of Tables

#### 5.1. Doctor table

```
mysql> select * from Doctor;
```

Did	Dname	Dept	Dsepc	Dcharge
101	Malik kumar	OPD	Family Physician	12000.00
102	Deepesh Thakur	Medical	Anesthesiology	10000.00
103	Manik kumar	Radiology	Diagnostic Radiology	5000.00
104	Allum Rajput	Operation Theatre	Ophthalmology	25000.00
105	Vishwas Thakur	Operation Theatre	Surgery	15000.00
106	Ankur Rana	Operation Theatre	Surgery	20000.00

6 rows in set (0.00 sec)

#### 5.2. Patient table

```
mysql> select * from Patient;
```

Pid	Pname	Page	Pgender	Phone_no	Address	Did
1	Subham sharma	19	Male	989317650	DDN	101
2	Ram sharma	21	Male	979347350	CG	103
3	Mahima Singh	20	female	949442350	Delhi	102
4	Karina Rajput	21	female	919452350	Delhi	106
5	Alok Mishra	19	Male	977452350	Goa	105

5 rows in set (0.00 sec)

#### 5.3. Treatment table

```
mysql> select * from Treatment;
```

Tid	Tname	Tduration	Tcharge
21	Chemotherapy	6 months	20000.00
22	Surgery	1 months	22000.00
23	Radiation Therapy	20 days	1000.00
24	Biological Therapy	2 months	15000.00

4 rows in set (0.00 sec)

#### 5.4. Patient Disease table

```
mysql> select * from P_disease;
```

Pid	Tid	Disease
1	21	Blood Cancer
2	24	Flu
3	21	Lungs Cancer
4	22	Spinal Disorder
5	22	Kidney Tumar

```
5 rows in set (0.00 sec)
```

#### 5.5. Receipt table

```
mysql> select * from Reciept;
```

Rid	Ramount	Rdate	Pid
1011	27000.00	2000-01-22	1
1015	37000.00	2022-04-01	5
1023	30000.00	2022-03-15	3
1024	25000.00	2022-03-11	2
1025	42000.00	2022-03-27	4

```
5 rows in set (0.00 sec)
```

#### 5.6. Section table

```
mysql> select * from Section;
```

Sid	Ward	Room	Building	Tid
51	A	1	Tower Wing	21
52	A	3	Tower Wing	22
53	B	6	Angles	21
54	A	9	M&D Tower	23
55	C	1	M&D Tower	24
56	B	2	Angles	22

```
6 rows in set (0.00 sec)
```

## Conclusion

The project **Hospital Management System** is very much handy to store the various information about fields regarding **doctors, patients, the disease** from which a patient is suffering, **the treatment** corresponding to the disease and **the section of hospital** where a particular patient is kept or given the treatment. It was the whole great journey regarding to the same and the project is successful with all the queries and commands working properly without having any error that's why all the snapshots given above are all correct.

## References

- [1] [https://www.w3schools.com/mysql/mysql\\_join.asp/](https://www.w3schools.com/mysql/mysql_join.asp/) [Visited On: 10-04-2022]
- [2] <https://beginnersbook.com/2015/04/foreign-key-in-dbms/> [Visited On: 10-04-2022]
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