

# Lab Record

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**Course code:** 19CS4PCDBM

**USN:** 1BM18CS116

**Course Name:** DBMS Lab

## **Lab Program: 1: - INSURANCE DATABASE**

```
create
database
insurance;
```

```
create table person (
  driver_id varchar(10),
  name varchar(20) ,
  address varchar(100),
  primary key(driver_id)
);
```

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

```
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)
);

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)
);
select *from car;

use insurance;
insert into person values('A01', 'Richard', 'Srinivas Nagar');
insert into person values('A02', 'Pradeep', 'Rajaji Nagar');
insert into person values('A03', 'Smith', 'Ashok Nagar');
insert into person values('A04', 'Virus', 'N. R Colony');
insert into person values('A05', 'John', 'HanumanthNagar');
select * from person;

insert into car values('KA052255', 'Indica', '1990');
insert into car values('KA052251', 'Lacer', '1957');
insert into car values('KA052252', 'Tyota', '1998');
insert into car values('KA052253', 'Honda', '2008');
insert into car values('KA052254', 'Audi', '2005');
select * from car;

insert into accident values('11', '2002-03-01', 'Basvangudi Road');
insert into accident values('12', '2008-04-05', 'KANAKPURA Road');
insert into accident values('13', '2000-09-10', 'Ring Road');
insert into accident values('14', '2004-05-12', 'Mysore Road');
insert into accident values('15', '2003-07-28', 'Mysore Road');
select * from accident;

insert into owns values('A01', 'KA052255');
insert into owns values('A02', 'KA052251');
insert into owns values('A03', 'KA052252');

```

```

insert into owns values('A04', 'KA052253');
insert into owns values('A05', 'KA052254');
select * from owns;

INSERT INTO PARTICIPATED VALUES('A01', 'KA052255', 11, 10000);
INSERT INTO PARTICIPATED VALUES('A02', 'KA052251', 12, 50000);
INSERT INTO PARTICIPATED VALUES('A03', 'KA052252', 13, 25000);
INSERT INTO PARTICIPATED VALUES('A04', 'KA052253', 14, 3000);
INSERT INTO PARTICIPATED VALUES('A05', 'KA052254', 15, 5000);
select * from participated;

UPDATE PARTICIPATED SET DAMAGE_AMOUNT = 25000 WHERE REPORT_NUM = 12;
select *from participated;

INSERT INTO ACCIDENT VALUES (16, '2008-02-21', 'Bulltemple Road');
select * from accident;

SELECT COUNT(DISTINCT DRIVER_ID) FROM ACCIDENT, PARTICIPATED
WHERE ACCIDENT.REPORT_NUM = PARTICIPATED.REPORT_NUM
AND ACCIDENT_DATE LIKE '2008%';

SELECT COUNT(REPORT_NUM) FROM CAR, PARTICIPATED
WHERE CAR.REG_NUM = PARTICIPATED.REG_NUM
AND MODEL = "AUDI";

```

## Tables And Outpus:

### 1.

```

44 • use insurance;
45 • insert into person values('A01', 'Richard', 'Srinivas Nagar');
46 • insert into person values('A02', 'Pradeep', 'Rajaji Nagar');
47 • insert into person values('A03', 'Smith', 'Ashok Nagar');
48 • insert into person values('A04', 'Viru', 'N.R Colony');
49 • insert into person values('A05', 'John', 'HanumanthNagar');






```

Result Grid		
name	driver_id	address
A05	John	HanumanthNagar
A02	Pradeep	Rajaji Nagar
A01	Richard	Srinivas Nagar
A03	Smith	Ashok Nagar
A04	Viru	N.R Colony
NULL	NULL	NULL

```

52 • insert into car values('KA0522558', 'Indica', '1990');
53 • insert into car values('KA052251', 'Lacer', '1957');
54 • insert into car values('KA052252', 'Tyota', '1998');
55 • insert into car values('KA052253', 'Honda', '2008');
56 • insert into car values('KA052254', 'Audi', '2005');
57 • select * from car;
58
59






