DBMS LAB RECORD

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LAB1-INSURANCE DATABASE

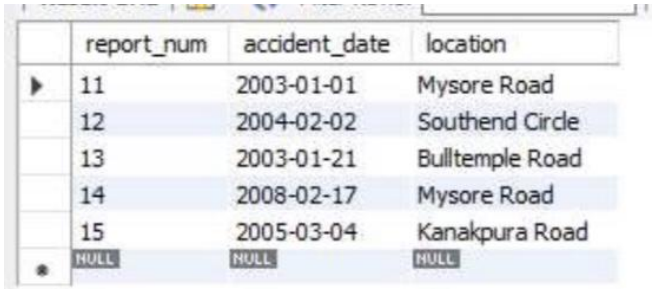
```
create database insurance;
use insurance;

create table person(driver_id varchar(5),name varchar(10),address varchar(20),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));
desc accident;

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 Naga');
commit;
select * from person;
```

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

```
insert into car values('KA031181','Lancer',1957);
insert into car values('KA041702','Audi',2005);
insert into car values('KA052250','Indica',1990);
insert into car values('KA053408','Honda',2008);
insert into car values('KA095477','Toyota',1998);
commit;
select * from car;
```

reg_num	model	year
KA031181	Lancer	1957
KA041702	Audi	2005
KA052250	Indica	1990
KA053408	Honda	2008
KA095477	Toyota	1998
NULL	NULL	NULL

```
insert into accident values(11,'2003-01-01','Mysore Road');
insert into accident values(12,'2004-02-02','Southend Circle');
insert into accident values(13,'2003-01-21','Bulltemple Road');
insert into accident values(14,'2008-02-17','Mysore Road');
insert into accident values(15,'2005-03-04','Kanakpura Road');
commit;
select * from accident;
```



report_num	accident_date	location
11	2003-01-01	Mysore Road
12	2004-02-02	Southend Circle
13	2003-01-21	Bulltemple Road
14	2008-02-17	Mysore Road
15	2005-03-04	Kanakpura Road
NULL	NULL	NULL

```
insert into owns values('A01','KA031181');
insert into owns values('A02','KA041702');
insert into owns values('A03','KA052250');
```

```
insert into owns values('A04','KA053408');
insert into owns values('A05','KA095477');
commit;
select * from owns;
```

Result Grid | Filter

driver_id	reg_num
A01	KA031181
A02	KA041702
A03	KA052250
A04	KA053408
A05	KA095477
NULL	NULL

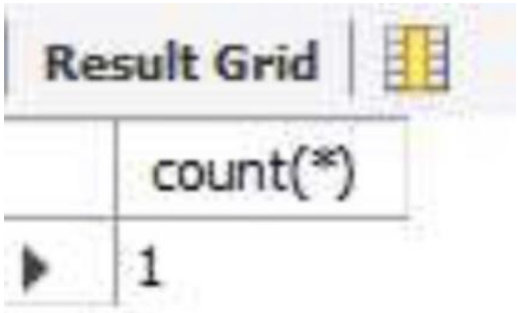
```
insert into participated values('A01','KA031181',11,10000);
insert into participated values('A02','KA041702',12,50000);
insert into participated values('A03','KA052250',13,25000);
insert into participated values('A04','KA053408',14,3000);
insert into participated values('A05','KA095477',15,5000);
commit;
select * from participated;
```

driver_id	reg_num	report_num	damage_amou
A01	KA031181	11	10000
A02	KA041702	12	50000
A03	KA052250	13	25000
A04	KA053408	14	3000
A05	KA095477	15	5000
NULL	NULL	NULL	NULL

```
update participated set damage_amount=25000 where report_num=12;
insert into accident values(16,'2009-04-03','Kanakpura Road');
select * from accident;
```

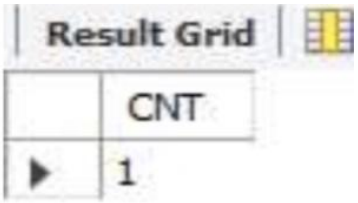
report_num	accident_date	location
11	2003-01-01	Mysore Road
12	2004-02-02	Southend Circle
13	2003-01-21	Bulltemple Road
14	2008-02-17	Mysore Road
15	2005-03-04	Kanakpura Road
16	2009-04-03	Kanakpura Road

```
select count(*) from accident where year(accident_date)=2008;
```



	count(*)
▶	1

select count(report_num) CNT from car c,participated p where c.reg_num=p.reg_num and model='Lancer';

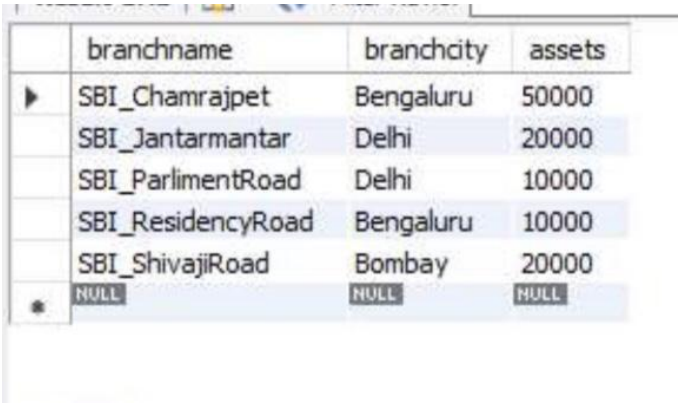


	CNT
▶	1

LAB2-
BANKING ENTERPRISE DATABASE

```
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;
select * from branch;
```



branchname	branchcity	assets
SBI_Chamrajpet	Bengaluru	50000
SBI_Jantarmantar	Delhi	20000
SBI_ParlimentRoad	Delhi	10000
SBI_ResidencyRoad	Bengaluru	10000
SBI_ShivajiRoad	Bombay	20000
NULL	NULL	NULL

```
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;
select * from bank_account;
```

