Roll No:
Student Name:
Program and Output:

Problem statement :

Design at least 10 SQL queries for suitable database application using SQL DML statements: Insert, Select, Update, Delete with operators, functions, and set operator.

```
create database sports;

use sports;

create table indoor(i_no int(3),i_name varchar(30),i_branch
varchar(20),year int(5),i_game varchar(20),points int(5));

insert into indoor(i_no,i_name,i_branch,year,i_game,points) values
(1,'sanjana','computer',3,'carrom',50);

insert into indoor(i_no,i_name,i_branch,year,i_game,points) values
('2',"kartiki","Mechanical",'2',"carrom",'60');

insert into indoor(i_no,i_name,i_branch,year,i_game,points) values
('3',"shrawan","MBA",'1',"carrom",'40');

insert into indoor(i_no,i_name,i_branch,year,i_game,points) values
('4',"pooja","civil",'1',"chess",'40');

insert into indoor(i_no,i_name,i_branch,year,i_game,points) values
('5',"RAM","IT",'1',"ludo",'20');


select * from indoor;

create table outdoor(o_no int(3),o_name varchar(30),o_branch
varchar(20),
year int(5),o_game varchar(20),points int(5));


insert into outdoor(o_no,o_name,o_branch,year,o_game,points)
values('1',"ram","computer",'1',"cricket",'25');

insert into outdoor(o_no,o_name,o_branch,year,o_game,points)
values('2',"Niku","IT",'3',"cricket",'30');



insert into outdoor(o_no,o_name,o_branch,year,o_game,points)
values('3',"Namrata","E&tc",'2',"badminton",'50');
```

```
insert into outdoor(o_no,o_name,o_branch,year,o_game,points)
values('4',"Neha","auto",'4',"hockey",'40');

insert into outdoor(o_no,o_name,o_branch,year,o_game,points)
values('5',"vaishali","MBA",'1',"hockey",'45');


select * from outdoor;
select i_name from indoor union all select o_name from outdoor;


update outdoor set year='2' where o_name="ram";


select * from outdoor;


delete from outdoor where o_branch="MBA";


select *from outdoor;


select i_name from indoor union all select o_name from outdoor;


select o_name from outdoor;


select o_name from outdoor where o_game="cricket";


select sum(points) from indoor where i_branch="computer";


select avg(points) from indoor where i_branch="computer";


select min(points) from outdoor;


select * from outdoor where o_game like 'foo%';


select * from outdoor where o_branch like '__';


select * from indoor order by points DESC;
```

Create a medical database having following tables and apply above problem statement :
Patient table(patient_id,patient_name,Date of Admit,Age,City)
Doctor table(doc_id,doc_name,qualification,experience,dept,city,salary)
Treats table(doc_id,patient_id,disease) (use on delete cascade)

1. Insert at least 5 records in each table.
2. Display all the patient names between age group 18 to 50.
3. Display the list of all doctors who are MD.
4. Display the list of all doctors whose experience>20 years.
5. Display patient names suffering from cancer.
6. Display the patient name & doctor name who is treating the cancer patient.
7. Display the patient names whose name starts with letter 'a',end with 'a',having a name having exactly 5 letters.
8. Remove all the records of patient with patient_id=p10.
9. Remove all the records of doctor Suhas.
10. Change the qualification of doctor Shubham from MBBS to MD.
11. Give 5% salary rates to the dentist and 10% raise to cardiologist (in single query).
12. Find the dept that have the highest avg salary.
13. Find how many doctors work in hospital.
14. Find the avg salary of the doctors in dentist dept.
15. Find the dept where avg salary of the instructor is more than 50,000.
16. Find how many doctors work in hospital.
17. Find out how many doctors actually treated a patient.
18. List the cities in which either doctor or patient lives.
19. List the cities in which both the patient & the doctor lives.
20. Find out the doctors who have not treated any patient.

