

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

LAB PROGRAM 2 (BANK DATABASE)

Name Vasanth Kumar T

USN: 1BM19CS180

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', 'Bannerghatta_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;
```

	accno	branch_name	balance
▶	1	SBI_Chamrajpet	2000
	2	SBI_ResidencyRoad	5000
	3	SBI_ShivajiRoad	6000
	4	SBI_ParliamentRoad	9000
	5	SBI_Jantarmanatar	8000
	6	SBI_ShivajiRoad	4000
	8	SBI_ResidencyRoad	4000
	9	SBI_ParliamentRoad	3000
	10	SBI_ResidencyRoad	5000
	11	SBI_Jantarmanatar	2000
*	NULL	NULL	NULL

Bank Account Table

	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_Jantarmanatar	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)

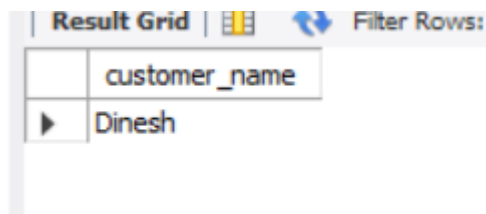
from depositor d, bank_account ba

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:



customer_name
Dinesh

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

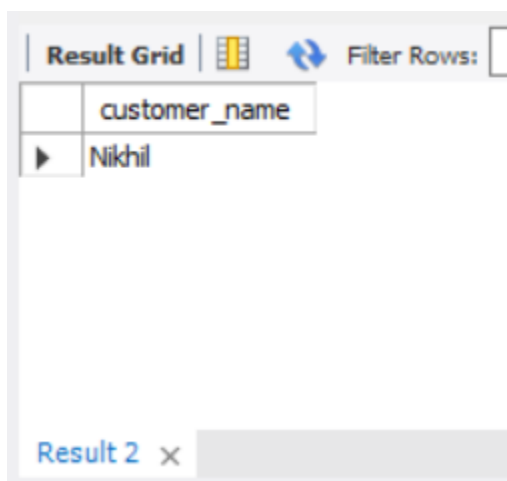
HAVING COUNT(distinct b.branch_name)=(

SELECT COUNT(branch_name)

FROM branch

WHERE branch_city='Delhi');

Output:



customer_name
Nikhil

Result 2 x

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_Jantarmanatar	8000
	8	SBI_ResidencyRoad	4000
	9	SBI_ParliamentRoad	3000
	10	SBI_ResidencyRoad	5000
	11	SBI_Jantarmanatar	2000
*	NULL	NULL	NULL

Queries:

```
create
database
supplier;
```

```
use supplier;
create table SUPPLIERS(sid integer,sname varchar(20),address
varchar(40),primary key(sid));
INSERT INTO `supplier`.`suppliers` (`sid`, `sname`, `address`) VALUES
('10001', 'Acme Widget', 'Bangalore');
INSERT INTO `supplier`.`suppliers` (`sid`, `sname`, `address`) VALUES
('10002', 'Johns', 'Kolkata');
INSERT INTO `supplier`.`suppliers` (`sid`, `sname`, `address`) VALUES
('10003', 'Vimal', 'Mumbai');
INSERT INTO `supplier`.`suppliers` (`sid`, `sname`, `address`) VALUES
('10004', 'Reliance', 'Delhi');

commit;
select* from SUPPLIERS;

create table PARTS(pid integer,pname varchar(20),color varchar(30),primary
key(pid));
INSERT INTO `supplier`.`parts` (`pid`, `pname`, `color`) VALUES ('20001',
'Book', 'Red');
INSERT INTO `supplier`.`parts` (`pid`, `pname`, `color`) VALUES ('20002',
'Pen', 'Red');
INSERT INTO `supplier`.`parts` (`pid`, `pname`, `color`) VALUES ('20003',
'Pencil', 'Green');
INSERT INTO `supplier`.`parts` (`pid`, `pname`, `color`) VALUES ('20004',
'Mobile', 'Green');
INSERT INTO `supplier`.`parts` (`pid`, `pname`, `color`) VALUES ('20005',
'Charger', 'Black');
commit;
select* from PART;

create table CATALOG(sid integer,pid integer,foreign key(sid) references
SUPPLIERS(sid),foreign key(pid) references PARTS(pid),
cost integer,primary key(sid,pid));
INSERT INTO `supplier`.`catalog` (`sid`, `pid`, `cost`) VALUES ('10001',
'20001', '10');
```