Accno	branchname	balance
1	SBI_Chamrajpet	2000
2	SBI_ResidencyRoad	5000
4	SBI_ParlimentRoad	9000
5	SBI_Jantarmantar	8000
8	SBI_ResidencyRoad	4000
9	SBI_ParlimentRoad	3000
10	SBI_ResidencyRoad	5000
11	SBI_Jantarmantar	2000

```
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;
select * from bank_customer;
```

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

```
insert into depositer values('Avinash', 1);
insert into depositer values('Dinesh', 2);
insert into depositer values('Nikil', 4);
insert into depositer values('Ravi', 5);
insert into depositer values('Avinash', 8);
```

```
insert into depositer values('Nikil', 9);
insert into depositer values('Dinesh', 10);
insert into depositer values('Nikil', 11);
commit;
select * from depositer;
```

CustomerName	Accno
Avinash	1
Dinesh	2
Nikil	4
Ravi	5
Avinash	8
Nikil	9
Dinesh	10
Nikil	11

```
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 loan;
```

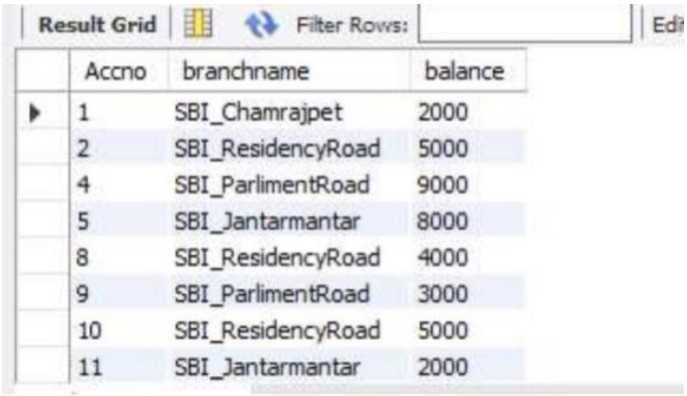
loannumber	branchname	Amount
1	SBI_Chamrajpet	10000
2	SBI_ResidencyRoad	20000
3	SBI_ShivajiRoad	30000
4	SBI_ParlimentRoad	40000
5	SBI_Jantarmantar	30000
NULL	NULL	NULL

```
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);

select distinct d.customer_name from depositer d where exists(select * from bank_account ba where ba.accno=d.accno and exists (select * from branch b where b.branch_name = ba.branch_name and b.branch_city='Delhi'));

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

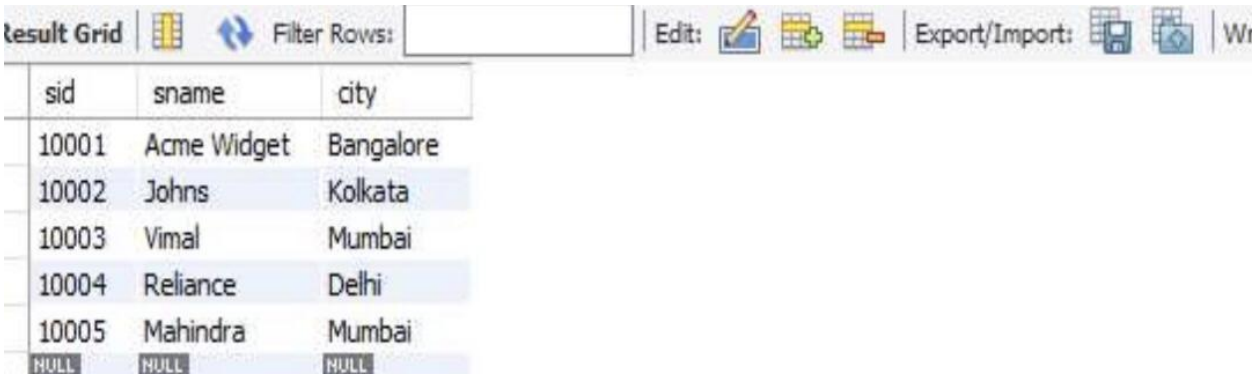


LAB3-SUPPLIER DATABASE

create database Supplier;
use Supplier;

create table Suppliers(
sid varchar(20) ,
sname varchar(20),

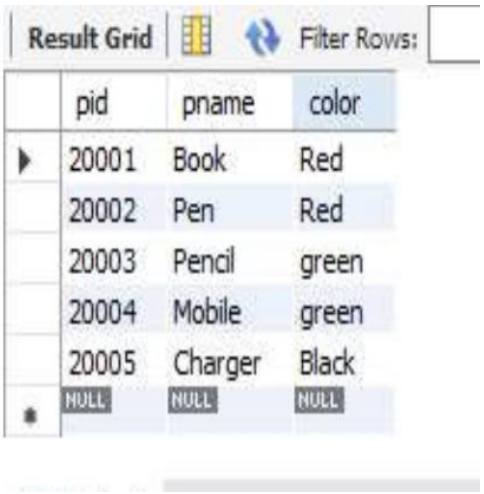
```
city varchar(20),
primary key(sid)
);
desc Suppliers;

create table Parts(
pid integer,
pname varchar(20),
color varchar(20),
primary key(pid)
);
desc Parts;

create table Catalog(
sid varchar(20),
pid integer,
cost real,
primary key(sid,pid),
foreign key(sid) references Suppliers(sid),
foreign key(pid) references Parts(pid)
);
desc Catalog;