1. Insert at least 5 records in each table.
select * from Patient;

pat_id	pat_name	DateOfAdmit	age	city
a10	Aryan	2017-05-11	20	Mumbai

c12	Amit	2017-07-21	39	Bangalore
d13	Anita	2017-09-25	49	Pune
p10	Sandesh	2016-07-21	28	Pune
x15	Suyash	2017-04-17	29	Delhi
+--------+----------+-------------+------+-----------+

```
select * from Doctor;
+--------+----------+---------------+------------+------------+-----------
+--------+
| doc_id | doc_name | qualification | experience | dept | city |
salary |
+--------+----------+---------------+------------+------------+-----------
+--------+
| e1 | Suhas | MD | 10 | Dental | Pune |
70000 |
| r5 | Yogesh | MD | 8 | Dental | Delhi |
40000 |
| s5 | Mangesh | MBBS | 25 | Cardiology | Bangalore |
100000 |
| w8 | Komal | MBBS | 25 | Chemothera | Kolkata |
45000 |
| y3 | Shubham | MBBS | 10 | Cardiology | Mumabi |
60000 |
+--------+----------+---------------+------------+------------+-----------
+--------+
select * from Treats;
+--------+--------+--------------+
| doc_id | pat_id | disease |
+--------+--------+--------------+
| w8 | p10 | Cancer |
| w8 | c12 | Cancer |
| e1 | d13 | Toothache |
| s5 | x15 | Heart Attack |
| r5 | a10 | Cavities |
+--------+--------+--------------+
5 rows in set (0.00 sec)
```

2. Display all the patient names between age group 18 to 50.

```
select pat_name from Patient where age between 18 and 50;
+----------+
| pat_name |
+----------+
| Aryan |
| Amit |
| Anita |
| Sandesh |
| Suyash |
+----------+
5 rows in set (0.00 sec)
```

3. Display the list of all doctors who are MD.

```
select doc_name from Doctor where qualification="MD";
+----------+
| doc_name |
+----------+
| Suhas |
| Yogesh |
+----------+
2 rows in set (0.00 sec)
```

4. Display the list of all doctors whose experience>20 years.
select doc_name from Doctor where experience>20;
+----------+
| doc_name |
+----------+
| Mangesh |
| Komal |
+----------+
2 rows in set (0.00 sec)
5. Display patient names suffering from cancer.
select pat_name from Patient,Treats where Treats.disease="Cancer" and
Treats.pat_id=Patient.pat_id;
+----------+
| pat_name |
+----------+
| Sandesh |
| Amit |
+----------+
2 rows in set (0.02 sec)
6. Display the patient name & doctor name who is treating the cancer patient.
select pat_name,doc_name from Patient as p,Doctor as d,Treats as t where
disease="Cancer" and d.doc_id=t.doc_id and p.pat_id=t.pat_id;
+----------+----------+
| pat_name | doc_name |
+----------+----------+
| Sandesh | Komal |
| Amit | Komal |
+----------+----------+
2 rows in set (0.00 sec)
7. Display the patient names whose name starts with letter 'a',end with
'a',having a name having exactly 5 letters.
select pat_name from Patient where pat_name like "a%";
+----------+
| pat_name |
+----------+
| Aryan |
| Amit |
| Anita |
+----------+
3 rows in set (0.00 sec)
mysql> select pat_name from Patient where pat_name like "%a";
+----------+
| pat_name |
+----------+
| Anita |
+----------+
1 row in set (0.00 sec)
mysql> select pat_name from Patient where pat_name like "_ _ _ _ _";
+----------+
| pat_name |
+----------+
| Aryan |
| Anita |
+----------+
2 rows in set (0.00 sec)
8. Remove all the records of patient with patient_id=p10.

```
delete from Patient where pat_id="p10";
Query OK, 1 row affected (0.04 sec)
mysql> select * from Patient;
+--------+----------+-------------+------+-----------+
| pat_id | pat_name | DateOfAdmit | age | city |
+--------+----------+-------------+------+-----------+
| a10 | Aryan | 2017-05-11 | 20 | Mumbai |
| c12 | Amit | 2017-07-21 | 39 | Bangalore |
| d13 | Anita | 2017-09-25 | 49 | Pune |
| x15 | Suyash | 2017-04-17 | 29 | Delhi |
+--------+----------+-------------+------+-----------+
4 rows in set (0.00 sec)
select * from Treats;
+--------+--------+--------------+
| doc_id | pat_id | disease |
+--------+--------+--------------+
| w8 | c12 | Cancer |
| e1 | d13 | Toothache |
| s5 | x15 | Heart Attack |
| r5 | a10 | Cavities |
+--------+--------+--------------+
4 rows in set (0.00 sec)
9. Remove all the records of doctor Suhas.
select * from Treats;
+--------+--------+--------------+
| doc_id | pat_id | disease |
+--------+--------+--------------+
| w8 | c12 | Cancer |
| s5 | x15 | Heart Attack |
| r5 | a10 | Cavities |
+--------+--------+--------------+
3 rows in set (0.00 sec)
mysql> select * from Doctor;
+--------+----------+---------------+------------+------------+-----------
+--------+
| doc_id | doc_name | qualification | experience | dept | city |
salary |
+--------+----------+---------------+------------+------------+-----------
+--------+
| r5 | Yogesh | MD | 8 | Dental | Delhi |
40000 |
| s5 | Mangesh | MBBS | 25 | Cardiology | Bangalore |
100000 |
| w8 | Komal | MBBS | 25 | Chemothera | Kolkata |
45000 |
| y3 | Shubham | MBBS | 10 | Cardiology | Mumabi |
60000 |
+--------+----------+---------------+------------+------------+-----------
+--------+
4 rows in set (0.00 sec)
10. Change the qualification of doctor Shubham from MBBS to MD.
update Doctor set qualification="MD" where doc_name="Shubham";
Query OK, 1 row affected (0.03 sec)
Rows matched: 1 Changed: 1 Warnings: 0
mysql> select * from Doctor;
+--------+----------+---------------+------------+------------+-----------
```

```
+--------+
| doc_id | doc_name | qualification | experience | dept | city |
salary |
+--------+----------+---------------+------------+------------+-----------
+--------+
| r5 | Yogesh | MD | 8 | Dental | Delhi |
40000 |
| s5 | Mangesh | MBBS | 25 | Cardiology | Bangalore |
100000 |
| w8 | Komal | MBBS | 25 | Chemothera | Kolkata |
45000 |
| y3 | Shubham | MD | 10 | Cardiology | Mumabi |
60000 |
+--------+----------+---------------+------------+------------+-----------
+--------+
4 rows in set (0.00 sec)
```

