LAB RECORD

Name: Avirath Manohar Hegde **Course Code**: 19CS4PCDBM

USN : 1BM19CS195 **Course Name**:DBMS LAB

1. LAB PROGRAM 1 (INSURANCE DATABASE):-

Queries:

```
create database insurance;
use insurance;

create table person(
        driver_id varchar(10),
    name varchar(20),
        address varchar(30),
        primary key(driver_id)
);

desc person;

create table car(
        reg_num varchar(10),
        model varchar(10),
        year int,
        primary key(reg_num)
);

desc car;

create table accident(
        report_num int,
        accident_date date,
        location varchar(20),
        primary key(report_num)
);

create table owns(
        driver_id varchar(10),
        reg_num varchar(10),
        primary key(driver_id,reg_num),
```

```
        foreign key(driver_id) references person(driver_id),
        foreign key(reg_num) references car(reg_num)
);

desc owns;

create table participated(
        driver_id varchar(10),
        reg_num varchar(10),
        report_num int,
        damage_amount int,
        primary key(driver_id,reg_num,report_num),
        foreign key(driver_id) references person(driver_id),
        foreign key(reg_num) references car(reg_num),
        foreign key(report_num) references accident(report_num)
);

desc participated;

insert into person values('A01','Richard',' Srinivas Nagar');
insert into person values('A02','Pradeep','Rajajinagar');
insert into person values('A03','Smith','Ashoknagar');
insert into person values('A04','Venu','N.R.Colony');
insert into person values('A05','John','Hanumanth Nagar');

commit;

select * from person;

insert into car values('KA031181','Lancer',1957);
insert into car values('KA041702','Audi',2005);
insert into car values('KA043408','Honda',2008);
insert into car values('KA052250','Indica',1990);
insert into car values('KA095477','Toyota',1998);

commit;

select * from car;


insert into accident values(11,'2001-01-03','Mysore Road');
insert into accident values(12,'2021-01-03','Southend Circle');
insert into accident values(13,'2020-03-03',' Bulltemple Road');
insert into accident values(14,' 2017-02-08',' Mysore Road');
insert into accident values(15,'2004-03-05','Kanakpura Road');
commit;

select * from accident;

insert into owns values ('A01','KA052250');
```

```
insert into owns values ('A02','KA043408');
insert into owns values ('A03','KA031181');
insert into owns values ('A04','KA095477');
insert into owns values ('A05','KA041702');
commit;

select * from owns;

insert into participated values ('A01','KA052250',11, 25000);
insert into participated values ('A02','KA043408',12, 50000);
insert into participated values ('A03','KA031181',13, 25000);
insert into participated values ('A04','KA095477',14, 3000);
insert into participated values ('A05','KA041702',15, 5000);
commit;

select * from participated;

update participated
set damage_amount = 2500
where reg_num='KA031111';

select * from participated;

insert into accident values(101,'2020-12-01','Xavier Road');
insert into participated values('A01','KA031111',101, 1001);
commit;
select * from accident;
select * from participated;

insert into car values('KA01010', 'Accord', 2002);
insert into owns values('A02', 'KA01010');
insert into accident values(200, '2008-12-01', 'Pinto Road');
insert into participated values('A02', 'KA01010', 200, 500);
commit;

select * from car;
select * from owns;
select * from accident;
select * from participated;

select count(*) from accident where year(accident_date)=2008;
select count(*) from participated where reg_num in ( select reg_num from car where
model="Accord");
```

	report_num	accident_date	location
▶	11	2001-01-03	Mysore Road
	12	2002-02-04	Southend Circle
	13	2021-01-03	Bulltemple Road
	14	2017-02-08	Mysore Road
	15	2004-03-05	Kanakpura Road
*	NULL	NULL	NULL

Accident Table

	report_num	accident_date	location
▶	11	2001-01-03	Mysore Road
	12	2002-02-04	Southend Circle
	13	2021-01-03	Bulltemple Road
	14	2017-02-08	Mysore Road
	15	2004-03-05	Kanakpura Road
	16	2020-12-01	Xavier Road
	200	2008-12-01	Pinto Road
*	NULL	NULL	NULL

Accident Final Table

	reg_num	model	year
▶	KA031181	Lancer	1957
	KA041702	Audi	2005
	KA043408	Honda	2008
	KA052250	Indica	1990
	KA095477	Toyota	1998
*	NULL	NULL	NULL

Car Table

	reg_num	model	year
▶	KA01010	Accord	2002
	KA031181	Lancer	1957
	KA041702	Audi	2005
	KA043408	Honda	2008
	KA052250	Indica	1990
	KA095477	Toyota	1998
*	NULL	NULL	NULL

Car Final Table

	driver_id	reg_num
▶	A03	KA031181
	A05	KA041702
	A02	KA043408
	A01	KA052250
	A04	KA095477
*	NULL	NULL

Owns Table

	driver_id	reg_num
▶	A02	KA01010
	A03	KA031181
	A05	KA041702
	A02	KA043408
	A01	KA052250
	A04	KA095477
*	NULL	NULL

Owns Final Table

	driver_id	reg_num	report_num	damage_amount
▶	A01	KA052250	11	10000
	A02	KA043408	12	50000
	A03	KA031181	13	25000
	A04	KA095477	14	3000
	A05	KA041702	15	5000
*	NULL	NULL	NULL	NULL

Participated Table

	driver_id	reg_num	report_num	damage_amount
▶	A01	KA052250	11	25000
	A01	KA052250	16	1001
	A02	KA01010	200	500
	A02	KA043408	12	50000
	A03	KA031181	13	25000
	A04	KA095477	14	3000
	A05	KA041702	15	5000
*	NULL	NULL	NULL	NULL

Participated Table Final

	driver_id	name	address
▶	A01	Richard	Srinivas Nagar
	A02	Pradeep	Rajajinagar
	A03	Smith	Ashoknagar
	A04	Venu	N.R.Colony
	A05	John	Hanumanth Nagar
*	NULL	NULL	NULL

Person Table

2. LAB PROGRAM 2 (BANK DATABASE):-

Queries:

```
create database bank;

use bank;

create table branch (
        branch_name varchar(25),
    branch_city varchar(15),
    assets int,
    primary key (branch_name)
);

create table bank_account (
        accno int,
    branch_name varchar(25),
    balance int,
    primary key (accno),
    foreign key (branch_name) references branch(branch_name)
);

create table bank_customer (
        customer_name varchar(10),
    customer_street varchar(25),
    customer_city varchar(15),
    primary key (customer_name)
);

create table depositer (
        customer_name varchar(10),
        accno int,
    primary key(customer_name, accno),
    foreign key (customer_name) references bank_customer(customer_name),
    foreign key (accno) references bank_account(accno)
);

create table loan (
        loan_number int,
    branch_name varchar(25),
    amount int,
    primary key (loan_number),
    foreign key (branch_name) references branch(branch_name)
);
```

```
insert into branch values('SBI_Chamrajpet', 'Bangalore', 50000);
insert into branch values('SBI_ResidencyRoad', 'Bangalore', 10000);
insert into branch values('SBI_ShivajiRoad', 'Bombay', 20000);
insert into branch values('SBI_ParliamentRoad', 'Delhi', 10000);
insert into branch values('SBI_Jantarmantar', 'Delhi', 20000);
commit;

insert into bank_account values(1, 'SBI_Chamrajpet', 2000);
insert into bank_account values(2, 'SBI_ResidencyRoad', 5000);
insert into bank_account values(3, 'SBI_ShivajiRoad', 6000);
insert into bank_account values(4, 'SBI_ParliamentRoad', 9000);
insert into bank_account values(5, 'SBI_Jantarmantar', 8000);
insert into bank_account values(6, 'SBI_ShivajiRoad', 4000);
insert into bank_account values(8, 'SBI_ResidencyRoad', 4000);
insert into bank_account values(9, 'SBI_ParliamentRoad', 3000);
insert into bank_account values(10, 'SBI_ResidencyRoad', 5000);
insert into bank_account values(11, 'SBI_Jantarmantar', 2000);
commit;

insert into bank_customer values ('Avinash', 'Bull_Temple_Road', 'Bangalore');
insert into bank_customer values ('Dinesh', 'Bannergatta_Road', 'Bangalore');
insert into bank_customer values ('Mohan', 'National_College_Road', 'Bangalore');
insert into bank_customer values ('Nikhil', 'Akbar_Road', 'Delhi');
insert into bank_customer values ('Ravi', 'Prithviraj_Road', 'Delhi');
commit;

insert into depositer values('Avinash', 1);
insert into depositer values('Dinesh', 2);
insert into depositer values('Nikhil', 4);
insert into depositer values('Ravi', 5);
insert into depositer values('Avinash', 8);
insert into depositer values('Nikhil', 9);
insert into depositer values('Dinesh', 10);
insert into depositer values('Nikhil', 11);
commit;

insert into loan values(1, 'SBI_Chamrajpet', 1000);
insert into loan values(2, 'SBI_ResidencyRoad', 2000);
insert into loan values(3, 'SBI_ShivajiRoad', 3000);
insert into loan values(4, 'SBI_ParliamentRoad', 4000);
insert into loan values(5, 'SBI_Jantarmantar', 5000);
commit;



select * from branch;
select * from bank_account;
select * from bank_customer;
select * from depositer;
select * from loan;
```

accno	branch_name	balance
1	SBI_Chamrajpet	2000
2	SBI_ResidencyRoad	5000
4	SBI_ParliamentRoad	9000
5	SBI_Jantarmantar	8000
8	SBI_ResidencyRoad	4000
9	SBI_ParliamentRoad	3000
10	SBI_ResidencyRoad	5000
11	SBI_Jantarmantar	2000
NULL	NULL	NULL

Bank Account Table

Result Grid | Filter Rows: | Edit:

customer_name	customer_street	customer_city
Avinash	Bull_Temple_Road	Bangalore
Dinesh	Bannergatta_Road	Bangalore
Mohan	National_College_Road	Bangalore
Nikhil	Akbar_Road	Delhi
Ravi	Prithviraj_Road	Delhi
NULL	NULL	NULL

Bank Customer Table

branch_name	branch_city	assets
SBI_Chamrajpet	Bangalore	50000
SBI_Jantarmantar	Delhi	20000
SBI_ParliamentRoad	Delhi	10000
SBI_ResidencyRoad	Bangalore	10000
SBI_ShivajiRoad	Bombay	20000
NULL	NULL	NULL