insert into Suppliers values(10001,'Acme Widget','Bangalore');
insert into Suppliers values(10002,'Johns','Kolkata');
insert into Suppliers values(10003,'Vimal','Mumbai');
insert into Suppliers values(10004,'Reliance','Delhi');
insert into Suppliers values(10005,'Mahindra’,'Mumbai’);
select *from Suppliers;
```



sid	sname	city
10001	Acme Widget	Bangalore
10002	Johns	Kolkata
10003	Vimal	Mumbai
10004	Reliance	Delhi
10005	Mahindra	Mumbai
NULL	NULL	NULL

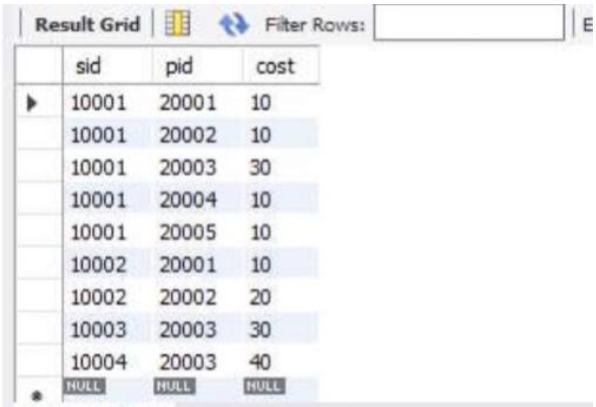
```
insert into Parts values(20001,'Book','Red');
insert into Parts values(20002,'Pen','Red');
insert into Parts values(20003,'Pencil','green');
insert into Parts values(20004,'Mobile','green');
```

```
insert into Parts values(20005,'Charger','Black');
select *from Parts;
```



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

```
insert into Catalog values(10001,20001,10);
insert into Catalog values(10001,20002,10);
insert into Catalog values(10001,20003,30);
insert into Catalog values(10001,20004,10);
insert into Catalog values(10001,20005,10);
insert into Catalog values(10002,20001,10);
insert into Catalog values(10002,20002,20);
insert into Catalog values(10003,20003,30);
insert into Catalog values(10004,20003,40);
select *from Catalog;
```



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

```
select distinct P.pname from Parts P, Catalog c where P.pid=C.pid;
```

Result Grid | Filter Rows:

pname
Book
Pen
Pencil
Mobile
Charger

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

sname
Acme Widget

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)));

sname
Acme Widget
Johns

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');

pname
Mobile
Charger

select distinct c.sid from Catalog c where c.cost >(select avg(ca.cost) from Catalog ca where ca.pid=c.pid);

sid
10002
10004

select s.sname ,p.pid from Suppliers s, Catalog c, Parts p where s.sid=c.sid and c.pid =p.pid and c.cost=(select max(ca.cost) from catalog ca where ca.pid=p.pid);

Result Grid | Filter Rows: | Export: | Wrap Cell Cont

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

LAB4-
STUDENT FACULTY DATABASE

```
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));
desc student;

create table faculty(fid int, fname varchar(20), deptid int,primary key(fid));
desc faculty;

create table class(cname varchar(20), meetsat timestamp, room varchar(10), fid int,primary key
(cname),foreign key(fid) references faculty(fid));
desc class;

create table enrolled(snum int, cname varchar(20),primary key(snum,cname),
foreign key(snum) references student(snum),
foreign key(cname) references class(cname));
desc enrolled;

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);
select * from student;
```

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

```
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);
select * from faculty;
```

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

```
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', 12);
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);
select * from class;
```

cname	meets_at	room	fid
class1	2012-11-15 10:15:16	R1	14
class10	2012-11-15 10:15:16	R128	14
class2	2012-11-15 10:15:20	R2	12
class3	2012-11-15 10:15:25	R3	11
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
class7	2012-11-15 10:10:10	R3	14
NULL	NULL	NULL	NULL

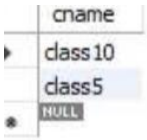
```
insert into enrolled values(1, 'class1');
insert into enrolled values(2, 'class1');
insert into enrolled values(3, 'class3');
insert into enrolled values(4, 'class3');
insert into enrolled values(5, 'class4');
insert into enrolled values(1, 'class5');
insert into enrolled values(2, 'class5');
insert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

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

```
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';
```

Sname
Tom

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

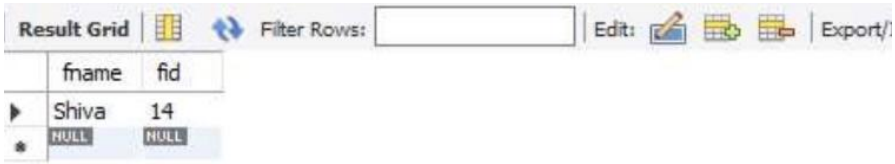


cname
class10
class5
NULL

```
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.meets_at = C2.meets_at);
```

sname
Rahul

```
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));
```



fname	fid
Shiva	14
NULL	NULL

```
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);
```


```
SELECT DISTINCT S.sname
FROM student S
WHERE S.snum NOT IN (SELECT E.snum
FROM enrolled E );
```


```
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.lvl, S1.age
HAVING COUNT(*) >= ALL (SELECT COUNT(*)
FROM Student S2
WHERE s1.age = S2.age
GROUP BY S2.lvl, S2.age));
```

LAB5-AIRLINE FLIGHT DATABASE

```
create database Airline_flight;
use Airline_flight;

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);
select * from flights;
```

flno	frompiace	topiace	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

```
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);
select * from aircraft;
```

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

```
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);
select * from employees;
```

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

```
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);
select * from certified;
```

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

```
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));
```