```

INSERT INTO `supplier`.`catalog` (`sid`, `pid`, `cost`) VALUES ('10001',
'20002', '10');
INSERT INTO `supplier`.`catalog` (`sid`, `pid`, `cost`) VALUES ('10001',
'20003', '30');
INSERT INTO `supplier`.`catalog` (`sid`, `pid`, `cost`) VALUES ('10001',
'20004', '10');
INSERT INTO `supplier`.`catalog` (`sid`, `pid`, `cost`) VALUES ('10001',
'20005', '10');
INSERT INTO `supplier`.`catalog` (`sid`, `pid`, `cost`) VALUES ('10002',
'20001', '10');
INSERT INTO `supplier`.`catalog` (`sid`, `pid`, `cost`) VALUES ('10002',
'20002', '20');
INSERT INTO `supplier`.`catalog` (`sid`, `pid`, `cost`) VALUES ('10003',
'20003', '30');
INSERT INTO `supplier`.`catalog` (`sid`, `pid`, `cost`) VALUES ('10004',
'20003', '40');

commit;
select* from CATALOG;

```

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

Parts Table:

	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:

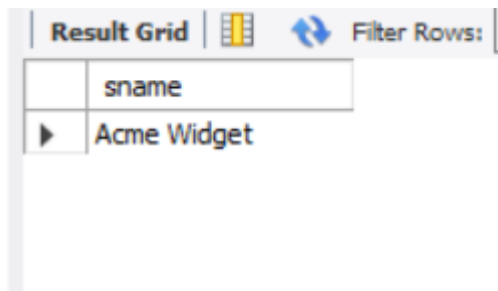
	pname
▶	Book
	Pen
	Pencil
	Mobile
	Charger

Query 2:

```
select S.sname from SUPPLIERS S where not exists
(select P.pid from PARTS P where not exists
```

(select C.sid from CATALOG C where C.sid = S.sid and C.pid = P.pid));

Output:

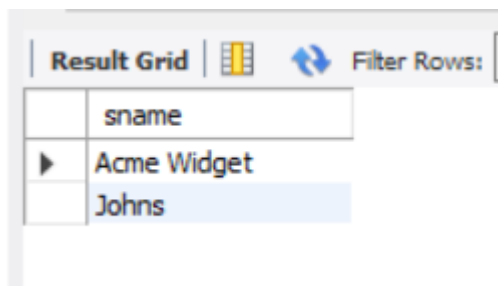


	sname
▶	Acme Widget

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:

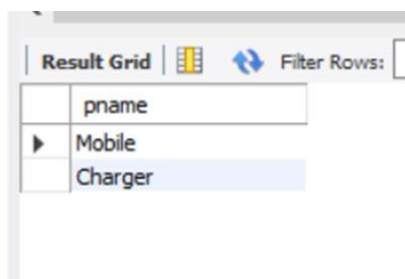


	sname
▶	Acme Widget
	Johns

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');

Output:



	pname
▶	Mobile
	Charger

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);
```

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

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:

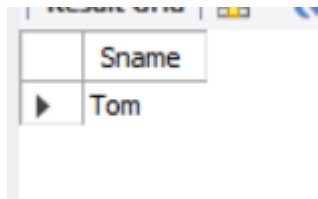
	snum	sname	major	lvl	age
▶	1	jhon	CS	Sr	19
	2	Smith	CS	Jr	20
	3	Jacob	CV	Sr	20
	4	Tom	CS	Jr	20
	5	Rahul	CS	Jr	20
	6	Rita	CS	Sr	21
✱	NULL	NULL	NULL	NULL	NULL

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:

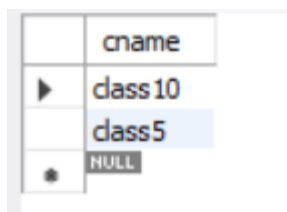


Sname
Tom

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);

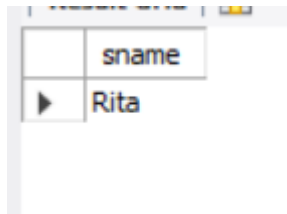
```

Output:

	fname
▶	Harish
	MV
	Mira
	Shiva

Query 6:

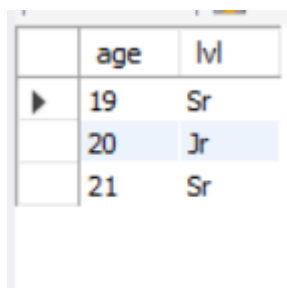
```
SELECT DISTINCT S.sname
FROM Student S
WHERE S.snum NOT IN (SELECT E.snum
FROM Enrolled E );
```

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

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:

	fno	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:

	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:

Result Grid			Filter Rows:
	flno	departs	
▶	102	2013-05-05 07:15:31	
	106	2013-05-05 01:15:30	