```

Result Grid			
Filter Rows: <input type="text"/>			
Edit:    Export/Import:  			
	reg_num	model	year
▶	KA052250	Indica	1990
	KA052251	Lacer	1957
	KA052252	Tyota	1998
	KA052253	Honda	2008
	KA052254	Audi	2005
	KA0522558	Indica	1990
•	NULL	NULL	NULL

```

59 • insert into accident values('11', '2002-03-01', 'Basvangudi Road');
60 • insert into accident values('12', '200-04-05', 'KANAKPURA Road');
61 • insert into accident values('13', '2000-09-10', 'Ring Road');
62 • insert into accident values('14', '2004-05-12', 'Mysore Road');
63 • insert into accident values('15', '2003-07-28', 'Mysore Road');
64 • select * from accident;
65
66
67

```

Result Grid			
Filter Rows: <input type="text"/>			
Edit:    Export/Import:   Wrap Cell Content			
	report_num	accident_date	location
	11	2002-03-01	Basvangudi Road
	12	0200-04-05	KANAKPURA Road
	13	2000-09-10	Ring Road
	14	2004-05-12	Mysore Road
	15	2003-07-28	Mysore Road
	NULL	NULL	NULL






```

68 • insert into owns values('A01', 'KA052255');
69 • insert into owns values('A02', 'KA052251');
70 • insert into owns values('A03', 'KA052252');
71 • insert into owns values('A04', 'KA052253');
72 • insert into owns values('A05', 'KA052254');
73 • select * from owns;

```

Result Grid   Filter Rows:  Edit:    Export/Import

driver_id	reg_num
A02	KA052251
A03	KA052252
A04	KA052253
A05	KA052254
A01	KA052255
NULL	NULL

Result Grid   Filter Rows:  Edit:   

	driver_id	reg_num	report_num	damage_amount
▶	A01	KA052255	11	10000
	A02	KA052251	12	50000
	A03	KA052252	13	25000
	A04	KA052253	14	3000
	A05	KA052254	15	5000
★	NULL	NULL	NULL	NULL

Result Grid					Filter Rows:	Edit:	Export/Import
	driver_id	reg_num	report_num	damage_amount			
▶	A01	KA052255	11	10000			
	A02	KA052251	12	25000			
	A03	KA052252	13	25000			
	A04	KA052253	14	3000			
	A05	KA052254	15	5000			
★	NULL	NULL	NULL	NULL			

participated 8 ×

Result Grid				Filter Rows:	Edit:
	report_num	accident_date	location		
▶	11	2002-03-01	Basvangudi Road		
	12	0200-04-05	KANAKPURA Road		
	13	2000-09-10	Ring Road		
	14	2004-05-12	Mysore Road		
	15	2003-07-28	Mysore Road		
	16	2008-02-21	Bulltemple Road		
★	NULL	NULL	NULL		

Result Grid				Filter Rows:	Export:	Wrap Cell Content:
	COUNT(DISTINCT DRIVER_ID)					
▶	1					

Result Grid				Filter Rows:	Export:	Wrap Cell Content:
	COUNT(REPORT_NUM)					
▶	1					