747
Dreamliner
Dream
707

```
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;
```

3500	701
120000	702

```
select ename from employees where salary <(
select min(price) from flights where fromplace='Bangalore' and toplace='Frankfurt');
```

ename
A
E

```
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;
```

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

```
select ename from employees where eid in(
select eid from certified where aid in(
select aid from aircraft where aname = 'Boeing'));
```

ename
A

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

aname
747
Dreamliner
Boeing
Dream

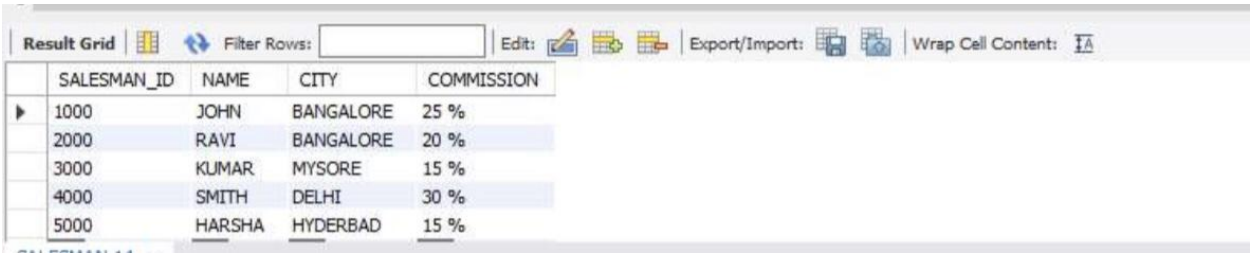
```
select F.flno, F.departs
from flights F
Where F.flno in ( ( select F0.flno
 from flights F0
 where F0.fromplace = 'Bangalore' and F0.toplace = 'Kolkata'
 and extract(hour from F0.arrives) < 18 )
 union
( select F0.flno
 from flights F0, flights F1
 where F0.fromplace = 'Bangalore' and F0.toplace <> '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));
```

fino	departs
102	2013-05-05 07:15:31
106	2013-05-05 01:15:30

LAB 6- ORDER DATABASE

```
create database order;
use order;

create table salesman (
        salesman_id int(4),
        name varchar (20),
        city varchar (20),
        commission varchar (20),
        primary key (salesman_id)
);
desc salesman;
create table customer (
        customer_id int(4),
        cust_name varchar (20),
        city varchar (20),
        grade int (3),
   salesman_id int(4),
        primary key (customer_id),
        foreign key (salesman_id) references salesman(salesman_id) on delete set null
);
desc customer;
create table orders (
        ord_no int (5),
        purchase_amt int (10),
        ord_date date,
   customer_id int(4),
        salesman_id int(4),
        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
);
desc orders;
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 %');
select * from salesman;
```

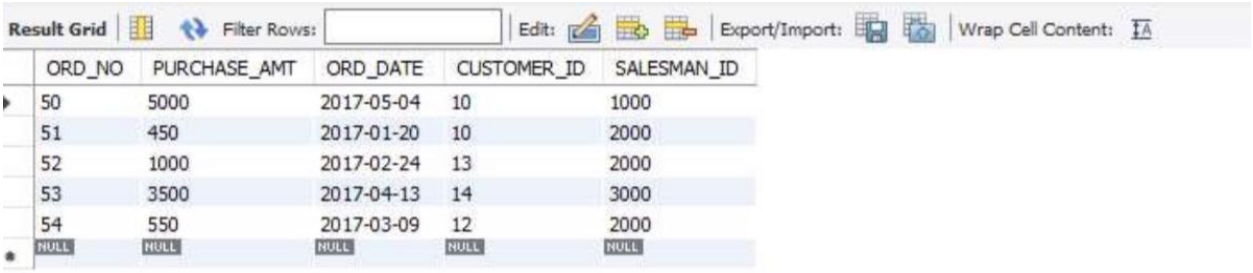


SALESMAN_ID	NAME	CITY	COMMISSION
1000	JOHN	BANGALORE	25 %
2000	RAVI	BANGALORE	20 %
3000	KUMAR	MYSORE	15 %
4000	SMITH	DELHI	30 %
5000	HARSHA	HYDERBAD	15 %

```
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);
select * from customer;
```

CUSTOMER_ID	CUST_NAME	CITY	GRADE	SALESMAN_ID
10	PREETHI	BANGALORE	100	NULL
11	VIVEK	MANGALORE	300	NULL
12	BHASKAR	CHENNAI	400	2000
13	CHETHAN	BANGALORE	200	2000
14	MAMATHA	BANGALORE	400	3000
NULL	NULL	NULL	NULL	NULL

```
insert into orders values (50, 5000, '04-06-17', 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 orders;
```



ORD_NO	PURCHASE_AMT	ORD_DATE	CUSTOMER_ID	SALESMAN_ID
50	5000	2017-05-04	10	1000
51	450	2017-01-20	10	2000
52	1000	2017-02-24	13	2000
53	3500	2017-04-13	14	3000
54	550	2017-03-09	12	2000
NULL	NULL	NULL	NULL	NULL

```
select grade, count(distinct customer_id)
from customer1
group by grade
having grade > (select avg(grade)
from customer1
```

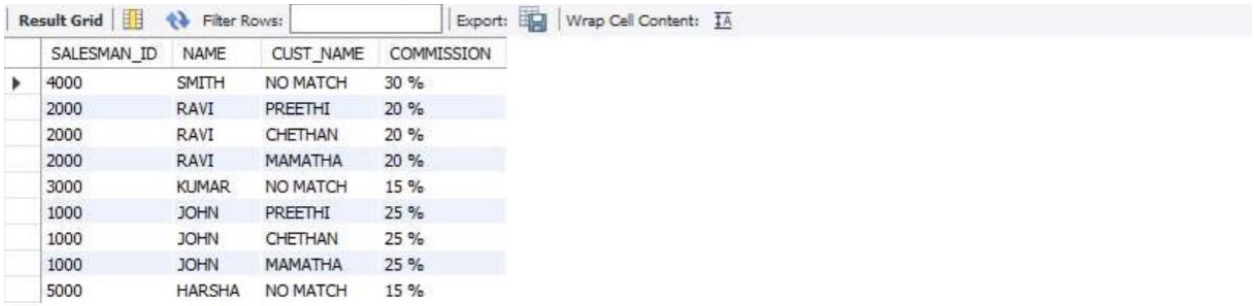
```
where city='bangalore'
);
```

GRADE	COUNT(DISTINCT CUSTOMER_ID)
300	1
400	2

```
select salesman_id, name
from salesman a
where 1 < (select count(*)
from customer1
where salesman_id=a.salesman_id
);
```