11. Give 5% salary rates to the dentist and 10% raise to cardiologist (in single query).

```
update Doctor set salary=case when dept="Dental" then salary+salary*(0.05) when
dept="Cardiology" then salary+salary*(0.1) else salary*1 end;
Query OK, 3 rows affected (0.05 sec)
Rows matched: 4 Changed: 3 Warnings: 0
mysql> select * from Doctor;
+--------+----------+---------------+------------+------------+-----------
+--------+
| doc_id | doc_name | qualification | experience | dept | city |
salary |
+--------+----------+---------------+------------+------------+-----------
+--------+
| r5 | Yogesh | MD | 8 | Dental | Delhi |
42000 |
| s5 | Mangesh | MBBS | 25 | Cardiology | Bangalore |
110000 |
| w8 | Komal | MBBS | 25 | Chemothera | Kolkata |
45000 |
| y3 | Shubham | MD | 10 | Cardiology | Mumabi |
66000 |
+--------+----------+---------------+------------+------------+-----------
+--------+
4 rows in set (0.00 sec)
```

12. Display dept wise total salary of doctors.

```
select dept,sum(salary) from Doctor group by dept;
+------------+-------------+
| dept | sum(salary) |
+------------+-------------+
| Cardiology | 176000 |
| Chemothera | 45000 |
| Dental | 42000 |
+------------+-------------+
3 rows in set (0.00 sec)
```

13. Find the dept that have the highest avg salary.

```
select dept,avg(salary) from Doctor group by dept having avg(salary)>=all(select
avg(salary) from Doctor group by dept);
+------------+-------------+
| dept | avg(salary) |
+------------+-------------+
```

| Cardiology | 88000.0000 |
+------------+-------------+
1 row in set (0.00 sec)
14. Find the avg salary of the doctors in dentist dept.
select avg(salary) from Doctor where dept="Dental";
+-------------+
| avg(salary) |
+-------------+
| 42000.0000 |
+-------------+
1 row in set (0.00 sec)
15. Find the dept where avg salary of the instructor is more than 50,000.
select dept from Doctor group by dept having avg(salary)>50000;
+------------+
| dept |
+------------+
| Cardiology |
+------------+
1 row in set (0.02 sec)
16. Find how many doctors work in hospital.
select count(*) from Doctor;
+----------+
| count(*) |
+----------+
| 4 |
+----------+
1 row in set (0.00 sec)
17. Find out how many doctors actually treated a patient.
select count(distinct doc_id) from Treats;
+------------------------+
| count(distinct doc_id) |
+------------------------+
| 3 |
+------------------------+
1 row in set (0.00 sec)
18. List the cities in which either doctor or patient lives.
select city from Doctor union select city from Patient;
+-----------+
| city |
+-----------+
| Delhi |
| Bangalore |
| Kolkata |
| Mumbai |
| Pune |
+-----------+
5 rows in set (0.01 sec)
19. List the cities in which both the patient & the doctor lives.
select d.city from Doctor as d,Patient as p where d.city=p.city;
+-----------+
| city |
+-----------+
| Mumbai |
| Bangalore |
| Delhi |
+-----------+

3 rows in set (0.00 sec)
20. Find out the doctors who have not treated any patient.
select doc_name,doc_id from Doctor where doc_id not in(select distinct doc_id
from Treats);
+----------+--------+
| doc_name | doc_id |
+----------+--------+
| Shubham | y3 |
+----------+--------+
1 row in set (0.00