## Lab Program 2:- Banking Enterprise Database

```
create
database
banking;
```

```
CREATE TABLE BRANCH (BRANCH_NAME VARCHAR(30), BRANCH_CITY VARCHAR(30), ASSETS REAL,
PRIMARY KEY (BRANCH_NAME));

CREATE TABLE BANK_ACCOUNT (ACCNO INT, BRANCH_NAME VARCHAR(30), BALANCE REAL, PRIMARY KEY
(ACCNO), FOREIGN KEY (BRANCH_NAME) REFERENCES BRANCH(BRANCH_NAME));

CREATE TABLE BANK_CUSTOMER (CUSTOMER_NAME VARCHAR(30), CUSTOMER_STREET VARCHAR(30),
CUSTOMER_CITY VARCHAR(30), PRIMARY KEY(CUSTOMER_NAME));

CREATE TABLE DEPOSITER (CUSTOMER_NAME VARCHAR(30), 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(30), AMOUNT REAL, 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);

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);

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', 'NATIONALCOLLEGE_ROAD', 'BANGALORE');
INSERT INTO BANK_CUSTOMER VALUES ('NIKHIL', 'AKBAR_ROAD', 'DELHI');
INSERT INTO BANK_CUSTOMER VALUES ('RAVI', 'PRITHVIRAJ_ROAD', 'DELHI');
```

```
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);
```

```
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);
```

```
SELECT CUSTOMER_NAME, COUNT(CUSTOMER_NAME)
FROM DEPOSITER D, BANK_ACCOUNT B
WHERE D.ACCNO = B.ACCNO
AND B.BRANCH_NAME = 'SBI_RESIDENCYROAD'
GROUP BY CUSTOMER_NAME
HAVING COUNT(CUSTOMER_NAME) >= 2;
```

```
SELECT CUSTOMER_NAME
FROM DEPOSITER D, BANK_ACCOUNT BA, BRANCH B
WHERE BRANCH_CITY = 'DELHI'
;
```

```
DELETE FROM BANK_ACCOUNT
WHERE BRANCH_NAME IN (
    SELECT BRANCH_NAME
    FROM BRANCH
    WHERE BRANCH_CITY = 'BOMBAY'
);
SELECT * FROM BANK_ACCOUNT;
```



## Outputs And Tables:-

	Field	Type	Null	Key	Default	Extra
►	BRANCH_NAME	varchar(30)	NO	PRI	NULL	
	BRANCH_CITY	varchar(30)	YES		NULL	
	ASSETS	double	YES		NULL	

	Field	Type	Null	Key	Default	Extra
►	ACCNO	int	NO	PRI	NULL	
	BRANCH_NAME	varchar(30)	YES	MUL	NULL	
	BALANCE	double	YES		NULL	

	Field	Type	Null	Key	Default	Extra
►	CUSTOMER_NAME	varchar(30)	NO	PRI	NULL	
	CUSTOMER_STREET	varchar(30)	YES		NULL	
	CUSTOMER_CITY	varchar(30)	YES		NULL	

Result Grid						
		Filter Rows:			Export:	Wrap Cell Content:
	Field	Type	Null	Key	Default	Extra
▶	CUSTOMER_NAME	varchar(30)	NO	PRI	NULL	
	ACCNO	int	NO	PRI	NULL	



Result Grid						
		Filter Rows:			Export:	Wrap Cell Co
	Field	Type	Null	Key	Default	Extra
▶	LOAN_NUMBER	int	NO	PRI	NULL	
	BRANCH_NAME	varchar(30)	YES	MUL	NULL	
	AMOUNT	double	YES		NULL	

65 • **SELECT \* FROM BRANCH;**

Result Grid			
		Filter Rows:	Edit:
	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






65 • `SELECT * FROM BRANCH;`

66 • `SELECT * FROM BANK_ACCOUNT;`

Result Grid   Filter Rows:


	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

- 65 • SELECT \* FROM BRANCH;
- 66 • SELECT \* FROM BANK\_ACCOUNT;
- 67 • SELECT \* FROM BANK\_CUSTOMER;

Result Grid |   Filter Rows:  | Edit:   