Branch Table

customer_name	accno
Avinash	1
Dinesh	2
Nikhil	4
Ravi	5
Avinash	8
Nikhil	9
Dinesh	10
Nikhil	11
NULL	NULL

Depositor Table

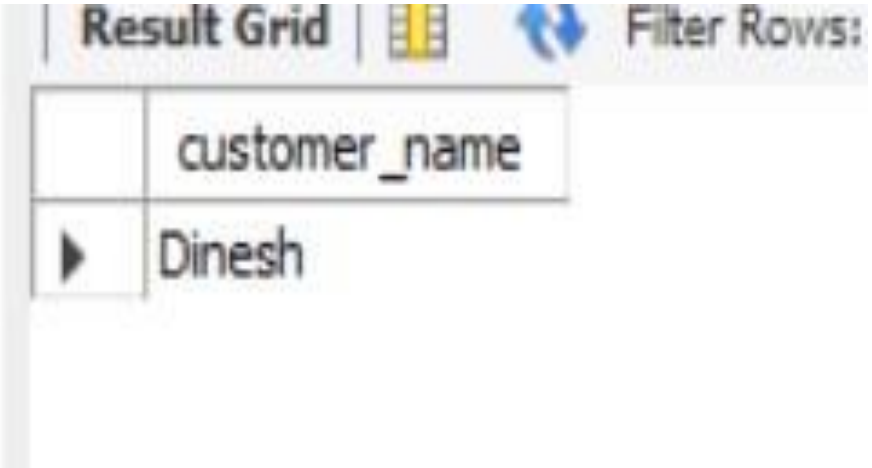
loan_number	branch_name	amount
1	SBI_Chamrajpet	1000
2	SBI_ResidencyRoad	2000
3	SBI_ShivajiRoad	3000
4	SBI_ParliamentRoad	4000
5	SBI_Jantarmantar	5000
NULL	NULL	NULL

Loan Table

Query 3 :

```
use bank;

select distinct c.customer_name

from bank_customer c,bank_account b

where exists(select d.customer_name,count(d.customer_name)

from depositer d,bank_account ba
where ba.accno = d.accno and

c.customer_name = d.customer_name and ba.branch_name = 'SBI_ResidencyRoad'
group by d.customer_name having count(d.customer_name)>=2);
```

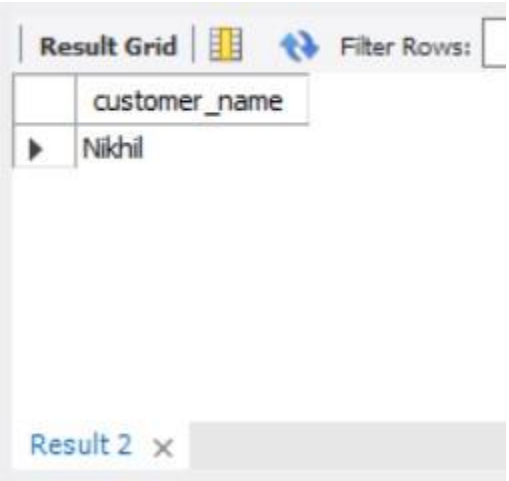
Output:



Query 4:

```
use bank;

select d.customer_name from depositer d,branch b,bank_account a
where b.branch_name=a.branch_name
AND a.accno=d.accno and
branch_city='Delhi' group
by d.customer_name
 HAVING COUNT(distinct
        b.branch_name)=( SELECT
        COUNT(branch_name) FROM
        branch
        WHERE branch_city='Delhi');
```

Output:



Query 5:

```
delete from bank_account
 where branch_name in
```

(select branch_name from branch where branch_city = 'Bombay');

select * from bank_account;

Output:

accno	branch_name	balance
1	SBI_Chamrajpet	2000
2	SBI_ResidencyRoad	5000
4	SBI_ParliamentRoad	9000
5	SBI_Jantarmantar	8000
8	SBI_ResidencyRoad	4000
9	SBI_ParliamentRoad	3000
10	SBI_ResidencyRoad	5000
11	SBI_Jantarmantar	2000
NULL	NULL	NULL

3. LAB PROGRAM 3 (SUPPLIER DATABASE):-

QUERIES:

```
create
database
supplier;
```

```
use supplier;
create table suppliers(
        sid int primary key,
   sname varchar(30),
   address varchar(30)
);
create table parts(
        pid int primary key,
   pname varchar(30),
   color varchar(30)
);
create table catalog (
        sid int ,
   pid int ,
   cost real,
```

```
    constraint c_sid foreign key(sid) references suppliers(sid) ,
    constraint c_pid foreign key(pid) references parts(pid)
);
insert into suppliers values(1,'Acme Widget','kolkata') ;
insert into suppliers values(2,'Tata','bengaluru') ;
insert into suppliers values(3,'Reebok','delhi') ;
insert into suppliers values(4,'Nike','delhi') ;
insert into suppliers values(5,'Reliance','delhi') ;


insert into parts values(1,'paint','red') ;
insert into parts values(2,'steel','black') ;
insert into parts values(3,'spray','red') ;
insert into parts values(4,'sheet','green');
insert into parts values(5,'tiles','blue');
delete from parts where pid=5;

insert into catalog values(1,1,100);
insert into catalog values(1,2,200);
insert into catalog values(1,3,200);
insert into catalog values(1,4,100);
insert into catalog values(2,1,300);
insert into catalog values(2,2,100);
insert into catalog values(3,2,90);
insert into catalog values(3,3,110);
insert into catalog values(3,4,110);
insert into catalog values(4,1,100);
insert into catalog values(4,3,120);
insert into catalog values(4,4,130);

select * from catalog;
select * from parts;
```

Catalogue Table:

	sid	pid	cost
▶	10001	20001	10
	10001	20002	10
	10001	20003	30
	10001	20004	10
	10001	20005	10
	10002	20001	10
	10002	20002	20
	10003	20003	30
	10004	20003	40
*	NULL	NULL	NULL

	pid	pname	color
▶	20001	Book	Red
	20002	Pen	Red
	20003	Pencil	Green
	20004	Mobile	Green
	20005	Charger	Black
*	NULL	NULL	NULL

Suppliers Table:

	sid	sname	address
▶	10001	Acme Widget	Bangalore
	10002	Johns	Kolkata
	10003	Vimal	Mumbai
	10004	Reliance	Delhi
*	NULL	NULL	NULL

ADDITIONAL

QUERIES Query 1:

SELECT DISTINCT

P.pname FROM Parts P,

Catalog C WHERE P.pid

= C.pid;

Output:

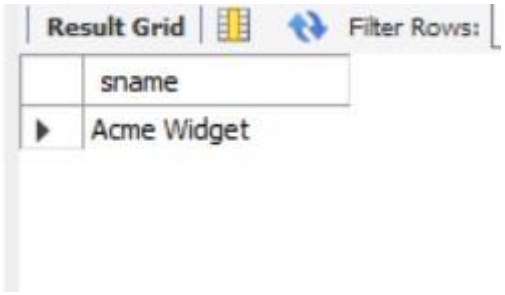
	pname
▶	Book
	Pen
	Pencil
	Mobile
	Charger

Query 2:

select S.sname from SUPPLIERS S where not exists

(select P.pid from PARTS P where not exists

Output:



Query 3:

select S.sname from SUPPLIERS S where not exists

(select P.pid from PARTS P where P.color = 'Red' and

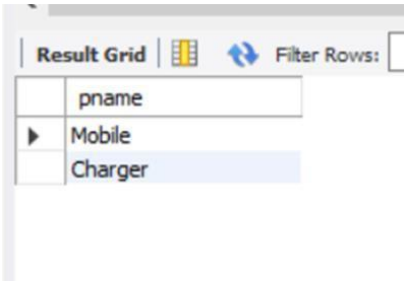
(not exists (select C.sid from CATALOG C where C.sid = S.sid and C.pid = P.pid)));

Output:

Query 4:

```
select P.pname from PARTS P, CATALOG C, SUPPLIERS S

 where P.pid = C.pid and C.sid = S.sid and S.sname = 'Acme
 Widget' and not exists (select * from CATALOG C1, SUPPLIERS
 S1

 where P.pid = C1.pid and C1.sid = S1.sid and S1.sname <> 'Acme Widget');
  (select C.sid from CATALOG C where C.sid = S.sid and C.pid = P.pid));
```

Output:



Query 5:

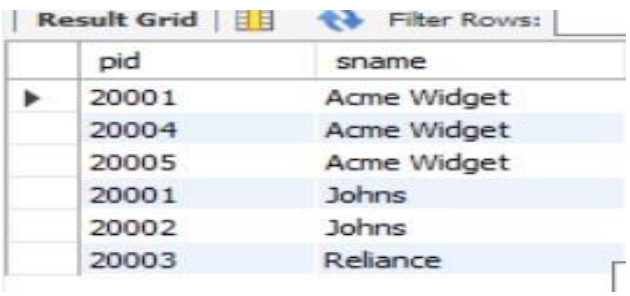
```
SELECT DISTINCT C.sid FROM
Catalog C WHERE C.cost > ( SELECT
AVG (C1.cost) FROM Catalog C1

WHERE C1.pid = C.pid
);
```

Output:

	sid
▶	10002
	10004

Query 6:

```
SELECT P.pid,
S.sname


FROM Parts P, Suppliers S, Catalog
C WHERE C.pid = P.pid

AND C.sid =
S.sid


AND C.cost = (SELECT
MAX(C1.cost) FROM Catalog C1

WHERE C1.pid =
P.pid);
```



Result Grid | Filter Rows:

	pid	sname
▶	20001	Acme Widget
	20004	Acme Widget
	20005	Acme Widget
	20001	Johns
	20002	Johns
	20003	Reliance