SALESMAN_ID	NAME
2000	RAVI
NULL	NULL

```
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)
order by 2 desc;
```

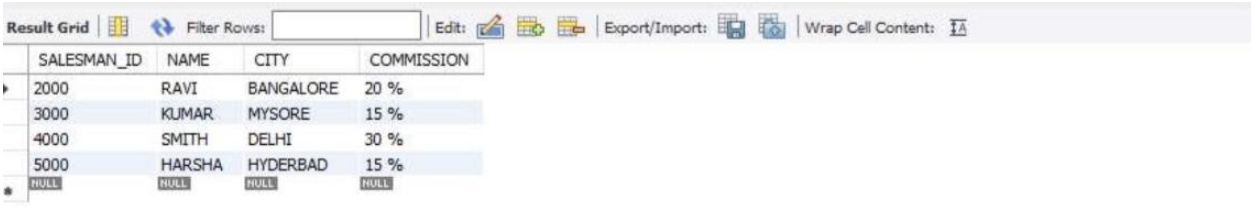


SALESMAN_ID	NAME	CUST_NAME	COMMISSION
4000	SMITH	NO MATCH	30 %
2000	RAVI	PREETHI	20 %
2000	RAVI	CHETHAN	20 %
2000	RAVI	MAMATHA	20 %
3000	KUMAR	NO MATCH	15 %
1000	JOHN	PREETHI	25 %
1000	JOHN	CHETHAN	25 %
1000	JOHN	MAMATHA	25 %
5000	HARSHA	NO MATCH	15 %

```
create view highsalesman 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 highsalesman;
```

ORD_DATE	SALESMAN_ID	NAME
2017-05-04	1000	JOHN
2017-01-20	2000	RAVI
2017-02-24	2000	RAVI
2017-04-13	3000	KUMAR
2017-03-09	2000	RAVI

```
delete from salesman
where salesman_id=1000;

select * from salesman;
select * from orders;
```



SALESMAN_ID	NAME	CITY	COMMISSION
2000	RAVI	BANGALORE	20 %
3000	KUMAR	MYSORE	15 %
4000	SMITH	DELHI	30 %
5000	HARSHA	HYDERBAD	15 %
NULL	NULL	NULL	NULL

LAB7- BOOK DATABASE

```
create database book;
use book;

create table publisher (
        name varchar (20) primary key,
        phone integer,
        address varchar (20)
);
desc publisher;

create table book (
```

```
        book_id integer primary key,
        title varchar (20),
        pub_year varchar (20),
        publisher_name varchar (20),
        foreign key (publisher_name) references publisher (name) on delete cascade
);
desc book;

create table book_authors (
        author_name varchar (20),
        book_id integer,
        foreign key (book_id) references book (book_id) on delete cascade,
        primary key (book_id, author_name)
);
desc book_authors;

create table library_branch (
        branch_id integer primary key,
        branch_name varchar (50),
        address varchar (50)
);
desc library_branch;

create table book_copies (
        no_of_copies integer,
        book_id integer,
        branch_id integer,
        foreign key (book_id) references book (book_id) on delete cascade,
        foreign key (branch_id) references library_branch (branch_id) on delete cascade,
        primary key (book_id, branch_id)
);
desc book_copies;

create table card (
        card_no integer primary key
);
desc card;
create table book_lending (
        date_out date,
        due_date date,
    book_id integer,
        branch_id integer,
    card_no integer,
        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,
        primary key (book_id, branch_id, card_no)
);
desc book_lending;

insert into publisher values ('mcgraw-hill', 99890, 'bangalore');
insert into publisher values ('pearson', 98890, 'newdelhi');
insert into publisher values ('random house', 74556, 'hydrabad');
insert into publisher values ('hachette livre', 897086, 'chenai');
insert into publisher values ('grupo planeta', 77561, 'bangalore');

select * from publisher;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

NAME	PHONE	ADDRESS
GRUPO PLANETA	7756120238	BANGALORE
HACHETTE LIVRE	8970862340	CHENNAI
MCGRAW-HILL	9989076587	BANGALORE
PEARSON	9889076565	NEWDELHI
RANDOM HOUSE	7455679345	HYDRABAD
NULL	NULL	NULL

```
insert into book values (1,'dbms','01-2017', 'mcgraw-hill');
insert into book values (2,'adbms','06-2016', 'mcgraw-hill');
insert into book values (3,'cn','09-2016', 'pearson');
insert into book values (4,'cg','09-2015', 'grupo planeta');
insert into book values (5,'os','05-2016', 'pearson');
select * from book;
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);
select * from book_authors;
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');
select * from library_branch;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

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

```
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);
select * from book_copies;
```

NO_OF_COPIES	BOOK_ID	BRANCH_ID
10	1	10
5	1	11
2	2	12
5	2	13
3	4	11
1	5	10
NULL	NULL	NULL

```
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);
select * from card;
```