	CUSTOMER_NAME	CUSTOMER_STREET	CUSTOMER_CITY
▶	AVINASH	BULL_TEMPLE_ROAD	BANGALORE
	DINESH	BANNERGATTA_ROAD	BANGALORE
	MOHAN	NATIONALCOLLEGE_ROAD	BANGALORE
	NIKHIL	AKBAR_ROAD	DELHI
	RAVI	PRITHVIRAJ_ROAD	DELHI
•	NULL	NULL	NULL

```
65 • SELECT * FROM BRANCH;  
66 • SELECT * FROM BANK_ACCOUNT;  
67 • SELECT * FROM BANK_CUSTOMER;  
68 • SELECT * FROM DEPOSITER;
```

Result Grid |   Filter Rows:


CUSTOMER_NAME	ACCNO
AVINASH	1
DINESH	2
NIKHIL	4
RAVI	5
AVINASH	8
NIKHIL	9
DINESH	10
NIKHIL	11
NULL	NULL

69 • `SELECT * FROM LOAN;`

Result Grid |   Filter Rows:

	CUSTOMER_NAME	ACCNO
▶	AVINASH	1
	DINESH	2
	NIKHIL	4
	RAVI	5
	AVINASH	8
	NIKHIL	9
	DINESH	10
	NIKHIL	11
•	NULL	NULL

```
45 • SELECT CUSTOMER_NAME, COUNT(CUSTOMER_NAME)
46 FROM DEPOSITER D, BANK_ACCOUNT B
47 WHERE D.ACCNO = B.ACCNO
48 AND B.BRANCH_NAME = 'SBI_RESIDENCYROAD'
49 GROUP BY CUSTOMER_NAME
50 HAVING COUNT(CUSTOMER_NAME) >= 2;
```

<   Filter Rows:  | Export:  | Wrap Cell Co

	CUSTOMER_NAME	COUNT(CUSTOMER_NAME)
▶	DINESH	2

```

57 DELETE FROM BANK_ACCOUNT
58 WHERE BRANCH_NAME IN (
59     SELECT BRANCH_NAME
60     FROM BRANCH
61     WHERE BRANCH_CITY = 'BOMBAY'
62 );
63 SELECT * FROM BANK_ACCOUNT;

```

Result Grid |  Filter Rows:

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



## Lab Program 3:- Supplier Database

```
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)
);
select * from suppliers;
select * from parts;
select * from catalog;

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

```
insert into parts values(5,'tiles','blue');
select p.pname from parts p where p.pid in (select pid from catalog c group by c.pid
having count(c.sid)>0);
insert into catalog values(1,5,140);
select p.pname from parts p where p.pid in (select pid from catalog c group by c.pid
having count(c.sid)>0);
delete from catalog where pid=5;
delete from parts where pid=5;
select * from catalog;
select * from parts;
```

```
select s.sname from suppliers s where s.sid in (select c.sid from catalog c group by c.sid
having count(distinct (c.pid))=(select count(p.pid) from parts p));
```

```
select s.sname from suppliers s where s.sid in (select ca.sid from catalog ca,parts p
where ca.pid=p.pid and p.color='red' group by ca.sid having count(ca.pid)=(select count(*)
from parts p where p.color='red'));
```




```
select ca.pid from catalog ca where ca.sid=(select s.sid from suppliers s where s.sname
='Acme Widget') having (select count(c.pid) from catalog c where c.pid=ca.pid)=1;
```





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

```
select s.sname from suppliers s where s.sid in (select c.sid from catalog c where
c.cost=(select max(cost) from catalog ca where ca.pid=c.pid));
```