4. LAB PROGRAM 4 (STUDENT FACULTY DATABASE):-

Queries:

```
CREATE
DATABASE
student_faculty;
```

```
USE student_faculty;
CREATE TABLE student(
        snum INT,
        sname VARCHAR(10),
        major VARCHAR(2),
        lvl VARCHAR(2),
        age INT, primary key(snum));

CREATE TABLE faculty(
        fid INT,fname VARCHAR(20),
        deptid INT,
   PRIMARY KEY(fid));

CREATE TABLE class(
        cname VARCHAR(20),
        metts_at TIMESTAMP,
        room VARCHAR(10),
   fid INT,
        PRIMARY KEY(cname),
        FOREIGN KEY(fid) REFERENCES faculty(fid));

CREATE TABLE enrolled(
        snum INT,
        cname VARCHAR(20),
        PRIMARY KEY(snum,cname),
        FOREIGN KEY(snum) REFERENCES student(snum),
        FOREIGN KEY(cname) REFERENCES class(cname));

INSERT INTO STUDENT VALUES(1, 'jhon', 'CS', 'Sr', 19);
INSERT INTO STUDENT VALUES(2, 'Smith', 'CS', 'Jr', 20);
INSERT INTO STUDENT VALUES(3 , 'Jacob', 'CV', 'Sr', 20);
INSERT INTO STUDENT VALUES(4, 'Tom ', 'CS', 'Jr', 20);
INSERT INTO STUDENT VALUES(5, 'Rahul', 'CS', 'Jr', 20);
INSERT INTO STUDENT VALUES(6, 'Rita', 'CS', 'Sr', 21);

INSERT INTO FACULTY VALUES(11, 'Harish', 1000);
INSERT INTO FACULTY VALUES(12, 'MV', 1000);
INSERT INTO FACULTY VALUES(13 , 'Mira', 1001);
INSERT INTO FACULTY VALUES(14, 'Shiva', 1002);
INSERT INTO FACULTY VALUES(15, 'Nupur', 1000);
```

```
insert into class values('class1', '12/11/15 10:15:16', 'R1', 14);
insert into class values('class10', '12/11/15 10:15:16', 'R128', 14);
insert into class values('class2', '12/11/15 10:15:20', 'R2', 12);
insert into class values('class3', '12/11/15 10:15:25', 'R3', 11);
insert into class values('class4', '12/11/15 20:15:20', 'R4', 14);
insert into class values('class5', '12/11/15 20:15:20', 'R3', 15);
insert into class values('class6', '12/11/15 13:20:20', 'R2', 14);
insert into class values('class7', '12/11/15 10:10:10', 'R3', 14);

insert into enrolled values(1, 'class1');
insert into enrolled values(2, 'class1');
insert into enrolled values(3, 'class3');
insert into enrolled values(4, 'class3');
insert into enrolled values(5, 'class4');
insert into enrolled values(1, 'class5');
insert into enrolled values(2, 'class5');
insert into enrolled values(3, 'class5');
insert into enrolled values(4, 'class5');
insert into enrolled values(5, 'class5');
```

Class Table:

cname	metts_at	room	fid
class4	2012-11-15 20:15:20	R4	14
class5	2012-11-15 20:15:20	R3	15
class6	2012-11-15 13:20:20	R2	14
class3	2012-11-15 10:15:25	R3	11
class2	2012-11-15 10:15:20	R2	12
class1	2012-11-15 10:15:16	R1	14
class10	2012-11-15 10:15:16	R128	14
class7	2012-11-15 10:10:10	R3	14
NULL	NULL	NULL	NULL

Enrolled Table:

snum	cname
1	class1
2	class1
3	class3
4	class3
5	class4
1	class5
2	class5
3	class5
4	class5
5	class5
NULL	NULL

Faculty Table:

fid	fname	deptid
11	Harish	1000
12	MV	1000
13	Mira	1001
14	Shiva	1002
15	Nupur	1000
NULL	NULL	NULL

Student Table:

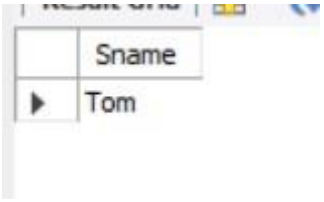
snum	sname	major	lvl	age
1	jhon	CS	Sr	19
2	Smith	CS	Jr	20
3	Jacob	CV	Sr	20
4	Tom	CS	Jr	20
5	Rahul	CS	Jr	20
6	Rita	CS	Sr	21
NULL	NULL	NULL	NULL	NULL

ADDITIONAL QUERIES

Query 1:

```
SELECT DISTINCT S.Sname
FROM Student S, Class C, Enrolled E, Faculty F
WHERE S.snum = E.snum AND E.cname = C.cname AND C.fid = F.fid
AND F.fname = 'Harish' AND S.lvl = 'Jr';
```

Output:



	Sname
▶	Tom

Query 2:

```
SELECT DISTINCT cname
FROM class
WHERE
room='R128' OR
cname IN (SELECT e.cname FROM enrolled e GROUP BY e.cname HAVING COUNT(*)>=5);
```

Output:

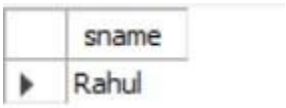
	cname
▶	class10
	class5
*	NULL

Query 3:

```
SELECT DISTINCT S.sname
FROM Student S
WHERE S.snum IN (SELECT E1.snum
                 FROM Enrolled E1, Enrolled E2, Class C1, Class C2
```

```
WHERE E1.snum = E2.snum AND E1.cname <> E2.cname
AND E1.cname = C1.cname
AND E2.cname = C2.cname AND C1.metts_at = C2.metts_at);
```

Output:



	sname
▶	Rahul

Query 4:

```
SELECT f.fname,f.fid
FROM faculty f
WHERE f.fid in ( SELECT fid FROM class
GROUP BY fid HAVING COUNT(*)=(SELECT COUNT(DISTINCT room) FROM class) );
```

Output:

	fname	fid
▶	Shiva	14
*	NULL	NULL

Query 5:

```
SELECT DISTINCT F.fname
FROM Faculty F
WHERE 5 > (SELECT
COUNT(E.snum) FROM Class C,
Enrolled E
WHERE C.cname = E.cname
AND C.fid = F.fid);
```

Output:

	fname
▶	Harish
	MV
	Mira
	Shiva

Query 6:

```
SELECT DISTINCT S.sname
FROM Student S
WHERE S.snum NOT IN (SELECT E.snum
FROM Enrolled E );
```

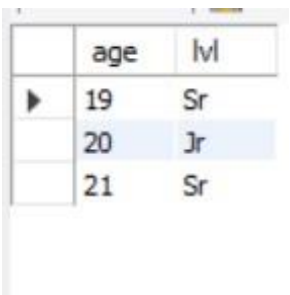
Output:

	sname
▶	Rita

Query 7:

```
SELECT S.age, S.lvl
FROM STUDENT S
GROUP BY S.age,
S.lvl
HAVING S.lvl IN(SELECT S1.lvl
FROM STUDENT S1
WHERE S1.age=S.age
GROUP BY S1.age, S1.lvl
HAVING COUNT(*)  >= ALL (SELECT
COUNT(*) FROM STUDENT S2
WHERE S1.age=S2.age
GROUP BY S2.lvl,
S2.age)) ORDER BY
S.age;
```

Output:



	age	lvl
▶	19	Sr
	20	Jr
	21	Sr

5. LAB PROGRAM 5 (FLIGHT DATABASE):-

Queries:

```
create
database
flightdb;
use flightdb;

create table flights(
        flno int,
    fromplace varchar(15),
    toplace varchar(15),
    distance int,
    departs datetime,
    arrives datetime,
    price int,
    primary key (flno)
);
desc flights;
create table aircraft(
        aid int,
    aname varchar(15),
    cruisingrange int,
    primary key (aid)
);
desc aircraft;
create table employees (
        eid int,
    ename varchar(15),
    salary int,
    primary key (eid)
);
desc employees;
create table certified (
        eid int,
    aid int,
    foreign key (eid) references employees(eid),
    foreign key (aid) references aircraft(aid)
);
desc certified;
insert into flights values(101, 'Bangalore', 'Delhi', 2500, '2005-05-13 07:15:31', '2005-05-13 18:15:31',
5000);
insert into flights values(102, 'Bangalore', 'Lucknow', 3000, '2013-05-05 07:15:31', '2013-05-05
11:15:31', 6000);
insert into flights values(103, 'Lucknow', 'Delhi', 500, '2013-05-05 12:15:31', '2013-05-05 17:15:31',
3000);
```

```
insert into flights values(107, 'Bangalore', 'Frankfurt', 8000, '2013-05-05 07:15:31', '2013-05-05 22:15:31', 60000);
insert into flights values(104, 'Bangalore', 'Frankfurt', 8500, '2013-05-05 07:15:31', '2013-05-05 23:15:31', 75000);
insert into flights values(105, 'Kolkata', 'Delhi', 3400, '2013-05-05 07:15:31', '2013-05-05 09:15:31', 7000);
insert into flights values(106, 'Bangalore', 'Kolkata', 1000, '2013-05-05 01:15:30', '2013-05-05 09:20:30', 10000);
insert into flights values(108, 'Lucknow', 'Kolkata', 1000, '2013-05-05 11:30:30', '2013-05-05 15:20:30', 10000);

commit;

select * from flights;

insert into aircraft values(101, '747', 3000);
insert into aircraft values(102, 'Boeing', 900);
insert into aircraft values(103, '647', 800);
insert into aircraft values(104, 'Dreamliner', 10000);
insert into aircraft values(105, 'Boeing', 3500);
insert into aircraft values(106, '707', 1500);
insert into aircraft values(107, 'Dream', 120000);
insert into aircraft values(108, '707', 760);
insert into aircraft values(109, '747', 1000);
commit;

select * from aircraft;

insert into employees values(701, 'A', 50000);
insert into employees values(702, 'B', 100000);
insert into employees values(703, 'C', 150000);
insert into employees values(704, 'D', 90000);
insert into employees values(705, 'E', 40000);
insert into employees values(706, 'F', 60000);
insert into employees values(707, 'G', 90000);
commit;

select * from employees;

insert into certified values(701, 101);
insert into certified values(701, 102);
insert into certified values(701, 106);
insert into certified values(701, 105);

insert into certified values(702, 104);
insert into certified values(703, 104);
insert into certified values(704, 104);

insert into certified values(702, 107);
insert into certified values(703, 107);
```

```
insert into certified values(704, 107);

insert into certified values(702, 101);
insert into certified values(702, 108);
insert into certified values(701, 109);
commit;
select * from certified;
```