CARD_NO
100
101
102
103
104
NULL

```
insert into book_lending values ('01-01-17','01-06-17', 1, 10, 101);
insert into book_lending values ('11-01-17','11-03-17', 3, 14, 101);
insert into book_lending values ('21-02-17','21-04-17', 2, 13, 101);
insert into book_lending values ('15-03-17','15-07-17', 4, 11, 101);
insert into book_lending values ('12-08-17','12-08-17', 1, 11, 104);
select * from book_lending;


select b.book_id, b.title, b.pub_year, b.publisher_name, bc.no_of_copies, ba.author_name,
lb.branch_name from book b, book_authors ba,
library_branch lb, book_copies bc where b.book_id = ba.book_id and b.book_id = bc.book_id
and lb.branch_id = bc.branch_id;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

BOOK_ID	TITLE	PUBLISHER_NAME	AUTHOR_NAME	NO_OF_COPIES	BRANCH_ID
1	DBMS	MCGRAW-HILL	NAVATHE	10	10
1	DBMS	MCGRAW-HILL	NAVATHE	5	11
2	ADBMS	MCGRAW-HILL	NAVATHE	2	12
2	ADBMS	MCGRAW-HILL	NAVATHE	5	13
3	CN	PEARSON	TANENBAUM	7	14
4	CG	GRUPO PLANETA	EDWARD ANGEL	3	11
5	OS	PEARSON	GALVIN	1	10

```
select card_no from book_lending where year(date_out) >17 and month(date_out)<7 group by
card_no having count(card_no) >2 ;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

CARD_NO
101

```
delete from book where book_id = 3;
select * from book;
select * from book_authors;
select * from book_copies;
select * from book_lending;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

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

```
select * from book order by substring(pub_year, 4, 4);
select b1.book_id, b1.title, b1.pub_year
from book b1
inner join book b2 on substring(b1.pub_year, 4, 4) = substring(b2.pub_year, 4, 4) and
b1.book_id <> b2.book_id;

create view q4_view as select pub_year from book;
select * from q4_view;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

PUB_YEAR
JAN-2017
JUN-2016
SEP-2015
MAY-2016

```
create view q5_view as select b.book_id, b.title, bc.no_of_copies from book b,
book_copies bc where b.book_id = bc.book_id;
select * from q5_view;
```

BOOK_ID	TITLE	NO_OF_COPIES
1	DBMS	10
1	DBMS	5
2	ADBMS	2
2	ADBMS	5
4	CG	3
5	OS	1

LAB8- STUDENT ENROLLMENT DATABASE

```
create database student_enroll; use student_enroll;

create table student( regno varchar(15), name varchar(20), major varchar(20), bdate date,
primary key(regno)); desc student;
create table course( courseno int,
cname varchar(20), dept varchar(20), primary key(courseno)); desc course;
create table enroll( regno varchar(15), courseno int,
sem int,
marks int,
primary key(regno,courseno),
foreign key(regno) references student(regno), foreign key(courseno) references
course(courseno)); desc enroll;
create table textbook( book_isbn int,
book_title varchar(20), publisher varchar(20), author varchar(20), primary key(book_isbn));

desc textbook;
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
textbook(book_isbn));
desc book_adoption;

insert into student values('1BM11CS001','A','Sr','19931230'); insert into student
values('1BM11CS002','B','Sr','19930924'); insert into student
values('1BM11CS003','C','Sr','19931127'); insert into student
values('1BM11CS004','D','Sr','19930413'); insert into student
values('1BM11CS005','E','Jr','19940824');
 commit;
```

select * from student;

regno	name	major	bdate
1BM11CS001	A	Sr	1993-12-30
1BM11CS002	B	Sr	1993-09-24
1BM11CS003	C	Sr	1993-11-27
1BM11CS004	D	Sr	1993-04-13
1BM11CS005	E	Jr	1994-08-24
NULL	NULL	NULL	NULL

insert into course values(111,'OS','CSE'); insert into course values(112,'EC','ECE'); insert into course values(113,'SS','ISE');
insert into course values(114,'DBMS','CSE'); insert into course values(115,'SIGNALS','ECE');

commit;
select * from course;

courseno	cname	dept
111	OS	CSE
112	EC	ECE
113	SS	ISE
114	DBMS	CSE
115	SIGNALS	ECE
NULL	NULL	NULL

insert into textbook values(10,'DATABASE SYSTEMS','PEARSON','SCHIELD');
insert into textbook values(900,'OPERATING SYSTEMS','PEARSON','LELAND');
insert into textbook values(901,'CIRCUITS','HALL INDIA','BOB');
insert into textbook values(902,'SYSTEM SOFTWARE','PETERSON','JACOB');
insert into textbook values(903,'SCHEDULING','PEARSON','PATIL');
insert into textbook values(904,'DATABASE SYSTEMS','PEARSON','JACOB');
insert into textbook values(905,'DATABASE MANAGER','PEARSON','BOB');
insert into textbook values(906,'SIGNALS','HALL INDIA','SUMIT');
commit;
select * from textbook;

book_isbn	book_title	publisher	author
10	DATABASE SYSTEMS	PEARSON	SCHIELD
900	OPERATING SYSTEMS	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

insert into enroll values('1BM11CS001',115,3,100); insert into enroll values('1BM11CS002',114,5,100); insert into enroll values('1BM11CS003',113,5,100); insert into enroll values('1BM11CS004',111,5,100); insert into enroll values('1BM11CS005',112,3,100);

commit;
select * from enroll;

regno	courseno	sem	marks
1BM11CS001	115	3	100
1BM11CS002	114	5	100
1BM11CS003	113	5	100
1BM11CS004	111	5	100
1BM11CS005	112	3	100
NULL	NULL	NULL	NULL

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

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

insert into textbook values(908,'UNIX CONCEPTS','TATA MCGRAW HILL','SUMITABHA DAS');
insert into book_adoption values(113,4,908);
select * from textbook;

select * from book_adoption;