Aircraft Table :

	aid	aname	cruisingrange
▶	101	747	3000
	102	Boeing	900
	103	647	800
	104	Dreamliner	10000
	105	Boeing	3500
	106	707	1500
	107	Dream	120000
	108	707	760
	109	747	1000
*	NULL	NULL	NULL

Employees Table:

	eid	ename	salary
▶	701	A	50000
	702	B	100000
	703	C	150000
	704	D	90000
	705	E	40000
	706	F	60000
	707	G	90000
*	NULL	NULL	NULL

Certified Table;

eid	aid
701	101
701	102
701	106
701	105
702	104
703	104
704	104
702	107
703	107
704	107
702	101
702	108
701	109

Flights Table:

fino	fromplace	toplace	distance	departs	arrives	price
101	Bangalore	Delhi	2500	2005-05-13 07:15:31	2005-05-13 18:15:31	5000
102	Bangalore	Lucknow	3000	2013-05-05 07:15:31	2013-05-05 11:15:31	6000
103	Lucknow	Delhi	500	2013-05-05 12:15:31	2013-05-05 17:15:31	3000
104	Bangalore	Frankfurt	8500	2013-05-05 07:15:31	2013-05-05 23:15:31	75000
105	Kolkata	Delhi	3400	2013-05-05 07:15:31	2013-05-05 09:15:31	7000
106	Bangalore	Kolkata	1000	2013-05-05 01:15:30	2013-05-05 09:20:30	10000
107	Bangalore	Frankfurt	8000	2013-05-05 07:15:31	2013-05-05 22:15:31	60000
108	Lucknow	Kolkata	1000	2013-05-05 11:30:30	2013-05-05 15:20:30	10000
NULL	NULL	NULL	NULL	NULL	NULL	NULL

ADDITIONAL

QUERIES Query 1:

```
select distinct a.aname from aircraft a where a.aid in (

        select c.aid from certified c, employees e where
   c.eid = e.eid and not exists(

            select * from employees e1 where e1.eid=e.eid and e1.salary<80000

   )

);
```

Result:

	aname
▶	747
	Dreamliner
	Dream
	707

Query 2:

select max(a.cruisingrange), c.eid from certified c, aircraft a where c.aid = a.aid group by c.eid having count(c.eid)>3;

Result:

	max(a.cruisingrange)	eid
▶	3500	701
	120000	702

Query 3:

select ename from employees where salary <(

select min(price) from flights where fromplace='Bangalore' and toplace='Frankfurt');

Result:

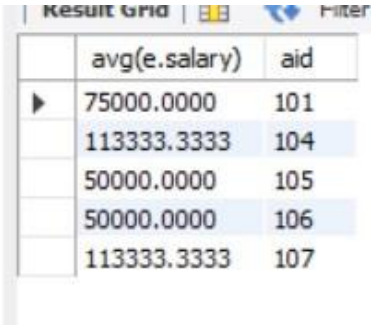
Result Grid

	ename
▶	A
	E

Query 4:

```
select avg(e.salary), c.aid from certified c, employees e where c.aid in(

select aid from aircraft where cruisingrange>1000) and e.eid = c.eid group by c.aid;
```

Result:

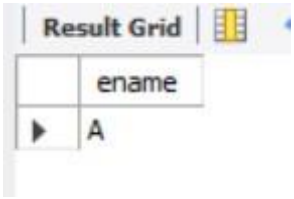


avg(e.salary)	aid
75000.0000	101
113333.3333	104
50000.0000	105
50000.0000	106
113333.3333	107

Query 5:

```
select ename from employees where eid in(

select eid from certified where aid in(

select aid from aircraft where aname = 'Boeing'));
```

Result:



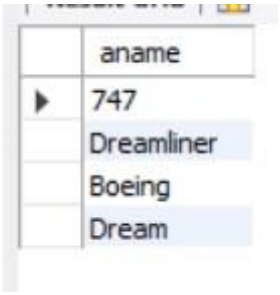
Result Grid

ename
A

Query 6:

```
select aname from aircraft where cruisingrange > any (select distance from flights where
fromplace='Bangalore' and toplace='Delhi');
```

Result:



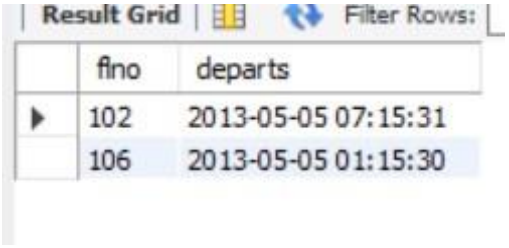
aname
747
Dreamliner
Boeing
Dream

Query 7:

```
SELECT F.flno, F.departs

FROM flights F

WHERE F.flno IN ( ( SELECT F0.flno
 FROM flights F0
WHERE F0.fromplace = 'Bangalore' AND F0.toplace =
'Kolkata' AND extract(hour from F0.arrives) < 18 )


 UNION
( SELECT F0.flno
 FROM flights F0, flights F1
 WHERE F0.fromplace = 'Bangalore' AND F0.toplace <>
 'Kolkata' AND F0.toplace = F1.fromplace AND F1.toplace =
 'Kolkata'

 AND F1.departs > F0.arrives
 AND extract(hour from F1.arrives) <
 18) UNION

( SELECT F0.flno
 FROM flights F0, flights F1, flights F2
 WHERE F0.fromplace =
 'Bangalore' AND F0.toplace =
 F1.fromplace AND F1.toplace =
```

```
F2.fromplace AND F2.toplace =
'Kolkata'

AND F0.toplace <> 'Kolkata' AND
F1.toplace <> 'Kolkata' AND
F1.departs > F0.arrives AND
F2.departs > F1.arrives

AND extract(hour from F2.arrives) < 18));
```

Result:



6. LAB PROGRAM 6 (ORDER DATABASE):-

Queries:

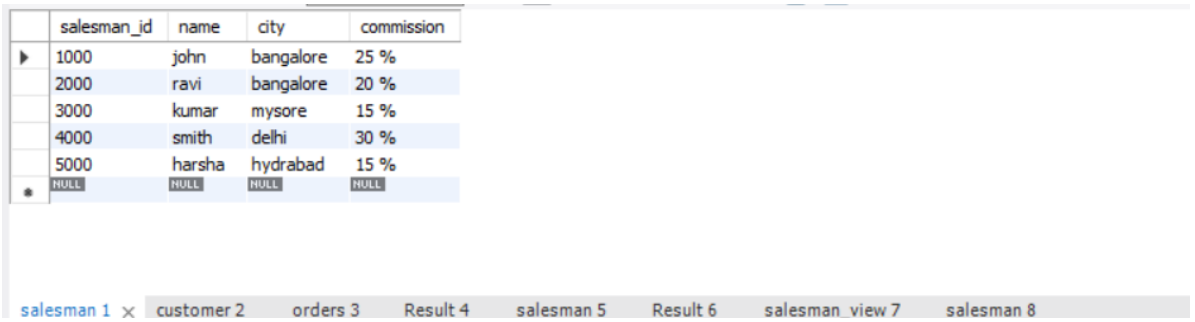
```
create database order_processsing;
use order_processsing;
create table salesman (salesman_id int, name varchar (20), city varchar (20), commission varchar (20), primary key (salesman_id));
create table customer (customer_id int, cust_name varchar (20), city varchar (20), grade int, salesman_id int, primary key (customer_id), foreign key(salesman_id) references salesman(salesman_id)
on delete set null);
create table orders (ord_no int, purchase_amt real, ord_date date, customer_id int, salesman_id int, primary key (ord_no), foreign key (customer_id) references customer(customer_id)
 on delete cascade, foreign key(salesman_id) references salesman(salesman_id) on delete cascade);

insert into salesman values (1000, 'john','bangalore','25 %');
insert into salesman values (2000, 'ravi','bangalore','20 %');
insert into salesman values (3000, 'kumar','mysore','15 %');
insert into salesman values (4000, 'smith','delhi','30 %');
insert into salesman values (5000, 'harsha','hydrabad','15 %');

insert into customer values (10, 'preethi','bangalore', 100, 1000);
insert into customer values (11, 'vivek','mangalore', 300, 1000);
insert into customer values (12, 'bhaskar','chennai', 400, 2000);
insert into customer values (13, 'chethan','bangalore', 200, 2000);
insert into customer values (14, 'mamatha','bangalore', 400, 3000);

insert into orders values (50, 5000, '04-05-17', 10, 1000);
insert into orders values (51, 450, '20-01-17', 10, 2000);
insert into orders values (52, 1000, '24-02-17', 13, 2000);
insert into orders values (53, 3500, '13-04-17', 14, 3000);
insert into orders values (54, 550, '09-03-17', 12, 2000);

select * from salesman;
select * from customer;
select * from orders;

select grade, count(distinct customer_id) from customer group by grade having grade > (select avg(grade) from customer where city='bangalore');

select salesman_id, name from salesman a where 1 < (select count(*) from customer where salesman_id=a.salesman_id);
```

```
select salesman.salesman_id, name, cust_name, commission from salesman, customer where salesman.city = customer.city union
select salesman_id, name, 'no match', commission from salesman where not city = any (select city from customer);
```

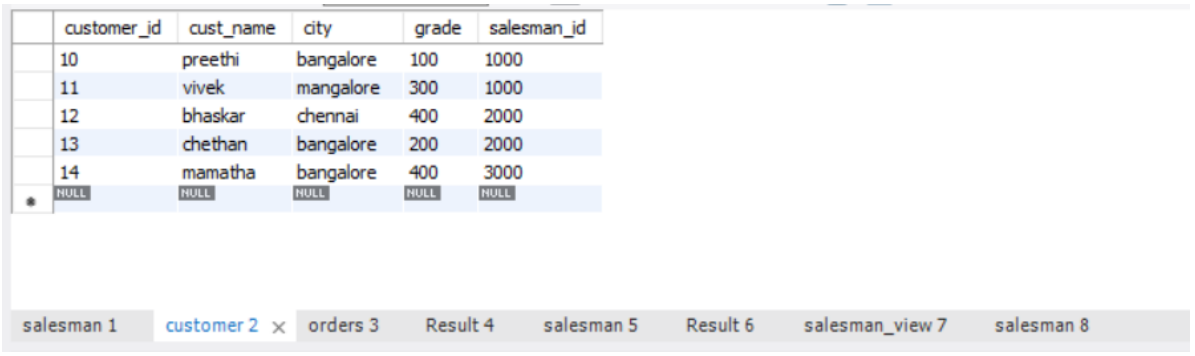
```
create view salesman_view as select b.ord_date, a.salesman_id, a.name from salesman a, orders b where a.salesman_id = b.salesman_id and b.purchase_amt=(select max(purchase_amt) from orders c where c.ord_date = b.ord_date);
select * from salesman_view;
```

```
delete from salesman where salesman_id=1000;
select * from salesman;
```