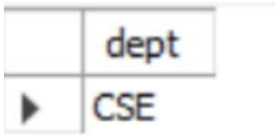
book_isbn	book_title	publisher	author
10	DATABASE SYSTEMS	PEARSON	SCHIELD
900	OPERATING SYSTEMS	PEARSON	LELAND
901	CIRCUITS	HALL INDIA	BOB
902	SYSTEM SOFTWARE	PETERSON	JACOB
903	SCHEDULING	PEARSON	PATIL
904	DATABASE SYSTEMS	PEARSON	JACOB
905	DATABASE MANAGER	PEARSON	BOB
906	SIGNALS	HALL INDIA	SUMIT
908	UNIX CONCEPTS	TATA MCGRAW HILL	SUMITABHA DAS
NULL	NULL	NULL	NULL

courseno	sem	book_isbn
111	5	900
111	5	903
111	5	904
112	3	901
113	3	10
113	5	902
113	4	908
114	5	905
115	3	906
NULL	NULL	NULL

```
select c.courseno,t.book_isbn,t.book_title from course c,book_adoption ba,textbook 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;
```

courseno	book_isbn	book_title
111	904	DATABASE SYSTEMS
111	900	OPERATING SYSTEMS
111	903	SCHEDULING

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



	dept
▶	CSE

LAB 9-MOVIE DATABASE

```
create database movie;
use movie;
create table actor( act_id int,
act_name varchar(20), act_gender char(1), primary key(act_id));
desc actor;
create table director( dir_id int,
dir_name varchar(20), dir_phone int(10), primary key(dir_id));
desc director;
alter table director
modify column dir_phone bigint; desc director;
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));

desc movies;
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));
desc movie_cast;
create table rating(
mov_id int,
rev_stars varchar(25),
primary key(mov_id),
foreign key(mov_id) references movies(mov_id));
 desc rating;
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');
commit;
select * from actor;
```

act_id	act_name	act_gender
301	ANUSHKA	F
302	PRABHAS	M
303	PUNITH	M
304	JERMY	M
NULL	NULL	NULL

```
insert into director values(60,'RAJAMOULI', 8751611001);
insert into director values(61,'HITCHCOCK', 7766138911);

 select * from director;
```

dir_id	dir_name	dir_phone
60	RAJAMOULI	8751611001
61	HITCHCOCK	7766138911
62	FARAN	9986776531
63	STEVEN SPIELBERG	8989776530
NULL	NULL	NULL

```
insert into director values(62,'FARAN', 9986776531);
insert into director values(63,'STEVEN SPIELBERG', 8989776530);
 commit;
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);
commit;
select * from movies;
```

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

```
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'); commit;
select * from movie_cast;
```

	act_id	mov_id	role
▶	301	1001	HEROINE
	301	1002	HEROINE
	303	1002	GUEST
	303	1003	HERO
	304	1004	HERO
*	NULL	NULL	NULL

insert into rating values(1001, 4); insert into rating values(1002, 2); insert into rating values(1003, 5); insert into rating values(1004, 4); commit;
select * from rating;

```
select mov_title
from movies
where dir_id=(select dir_id from director where dir_name='Hitchcock') group by mov_title;
```

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

```
select m.mov_title
from movies m, movie_cast mc
where m.mov_id=mc.mov_id
and mc.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;
```

	mov_title
▶	BAHUBALI-1

```
select act_name,mov_title,mov_year from actor a
join movie_cast mc
on a.act_id=mc.act_id
join movies m
```

on m.mov_id=mc.mov_id
where m.mov_year not between 2000 and 2015;

act_name	mov_title	mov_year
ANUSHKA	BAHUBALI-2	2017

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

order by mov_title;

mov_title	max(rev_stars)
AKASH	5
BAHUBALI-1	2
BAHUBALI-2	4
WAR HORSE	4

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'));
select * from rating;

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

LAB 10 - COLLEGE DATABASE

create database college;

use college;
create table student(
usn varchar(30), sname varchar(30), address varchar(30), phone real,
gender varchar(30), primary key(usn)

```
);
desc student;
create table semsec( ssid varchar(30), sem int,
sec varchar(30), primary key(ssid)
);
desc semsec;
create table class(
usn varchar(30),
ssid varchar(30),

primary key(usn,ssid),
foreign key(usn) REFERENCES student(usn), foreign key(ssid) REFERENCES semsec(ssid)
);
desc class;
create table subject( code varchar(30), title varchar(30), sem int,
credits int, primary key(code) );
desc subject;
create table marks(
usn varchar(30),code varchar(30),
ssid varchar(30),
test1 real, test2 real, test3 real, final real, primary key(usn,code,ssid),
foreign key(usn) REFERENCES student(usn), foreign key(code) REFERENCES subject(code),

foreign key(ssid) REFERENCES semsec(ssid) );
desc marks;
insert into student values('1RN13CS020','akshay','belagavi',8877881122,'m'),
('1RN13CS062','sandhya','bengaluru',7722829912,'f'),
('1RN13CS091','teesha','bengaluru',7712312312,'f'),
('1RN13CS066','supriya','mangaluru',8877881122,'f'),
('1RN14CS010','abhay','bengaluru',9900211201,'m'),
('1RN14CS032','bhaskar','bengaluru',9923211099,'m'),
('1RN14CS025','asmi','bengaluru',7894737377,'f'),
('1RN15CS011','ajay','tumkur',98545091341,'m'),
('1RN15CS029','chitra','davangere',7696772121,'f'),
('1RN15CS045','jeeva','bellary',9944850121,'m'),
('1RN15CS091','santosh','mangaluru',8812332201,'m'),
('1RN16CS045','ismail','kalburgi',9900232201,'m'),
('1RN16CS088','sameera','shimoga',9905542212,'f'),
('1RN16CS122','vinayaka','chikamagaluru',8800880011,'m');
select * from student;
```

usn	sname	address	phone	gender
1RN13CS020	akshay	belagavi	8877881122	m
1RN13CS062	sandhya	bengaluru	7722829912	f
1RN13CS066	supriya	mangaluru	8877881122	f
1RN13CS091	teesha	bengaluru	7712312312	f
1RN14CS010	abhay	bengaluru	9900211201	m
1RN14CS025	asmi	bengaluru	7894737377	f
1RN14CS032	bhaskar	bengaluru	9923211099	m
1RN15CS011	ajay	tumkur	98545091341	m
1RN15CS029	chitra	davangere	7696772121	f
1RN15CS045	jeeva	bellary	9944850121	m
1RN15CS091	santosh	mangaluru	8812332201	m
1RN16CS045	ismail	kalburgi	9900232201	m
1RN16CS088	sameera	shimoga	9905542212	f
1RN16CS122	vinayaka	chikamag...	8800880011	m
NULL	NULL	NULL	NULL	NULL

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

	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
	CSE7C	7	C
	CSE8A	8	A
	CSE8B	8	B
	CSE8C	8	C
*	NULL	NULL	NULL

```
insert into class values('1RN13CS020','CSE8A'),
('1RN13CS062','CSE8A'),('1RN13CS066','CSE8B'),('1RN13CS091','CSE8C'),
('1RN14CS010','CSE7A'),('1RN14CS025','CSE7A'),('1RN14CS032','CSE7A'),
('1RN15CS011','CSE4A'),('1RN15CS029','CSE4A'),('1RN15CS045','CSE4B'),
('1RN15CS091','CSE4C'),('1RN16CS045','CSE3A'),('1RN16CS088','CSE3B'),
('1RN16CS122','CSE3C');
select * from class;
```

1RN16CS045	CSE3A
1RN16CS088	CSE3B
1RN16CS122	CSE3C
1RN15CS011	CSE4A
1RN15CS029	CSE4A
1RN15CS045	CSE4B
1RN15CS091	CSE4C
1RN14CS010	CSE7A
1RN14CS025	CSE7A
1RN14CS032	CSE7A
1RN13CS020	CSE8A
1RN13CS062	CSE8A
1RN13CS066	CSE8B
1RN13CS091	CSE8C
NULL	NULL

```
insert into subject values('10CS81','ACA',8,4), ('10CS82','SSM',8,4),('10CS83','NM',8,4),
('10CS84','CC',8,4),('10CS85','PW',8,4), ('10CS71','OOAD',7,4),('10CS72','ECS',7,4),
('10CS73','PTW',7,4),('10CS74','DWDM',7,4), ('10CS75','JAVA',7,4),('10CS76','SAN',7,4),
('10CS51','ME',5,4),('10CS52','CN',5,4), ('10CS53','DBMS',5,4),('10CS54','ATC',5,4),
('10CS55','JAVA',5,3),('10CS56','AI',5,3), ('10CS41','M4',4,4),('10CS42','SE',4,4),
('10CS43','DAA',4,4),('10CS44','MPMC',4,4), ('10CS45','OOC',4,3),('10CS46','DC',4,3),
('10CS31','M3',3,4),('10CS32','ADE',3,4), ('10CS33','DSA',3,4),('10CS34','CO',3,4),
('10CS35','USP',3,3),('10CS36','DMS',3,3);
select * from subject;
```

code	title	sem	credits
10CS31	M3	3	4
10CS32	ADE	3	4
10CS33	DSA	3	4
10CS34	CO	3	4
10CS35	USP	3	3
10CS36	DMS	3	3
10CS41	M4	4	4
10CS42	SE	4	4
10CS43	DAA	4	4
10CS44	MPMC	4	4
10CS45	OOC	4	3
10CS46	DC	4	3
10CS51	ME	5	4
10CS52	CN	5	4
10CS53	DBMS	5	4
10CS54	ATC	5	4

```
 insert into marks(usn,code,ssid,test1,test2,test3)
values('1RN13CS091','10CS81','CSE8C',15,16,18),
('1RN13CS091','10CS82','CSE8C',12,19,14),('1RN13CS091','10CS83','CSE8C',19,15,20),
('1RN13CS091','10CS84','CSE8C',20,16,19),('1RN13CS091','10CS85','CSE8C',15,15,12);
select * from marks;
```

usn	code	ssid	test1	test2	test3	final
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

```
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 = 'C';
```

usn	sname	address	phone	gender	sem	sec
1RN15CS091	santosh	mangaluru	8812332201	m	4	C

```
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;
```

sem	sec	gender	COUNT
3	A	m	1
3	B	f	1
3	C	m	1
4	A	f	1
4	A	m	1
4	B	m	1
4	C	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

create view STU_test1_marks_view as select test1, code
from marks
where usn = '1RN13CS091';
select * from STU_test1_marks_view;

	test1	code
▶	15	10CS81
	12	10CS82
	19	10CS83
	20	10CS84
	15	10CS85

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.final between 17 and 20 then 'outstanding' when IA.final between 12 and 16 then
'average' else 'weak' end) AS CAT
from student S, semsec SS, marks IA, subject sub
where S.usn = IA.usn AND SS.ssid = IA.ssid AND sub.code = IA.code AND sub.sem = 8;

usn	sname	address	phone	gender	CAT
1RN13CS091	teesha	bengaluru	7712312312	f	weak
1RN13CS091	teesha	bengaluru	7712312312	f	weak
1RN13CS091	teesha	bengaluru	7712312312	f	weak
1RN13CS091	teesha	bengaluru	7712312312	f	weak
1RN13CS091	teesha	bengaluru	7712312312	f	weak