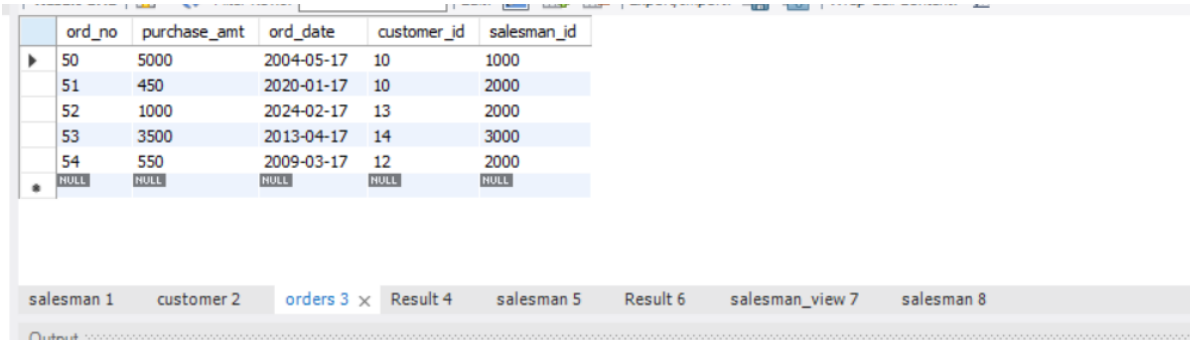
OUTPUT:-



salesman_id	name	city	commission
1000	john	bangalore	25 %
2000	ravi	bangalore	20 %
3000	kumar	mysore	15 %
4000	smith	delhi	30 %
5000	harsha	hydrabad	15 %
NULL	NULL	NULL	NULL



customer_id	cust_name	city	grade	salesman_id
10	preethi	bangalore	100	1000
11	vivek	mangalore	300	1000
12	bhaskar	chennai	400	2000
13	chethan	bangalore	200	2000
14	mamatha	bangalore	400	3000
NULL	NULL	NULL	NULL	NULL



ord_no	purchase_amt	ord_date	customer_id	salesman_id
50	5000	2004-05-17	10	1000
51	450	2020-01-17	10	2000
52	1000	2024-02-17	13	2000
53	3500	2013-04-17	14	3000
54	550	2009-03-17	12	2000
NULL	NULL	NULL	NULL	NULL

grade	count(distinct customer_id)
300	1
400	2

salesman 1 | customer 2 | orders 3 | Result 4 | salesman 5 | Result 6 | salesman_view 7 | salesman 8

salesman_id	name
1000	john
2000	ravi
NULL	NULL

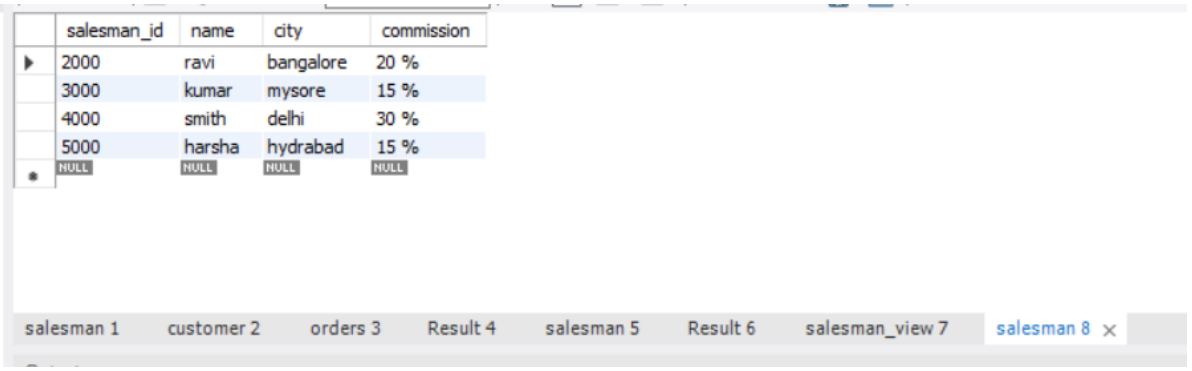
salesman 1 | customer 2 | orders 3 | Result 4 | salesman 5 | Result 6 | salesman_view 7 | salesman 8

salesman_id	name	cust_name	commission
1000	john	preethi	25 %
2000	ravi	preethi	20 %
1000	john	chethan	25 %
2000	ravi	chethan	20 %
1000	john	mamatha	25 %
2000	ravi	mamatha	20 %
3000	kumar	no match	15 %
4000	smith	no match	30 %
5000	harsha	no match	15 %

salesman 1 | customer 2 | orders 3 | Result 4 | salesman 5 | Result 6 | salesman_view 7 | salesman 8

ord_date	salesman_id	name
2004-05-17	1000	john
2020-01-17	2000	ravi
2024-02-17	2000	ravi
2013-04-17	3000	kumar
2009-03-17	2000	ravi

salesman 1 | customer 2 | orders 3 | Result 4 | salesman 5 | Result 6 | salesman_view 7 | salesman 8



salesman_id	name	city	commission
2000	ravi	bangalore	20 %
3000	kumar	mysore	15 %
4000	smith	delhi	30 %
5000	harsha	hydrabad	15 %
NULL	NULL	NULL	NULL

7. LAB PROGRAM 7 (BOOKS DATABASE):-

Queries:

```
create database book_dealerr;
use book_dealerr;
create table publisher (name varchar (20) primary key, phone long, address varchar (20));
create table book (book_id int primary key, title varchar (20), pub_year varchar (20), publisher_name varchar(20) , foreign key(publisher_name) references publisher(name) on delete cascade);
create table book_authors (author_name varchar (20), book_id int, foreign key(book_id) references book(book_id) on delete cascade, primary key (book_id, author_name));
create table library_branch (branch_id int primary key, branch_name varchar (50), address varchar (50));
create table book_copies (no_of_copies integer, book_id int, branch_id int, primary key (book_id, branch_id), foreign key(book_id) references book(book_id) on delete cascade,
foreign key(branch_id) references library_branch(branch_id) on delete cascade);
create table card(card_no int primary key);
create table book_lending (date_out date, due_date date, book_id int, branch_id int, card_no int, primary key (book_id, branch_id, card_no), foreign key(book_id) references book(book_id) on delete cascade,
foreign key(branch_id) references library_branch(branch_id) on delete cascade, foreign key(card_no) references card(card_no) on delete cascade );

insert into publisher values ('mcgraw-hill', 9989076587, 'bangalore');
insert into publisher values ('pearson', 9889076565, 'newdelhi');
insert into publisher values ('random house', 7455679345, 'hydrabad');
insert into publisher values ('hachette livre', 8970862340, 'chenai');
insert into publisher values ('grupo planeta', 7756120238, 'bangalore');
```

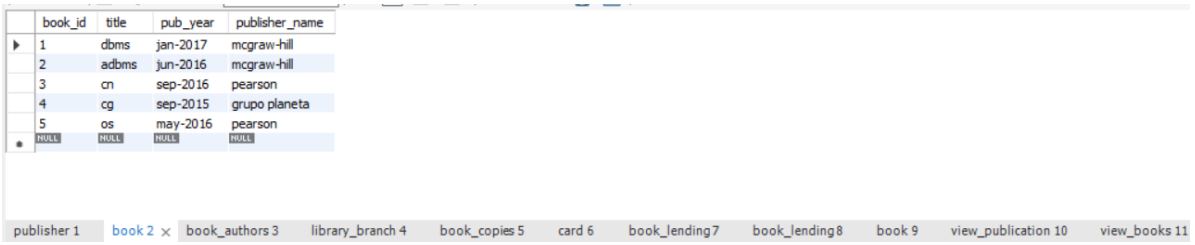
```
insert into book values (1,'dbms','jan-2017', 'mcgraw-hill');
insert into book values (2,'adbms','jun-2016', 'mcgraw-hill');
insert into book values (3,'cn','sep-2016', 'pearson');
insert into book values (4,'cg','sep-2015', 'grupo planeta');
insert into book values (5,'os','may-2016', 'pearson');

insert into book_authors values ('navathe', 1);
insert into book_authors values ('navathe', 2);
insert into book_authors values ('tanenbaum', 3);
insert into book_authors values ('edward angel', 4);
insert into book_authors values ('galvin', 5);

insert into library_branch values (10,'rr nagar','bangalore');
insert into library_branch values (11,'rnsit','bangalore');
insert into library_branch values (12,'rajaji nagar', 'bangalore');
insert into library_branch values (13,'nitte','mangalore');
insert into library_branch values (14,'manipal','udupi');

insert into book_copies values (10, 1, 10);
insert into book_copies values (5, 1, 11);
insert into book_copies values (2, 2, 12);
insert into book_copies values (5, 2, 13);
insert into book_copies values (7, 3, 14);
insert into book_copies values (1, 5, 10);
insert into book_copies values (3, 4, 11);

insert into card values (100);
insert into card values (101);
insert into card values (102);
insert into card values (103);
insert into card values (104);

insert into book_lending values ('17-01-01','17-06-01', 1, 10, 101);
insert into book_lending values ('17-01-11','17-03-11', 3, 14, 101);
insert into book_lending values ('17-02-21','17-04-21', 2, 13, 101);
insert into book_lending values ('17-03-15','17-07-15', 4, 11, 101);
insert into book_lending values ('17-04-12','17-05-12', 1, 11, 104);

select * from publisher;
select * from book;
select * from book_authors;
select * from library_branch;
select * from book_copies;
select * from card;
select * from book_lending;

select card_no from book_lending where date_out between '17-01-01' and '17-07-01' group by
card_no having count(*) > 3;
```

```
delete from book where book_id=3;
select * from book;

create view view_publication as select pub_year from book;
select * from view_publication;

create view view_books as select b.book_id, b.title, c.no_of_copies from book b, book_copies c,
library_branch l where b.book_id=c.book_id and c.branch_id=l.branch_id;
select * from view_books;
```

OUTPUT:-

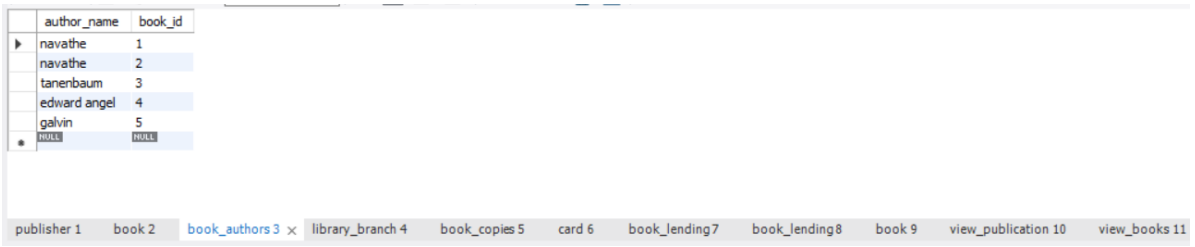
name	phone	address
grupo planeta	7756120238	bangalore
hachette livre	8970862340	chenai
mcgraw-hill	9989076587	bangalore
pearson	9889076565	newdelhi
random house	7455679345	hydrabad
NULL	NULL	NULL

publisher 1 × | book 2 | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending 7 | book_lending 8 | book 9 | view_publication 10 | view_books 11



book_id	title	pub_year	publisher_name
1	dbms	jan-2017	mcgraw-hill
2	adbms	jun-2016	mcgraw-hill
3	cn	sep-2016	pearson
4	cg	sep-2015	grupo planeta
5	os	may-2016	pearson
NULL	NULL	NULL	NULL

publisher 1 | book 2 × | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending 7 | book_lending 8 | book 9 | view_publication 10 | view_books 11



author_name	book_id
navathe	1
navathe	2
tanenbaum	3
edward angel	4
galvin	5
NULL	NULL

publisher 1 | book 2 | book_authors 3 × | library_branch 4 | book_copies 5 | card 6 | book_lending 7 | book_lending 8 | book 9 | view_publication 10 | view_books 11

branch_id	branch_name	address
10	rr nagar	bangalore
11	rnsit	bangalore
12	rajaji nagar	bangalore
13	nitte	mangalore
14	manipal	udupi
NULL	NULL	NULL

publisher 1 | book 2 | book_authors 3 | library_branch 4 × | book_copies 5 | card 6 | book_lending 7 | book_lending 8 | book 9 | view_publication 10 | view_books 11

no_of_copies	book_id	branch_id
10	1	10
5	1	11
2	2	12
5	2	13
7	3	14
3	4	11
1	5	10
NULL	NULL	NULL

publisher 1 | book 2 | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending7 | book_lending8 | book 9 | view_publication 10 | view_books 11

card_no
100
101
102
103
104
NULL

publisher 1 | book 2 | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending7 | book_lending8 | book 9 | view_publication 10 | view_books 11

date_out	due_date	book_id	branch_id	card_no
2017-01-01	2017-06-01	1	10	101
2017-04-12	2017-05-12	1	11	104
2017-02-21	2017-04-21	2	13	101
2017-01-11	2017-03-11	3	14	101
2017-03-15	2017-07-15	4	11	101
NULL	NULL	NULL	NULL	NULL

publisher 1 | book 2 | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending7 | book_lending8 | book 9 | view_publication 10 | view_books 11

card_no
101

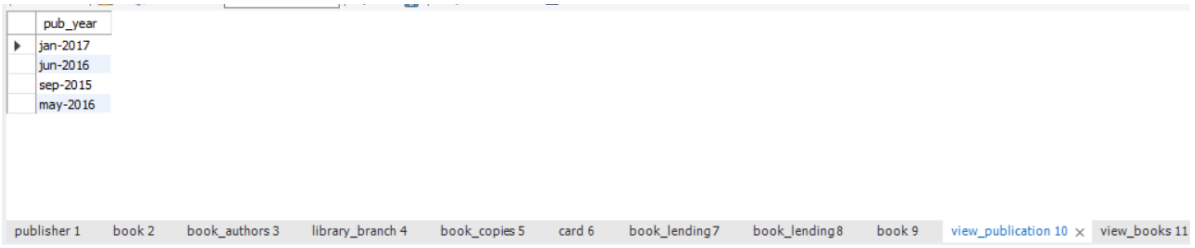
publisher 1 | book 2 | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending7 | book_lending8 | book 9 | view_publication 10 | view_books 11

card_no
101

publisher 1 | book 2 | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending7 | book_lending8 | book 9 | view_publication 10 | view_books 11

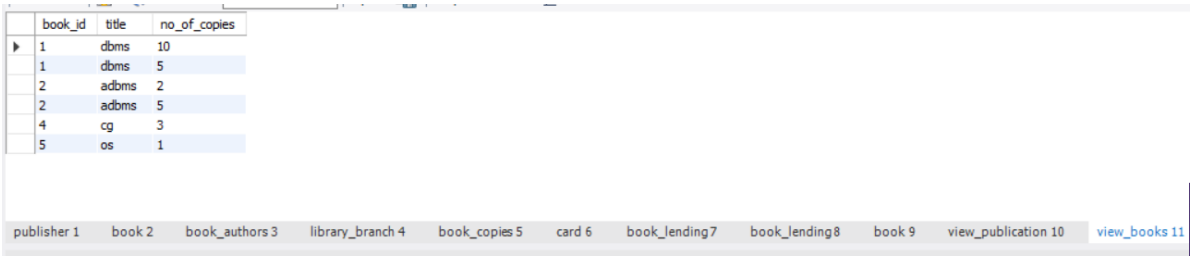
book_id	title	pub_year	publisher_name
1	dbms	jan-2017	mcgraw-hill
2	adbms	jun-2016	mcgraw-hill
4	cg	sep-2015	grupo planeta
5	os	may-2016	pearson
NULL	NULL	NULL	NULL

publisher 1 | book 2 | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending7 | book_lending8 | book 9 | view_publication 10 | view_books 11



pub_year
jan-2017
jun-2016
sep-2015
may-2016

publisher 1 | book 2 | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending 7 | book_lending 8 | book 9 | view_publication 10 | view_books 11



book_id	title	no_of_copies
1	dbms	10
1	dbms	5
2	adbms	2
2	adbms	5
4	cg	3
5	os	1

publisher 1 | book 2 | book_authors 3 | library_branch 4 | book_copies 5 | card 6 | book_lending 7 | book_lending 8 | book 9 | view_publication 10 | view_books 11

8. LAB PROGRAM 8 (ENVIROMENT DATABASE):-

Queries:

```
create database Stud_Enrollment;

use Stud_Enrollment;
create table student(regno varchar(30) primary key, name varchar(30), major varchar(30), bdate date);
create table course(courseno int primary key, cname varchar(30), dept varchar(30));
create table enroll(regno varchar(30), courseno int, sem int, marks int,primary key(regno,courseno), foreign key(regno) references student(regno), foreign key(courseno) references course(courseno));
create table text(book_isbn int,book_title varchar(20),publisher varchar(20),author varchar(20),primary key (book_isbn));
create table book_adoption(courseno int,sem int,book_isbn int,primary key (courseno,book_isbn),foreign key (courseno) references course (courseno),foreign key (book_isbn) references text(book_isbn));

insert into student values ('1pe11cs001', 'a', 'jr' , '19930912'),
('1pe11cs002','b','sr','19930924'),
('1pe11cs003','c','sr','19931127'),
('1pe11cs004','d','sr','19930413'),
('1pe11cs005','e','jr','19940824');

insert into course values (111,'os','cse'),
(112,'ec','ece'),
```

```
(113,'ss','ise'),
(114,'dbms','cse'),
(115,'signals','ece');

insert into text values (10,'database systems','pearson','schield'),
(900,'operating sys','pearson','leland'),
(901,'circuits','hall india','bob'),
(902,'system software','peterson','jacob'),
(903,'scheduling','pearson','patil'),
(904,'database systems','pearson','jacob'),
(905,'database manager','pearson','bob'),
(906,'signals','hall india','sumit');

insert into enroll values ('1pe11cs001',115,3,100),
('1pe11cs002',114,5,100),
('1pe11cs003',113,5,100),
('1pe11cs004',111,5,100),
('1pe11cs005',112,3,100);

insert into book_adoption values (111,5,900),
(111,5,903),
(111,5,904),
(112,3,901),
(113,3,10),
(114,5,905),
(113,5,902),
(115,3,906);

select * from student;
select * from course;
select * from text;
select * from enroll;
select * from book_adoption;

select c.courseno,t.book_isbn,t.book_title from course c, book_adoption ba, text t where
c.courseno=ba.courseno and ba.book_isbn=t.book_isbn and c.dept='cse' and
2 < (select count(book_isbn)from book_adoption b where c.courseno = b.courseno) order by t.book_title;

select distinct c.dept from course c where c.dept in ( select c.dept from course c,book_adoption b,text t
where c.courseno=b.courseno and t.book_isbn=b.book_isbn and t.publisher='pearson')
and c.dept not in (select c.dept from course c,book_adoption b,text t where c.courseno=b.courseno and
t.book_isbn=b.book_isbn and t.publisher != 'pearson');
```

OUTPUT:-

regno	name	major	bdate
1pe11cs001	a	jr	1993-09-12
1pe11cs002	b	sr	1993-09-24
1pe11cs003	c	sr	1993-11-27
1pe11cs004	d	sr	1993-04-13
1pe11cs005	e	jr	1994-08-24
NULL	NULL	NULL	NULL

student 1 × | course 2 | text 3 | enroll 4 | book_adoption 5 | Result 6 | course 7

courseno	cname	dept
111	os	cse
112	ec	ece
113	ss	ise
114	dbms	cse
115	signals	ece
NULL	NULL	NULL

student 1 | course 2 × | text 3 | enroll 4 | book_adoption 5 | Result 6 | course 7

Output

book_isbn	book_title	publisher	author
10	database systems	pearson	schield
900	operating sys	pearson	leland
901	circuits	hall india	bob
902	system software	peterson	jacob
903	scheduling	pearson	patil
904	database systems	pearson	jacob
905	database manager	pearson	bob
906	signals	hall india	sumit
NULL	NULL	NULL	NULL

student 1 | course 2 | text 3 × | enroll 4 | book_adoption 5 | Result 6 | course 7

regno	courseno	sem	marks
1pe11cs001	115	3	100
1pe11cs002	114	5	100
1pe11cs003	113	5	100
1pe11cs004	111	5	100
1pe11cs005	112	3	100
NULL	NULL	NULL	NULL

student 1 course 2 text 3 enroll 4 × book_adoption 5 Result 6 course 7

courseno	book_isbn	book_title
111	904	database systems
111	900	operating sys
111	903	scheduling

student 1 course 2 text 3 enroll 4 book_adoption 5 Result 6 × course 7

Output

courseno	sem	book_isbn
111	5	900
111	5	903
111	5	904
112	3	901
113	3	10
113	5	902
114	5	905
115	3	906
NULL	NULL	NULL

student 1 course 2 text 3 enroll 4 book_adoption 5 × Result 6 course 7

Output

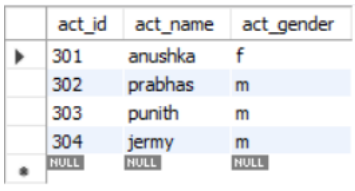
9. LAB PROGRAM 9 (MOVIE DATABASE):-

Queries:

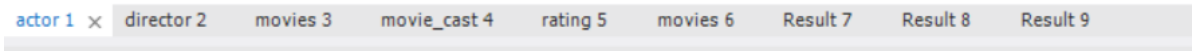
```
create database m_movie;
use m_movie;
create table actor ( act_id int, act_name varchar (20), act_gender char(1), primary key (act_id));
create table director ( dir_id int, dir_name varchar (20), dir_phone long, primary key (dir_id));
create table movies ( mov_id int, mov_title varchar (25), mov_year int, mov_lang varchar (12), dir_id int,
primary key (mov_id), foreign key (dir_id) references director (dir_id));
create table movie_cast ( act_id int, mov_id int, role varchar (10), primary key (act_id, mov_id), foreign key
(act_id) references actor (act_id), foreign key (mov_id) references movies (mov_id));
create table rating ( mov_id int, rev_stars varchar (25), primary key (mov_id), foreign key (mov_id)
references movies (mov_id));

insert into actor values (301,'anushka','f');
insert into actor values (302,'prabhas','m');
insert into actor values (303,'punith','m');
insert into actor values (304,'jermy','m');

insert into director values (60,'rajamouli', 8751611001);
insert into director values (61,'hitchcock', 7766138911);
insert into director values (62,'faran', 9986776531);
insert into director values (63,'steven spielberg', 8989776530);

insert into movies values (1001,'bahubali-2', 2017, 'telagu', 60);
insert into movies values (1002,'bahubali-1', 2015, 'telagu', 60);
insert into movies values (1003,'akash', 2008, 'kannada', 61);
insert into movies values (1004,'war horse', 2011, 'english', 63);

insert into movie_cast values (301, 1002, 'heroine');
insert into movie_cast values (301, 1001, 'heroine');
```

```
insert into movie_cast values (303, 1003, 'hero');
insert into movie_cast values (303, 1002, 'guest');
insert into movie_cast values (304, 1004, 'hero');

insert into rating values (1001, 4);
insert into rating values (1002, 2);
insert into rating values (1003, 5);
insert into rating values (1004, 4);

select * from actor;
select * from director;
select * from movies;
select * from movie_cast;
select * from rating;

select mov_title from movies where dir_id in (select dir_id from director where dir_name = 'hitchcock');

select mov_title from movies m, movie_cast mv where m.mov_id=mv.mov_id and act_id in (select act_id
from movie_cast group by act_id having count(act_id) > 1) group by mov_title having count(*)>1;

select a.act_name, c.mov_title, c.mov_year from actor a, movie_cast b, movies c where a.act_id=b.act_id
and b.mov_id=c.mov_id and c.mov_year not between 2000 and 2015;

select mov_title, max(rev_stars) from movies inner join rating using(mov_id) group by mov_title having
max(rev_stars) > 0 order by mov_title;

update rating set rev_stars=5 where mov_id in (select mov_id from movies where dir_id in (select dir_id
from director where dir_name = 'steven spielberg'));
```

OUTPUT:-



act_id	act_name	act_gender
301	anushka	f
302	prabhas	m
303	punith	m
304	jermy	m
NULL	NULL	NULL



dir_id	dir_name	dir_phone
60	rajamouli	8751611001
61	hitchcock	7766138911
62	faran	9986776531
63	steven spielberg	8989776530
NULL	NULL	NULL

actor 1 | director 2 | movies 3 | movie_cast 4 | rating 5 | movies 6 | Result 7 | Result 8 | Result 9

mov_id	mov_title	mov_year	mov_lang	dir_id
1001	bahubali-2	2017	telagu	60
1002	bahubali-1	2015	telagu	60
1003	akash	2008	kannada	61
1004	war horse	2011	english	63
NULL	NULL	NULL	NULL	NULL

actor 1 | director 2 | movies 3 | movie_cast 4 | rating 5 | movies 6 | Result 7 | Result 8 | Result 9

act_id	mov_id	role
301	1001	heroine
301	1002	heroine
303	1002	guest
303	1003	hero
304	1004	hero
NULL	NULL	NULL

actor 1 | director 2 | movies 3 | movie_cast 4 | rating 5 | movies 6 | Result 7 | Result 8 | Result 9

mov_id	rev_stars
1001	4
1002	2
1003	5
1004	4
NULL	NULL

actor 1 | director 2 | movies 3 | movie_cast 4 | rating 5 | movies 6 | Result 7 | Result 8 | Result 9

mov_title
bahubali-1

actor 1 director 2 movies 3 movie_cast 4 rating 5 movies 6 Result 7 × Result 8 Result 9

act_name	mov_title	mov_year
anushka	bahubali-2	2017

actor 1 director 2 movies 3 movie_cast 4 rating 5 movies 6 Result 7 Result 8 × Result 9

mov_title	max(rev_stars)
akash	5
bahubali-1	2
bahubali-2	4
war horse	4

actor 1 director 2 movies 3 movie_cast 4 rating 5 movies 6 Result 7 Result 8 Result 9 ×

mov_title
akash

actor 1 director 2 movies 3 movie_cast 4 rating 5 movies 6 × Result 7 Result 8 Result 9

10. LAB PROGRAM 10 (COLLEGE DATABASE):-

Queries:

```
create database college;
use college;

CREATE TABLE STUDENT (
USN VARCHAR (10) PRIMARY KEY,
SNAME VARCHAR (25),
ADDRESS VARCHAR (25),
PHONE INT (10),
GENDER CHAR (1));

CREATE TABLE SEMSEC (
SSID VARCHAR (5) PRIMARY KEY,
SEM INT (2),
SEC CHAR (1));

CREATE TABLE CLASS (
USN VARCHAR (10),
SSID VARCHAR (5),
PRIMARY KEY (USN, SSID),
FOREIGN KEY (USN) REFERENCES STUDENT (USN),
FOREIGN KEY (SSID) REFERENCES SEMSEC (SSID));

CREATE TABLE SUBJECT (
SUBCODE VARCHAR (8),
TITLE VARCHAR (20),
SEM INT(2),
CREDITS INT (2),
PRIMARY KEY (SUBCODE));

CREATE TABLE IAMARKS (
USN VARCHAR (10),
SUBCODE VARCHAR (8),
SSID VARCHAR (5),
TEST1 INT(2),
TEST2 INT(2),
TEST3 INT(2),
FINALIA INT(2),
PRIMARY KEY (USN, SUBCODE, SSID),
FOREIGN KEY (USN) REFERENCES STUDENT (USN),
FOREIGN KEY (SUBCODE) REFERENCES SUBJECT (SUBCODE),
FOREIGN KEY (SSID) REFERENCES SEMSEC (SSID));

desc student;
```

```
desc semsec;
desc class;
desc subject;
desc iamarks;

INSERT INTO STUDENT VALUES ('1RN13CS020','AKSHAY','BELAGAVI', 1232654578,'M');
INSERT INTO STUDENT VALUES ('1RN13CS062','SANDHYA','BENGALURU', 1232654578,'F');
INSERT INTO STUDENT VALUES ('1RN13CS091','TEESHA','BENGALURU', 1232654578,'F');
INSERT INTO STUDENT VALUES ('1RN13CS066','SUPRIYA','MANGALURU', 1232654578,'F');
INSERT INTO STUDENT VALUES ('1RN14CS010','ABHAY','BENGALURU', 1232654578,'M');
INSERT INTO STUDENT VALUES ('1RN14CS032','BHASKAR','BENGALURU', 1232654578,'M');
INSERT INTO STUDENT VALUES ('1RN14CS025','ASMI','BENGALURU', 1232654578,'F');
INSERT INTO STUDENT VALUES ('1RN15CS011','AJAY','TUMKUR', 1232654578,'M');
INSERT INTO STUDENT VALUES ('1RN15CS029','CHITRA','DAVANGERE', 1232654578,'F');
INSERT INTO STUDENT VALUES ('1RN15CS045','JEEVA','BELLARY', 1232654578,'M');
INSERT INTO STUDENT VALUES ('1RN15CS091','SANTOSH','MANGALURU', 1232654578,'M');
INSERT INTO STUDENT VALUES ('1RN16CS045','ISMAIL','KALBURGI', 1232654578,'M');
INSERT INTO STUDENT VALUES ('1RN16CS088','SAMEERA','SHIMOGA', 1232654578,'F');
INSERT INTO STUDENT VALUES ('1RN16CS122','VINAYAKA','CHIKAMAGALUR',
1232654578,'M');
select * from student;

INSERT INTO SEMSEC VALUES ('CSE8A', 8,'A');
INSERT INTO SEMSEC VALUES ('CSE8B', 8,'B');
INSERT INTO SEMSEC VALUES ('CSE8C', 8,'C');
INSERT INTO SEMSEC VALUES ('CSE7A', 7,'A');
INSERT INTO SEMSEC VALUES ('CSE7B', 7,'B');
INSERT INTO SEMSEC VALUES ('CSE7C', 7,'C');
INSERT INTO SEMSEC VALUES ('CSE6A', 6,'A');
INSERT INTO SEMSEC VALUES ('CSE6B', 6,'B');
INSERT INTO SEMSEC VALUES ('CSE6C', 6,'C');
INSERT INTO SEMSEC VALUES ('CSE5A', 5,'A');
INSERT INTO SEMSEC VALUES ('CSE5B', 5,'B');
INSERT INTO SEMSEC VALUES ('CSE5C', 5,'C');
INSERT INTO SEMSEC VALUES ('CSE4A', 4,'A');
INSERT INTO SEMSEC VALUES ('CSE4B', 4,'B');
INSERT INTO SEMSEC VALUES ('CSE4C', 4,'C');
INSERT INTO SEMSEC VALUES ('CSE3A', 3,'A');
INSERT INTO SEMSEC VALUES ('CSE3B', 3,'B');
INSERT INTO SEMSEC VALUES ('CSE3C', 3,'C');
INSERT INTO SEMSEC VALUES ('CSE2A', 2,'A');
INSERT INTO SEMSEC VALUES ('CSE2B', 2,'B');
INSERT INTO SEMSEC VALUES ('CSE2C', 2,'C');
INSERT INTO SEMSEC VALUES ('CSE1A', 1,'A');
INSERT INTO SEMSEC VALUES ('CSE1B', 1,'B');
INSERT INTO SEMSEC VALUES ('CSE1C', 1,'C');
select * from semsec;

INSERT INTO CLASS VALUES ('1RN13CS020','CSE8A');
```

```
INSERT INTO CLASS VALUES ('1RN13CS062','CSE8A');
INSERT INTO CLASS VALUES ('1RN13CS066','CSE8B');
INSERT INTO CLASS VALUES ('1RN13CS091','CSE8C');
INSERT INTO CLASS VALUES ('1RN14CS010','CSE7A');
INSERT INTO CLASS VALUES ('1RN14CS025','CSE7A');
INSERT INTO CLASS VALUES ('1RN14CS032','CSE7A');
INSERT INTO CLASS VALUES ('1RN15CS011','CSE4A');
INSERT INTO CLASS VALUES ('1RN15CS029','CSE4A');
select * from class;

INSERT INTO SUBJECT VALUES ('10CS81','ACA', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS82','SSM', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS83','NM', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS84','CC', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS85','PW', 8, 4);
INSERT INTO SUBJECT VALUES ('10CS71','OOAD', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS72','ECS', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS73','PTW', 7, 4);
INSERT INTO SUBJECT VALUES ('10CS74','DWDM', 7, 4);
select * from subject;

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES
('1RN13CS091','10CS81','CSE8C', 15, 16, 18);
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES
('1RN13CS091','10CS82','CSE8C', 12, 19, 14);
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES
('1RN13CS091','10CS83','CSE8C', 19, 15, 20);
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES
('1RN13CS091','10CS84','CSE8C', 20, 16, 19);
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES
('1RN13CS091','10CS85','CSE8C', 15, 15, 12);
select * from iamarks;

/*  List all the student details studying in fourth semester ‘A’ section */

SELECT S.*, SS.SEM, SS.SEC
FROM STUDENT S, SEMSEC SS, CLASS C
WHERE S.USN = C.USN AND SS.SSID = C.SSID AND SS.SEM = 4 AND SS.SEC='A';

/*  Compute the total number of male and female students in each semester and in each section */

SELECT SS.SEM, SS.SEC, S.GENDER, COUNT(S.GENDER) AS COUNT
FROM STUDENT S, SEMSEC SS, CLASS C
WHERE S.USN = C.USN AND
SS.SSID = C.SSID
GROUP BY SS.SEM, SS.SEC, S.GENDER
ORDER BY SEM;

/*  Create a view of Test1 marks of student USN ‘1BI15CS101’ in all subjects */
```

```
CREATE VIEW STU_TEST1_MARKS_VIEW
AS
SELECT TEST1, SUBCODE
FROM IAMARKS
WHERE USN = '1RN13CS091';
select * from STU_TEST1_MARKS_VIEW;

/*  Categorize students based on the following criterion:
If FinalIA = 17 to 20 then CAT = ‘Outstanding’
If FinalIA = 12 to 16 then CAT = ‘Average’
If FinalIA< 12 then CAT = ‘Weak’
Give these details only for 8th semester A, B, and C section students */

SELECT S.USN,S.SNAME,S.ADDRESS,S.PHONE,S.GENDER,
(CASE
WHEN IA.FINALIA BETWEEN 17 AND 20 THEN 'OUTSTANDING'
WHEN IA.FINALIA BETWEEN 12 AND 16 THEN 'AVERAGE'
ELSE 'WEAK'
END) AS CAT
FROM STUDENT S, SEMSEC SS, IAMARKS IA, SUBJECT SUB
WHERE S.USN = IA.USN AND
SS.SSID = IA.SSID AND
SUB.SUBCODE = IA.SUBCODE AND
SUB.SEM = 8;
commit
```

OUTPUT:-

Field	Type	Null	Key	Default	Extra
USN	varchar(10)	NO	PRI	NULL	
SNAME	varchar(25)	YES		NULL	
ADDRESS	varchar(25)	YES		NULL	
PHONE	int	YES		NULL	
GENDER	char(1)	YES		NULL	

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12 | STU_TEST1_MARKS_VIEW 13

Field	Type	Null	Key	Default	Extra
SSID	varchar(5)	NO	PRI	NULL	
SEM	int	YES		NULL	
SEC	char(1)	YES		NULL	

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12

Field	Type	Null	Key	Default	Extra
USN	varchar(10)	NO	PRI	NULL	
SSID	varchar(5)	NO	PRI	NULL	

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12 | STU_TEST1_MARKS_VIE

Field	Type	Null	Key	Default	Extra
SUBCODE	varchar(8)	NO	PRI	NULL	
TITLE	varchar(20)	YES		NULL	
SEM	int	YES		NULL	
CREDITS	int	YES		NULL	

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12 | STU_TEST1_MARKS_

TEST1	SUBCODE
15	10CS81
12	10CS82
19	10CS83
20	10CS84
15	10CS85

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12 | STU_TEST1_MARKS_VIEW | Read C

Output

SEM	SEC	GENDER	COUNT
4	A	F	1
4	A	M	1
7	A	F	1
7	A	M	2
8	A	F	1
8	A	M	1
8	B	F	1
8	C	F	1

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12 × | STU_TEST1_MARKS_VIE

Output

USN	SNAME	ADDRESS	PHONE	GENDER	SEM	SEC
1RN15CS011	AJAY	TUMKUR	1232654578	M	4	A
1RN15CS029	CHITRA	DAVANGERE	1232654578	F	4	A

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 × | Result 12 | STU_TEST1_MARKS_VIE

USN	SUBCODE	SSID	TEST1	TEST2	TEST3	FINALIA
1RN13CS091	10CS81	CSE8C	15	16	18	NULL
1RN13CS091	10CS82	CSE8C	12	19	14	NULL
1RN13CS091	10CS83	CSE8C	19	15	20	NULL
1RN13CS091	10CS84	CSE8C	20	16	19	NULL
1RN13CS091	10CS85	CSE8C	15	15	12	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 × | Result 11 | Result 12 | STU_TEST1_MARK

SUBCODE	TITLE	SEM	CREDITS
10CS71	OOAD	7	4
10CS72	ECS	7	4
10CS73	PTW	7	4
10CS74	DWDM	7	4
10CS81	ACA	8	4
10CS82	SSM	8	4
10CS83	NM	8	4
10CS84	CC	8	4
10CS85	PW	8	4
NULL	NULL	NULL	NULL

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12 | STU_TEST1_MARKS_VIE

SSID	SEM	SEC
CSE1A	1	A
CSE1B	1	B
CSE1C	1	C
CSE2A	2	A
CSE2B	2	B
CSE2C	2	C
CSE3A	3	A
CSE3B	3	B
CSE3C	3	C
CSE4A	4	A
CSE4B	4	B
CSE4C	4	C
CSE5A	5	A
CSE5B	5	B
CSE5C	5	C
CSE6A	6	A
CSE6B	6	B
CSE6C	6	C
CSE7A	7	A
CSE7B	7	B

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12 | STU_TEST1_MARKS_V

USN	SNAME	ADDRESS	PHONE	GENDER
1RN13CS020	AKSHAY	BELAGAVI	1232654578	M
1RN13CS062	SANDHYA	BENGALURU	1232654578	F
1RN13CS066	SUPRIYA	MANGALURU	1232654578	F
1RN13CS091	TEESHA	BENGALURU	1232654578	F
1RN14CS010	ABHAY	BENGALURU	1232654578	M
1RN14CS025	ASMI	BENGALURU	1232654578	F
1RN14CS032	BHASKAR	BENGALURU	1232654578	M
1RN15CS011	AJAY	TUMKUR	1232654578	M
1RN15CS029	CHITRA	DAVANGERE	1232654578	F
1RN15CS045	JEEVA	BELLARY	1232654578	M
1RN15CS091	SANTOSH	MANGALURU	1232654578	M
1RN16CS045	ISMAIL	KALBURGI	1232654578	M
1RN16CS088	SAMEERA	SHIMOGA	1232654578	F
1RN16CS122	VINAYAKA	CHIKAMAG...	1232654578	M
NULL	NULL	NULL	NULL	NULL

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12 | STU_TEST1_MARKS_VIEW

Field	Type	Null	Key	Default	Extra
USN	varchar(10)	NO	PRI	NULL	
SUBCODE	varchar(8)	NO	PRI	NULL	
SSID	varchar(5)	NO	PRI	NULL	
TEST1	int	YES		NULL	
TEST2	int	YES		NULL	
TEST3	int	YES		NULL	
FINALIA	int	YES		NULL	

Result 1 | Result 2 | Result 3 | Result 4 | Result 5 | student 6 | semsec 7 | class 8 | subject 9 | iamarks 10 | Result 11 | Result 12 | STU_TEST1_MARKS_VIE