```
select s.sname from suppliers s where s.sid in(select c.sid from catalog c where c.sid not
in (select distinct(ca.sid) from catalog ca,parts p where ca.pid=p.pid and
p.color!='red'));
insert into catalog values(5,1,140);
select s.sname from suppliers s where s.sid in(select c.sid from catalog c where c.sid not
in (select distinct(ca.sid) from catalog ca,parts p where ca.pid=p.pid and
p.color!='red'));
delete from catalog where sid=5;
select * from catalog;
```





## Outputs And Tables:

Result Grid			 Filter Rows: <input type="text"/>	Export: 
	pname			
▶	paint			
	steel			
	spray			
	sheet			
	tiles			




Result Grid					 Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: 
	sid	pid	cost				
▶	1	1	100				
	1	2	200				
	1	3	200				
	1	4	100				
	2	1	300				
	2	2	100				
	3	2	90				
	3	3	110				
	3	4	110				
	4	1	100				
	4	3	120				
	4	4	130				
	4	4	130				





Result Grid			Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: 
	pid				

Result Grid			Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: 
	sid	pid			
▶	1	2			
	1	3			
	2	1			
	4	4			
		4			

Result Grid			Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: 
	sname				
▶	Acme Widget				
	Tata				
	Nike				

Result Grid			Filter Rows: <input type="text"/>	Export: 
	sname			

Result Grid



Filter Rows:

sname

▶ Reliance

	sid	pid	cost
▶	1	1	100
	1	2	200
	1	3	200
	1	4	100
	2	1	300
	2	2	100
	3	2	90
	3	3	110
	3	4	110
	4	1	100
	4	3	120
	4	4	130
	4	4	130

## Lab program 4: 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));

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));

use student_faculty;
show tables;

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');
select * from student;
select * from faculty;
select * from class;
select * from enrolled;

-- 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';

-- 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);

```



```

-- 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);

-- 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) );

-- 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);

-- Query 6
SELECT DISTINCT S.sname
FROM Student S
WHERE S.snum NOT IN (SELECT E.snum
FROM Enrolled E );

-- Query 7
SELECT S.age, S.lv1
FROM STUDENT S
GROUP BY S.age, S.lv1
HAVING S.lv1 IN(SELECT S1.lv1
                FROM STUDENT S1
                WHERE S1.age=S.age
                GROUP BY S1.age, S1.lv1

```

```

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

```

## Output and Tables :

	Tables_in_student_faculty
▶	class
	enrolled
	faculty
	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



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



Result Grid					Filter Rows:	Edit:
	cname	metts_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		



Result Grid			Filter Rows:
	snum	cname	
▶	1	class1	
	2	class1	
	3	class3	
	4	class3	
	5	class4	
	1	class5	
	2	class5	
	3	class5	
	4	class5	
	5	class5	
•	NULL	NULL	



Result Grid			Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: <input type="checkbox"/>
	Sname				
▶	Tom				



Result Grid			Filter Rows: <input type="text"/>
	cname		
▶	class10		
	class5		
✱	NULL		

Result Grid			Filter Rows: <input type="text"/>	Export: <input type="checkbox"/>
	sname			
▶	Rahul			

Result Grid				 Filter Rows: <input type="text"/>
	fname	fid		
▶	Shiva	14		
*	NULL	NULL		

Result Grid			 Filter Rows: <input type="text"/>
	fname		
▶	Harish		
	MV		
	Mira		
	Shiva		

Result Grid			 Filter Rows: <input type="text"/>
	sname		
▶	Rita		

Result Grid				 Filter Rows: <input type="text"/>
	age	lv		
▶	19	Sr		
	20	Jr		
	21	Sr		

## **Lab Program 5:- Airline Flight Database**

```
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;

-- 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
        )
);

-- 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;

-- Query 3
select ename from employees where salary <(
select min(price) from flights where fromplace='Bangalore' and toplace='Frankfurt');

-- 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;
```

```
-- Query 5
```

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

```
-- Query 6
```

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

```
-- 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));
```

## Outputs and Tables :









Result Grid



Filter Rows:

Export:

Wrap Cell Content:


	Field	Type	Null	Key	Default	Extra
▶	fno	int	NO	PRI	NULL	
	fromplace	varchar(15)	YES		NULL	
	toplace	varchar(15)	YES		NULL	
	distance	int	YES		NULL	
	departs	datetime	YES		NULL	
	arrives	datetime	YES		NULL	
	price	int	YES		NULL	

Result Grid				Filter Rows:	<input type="text"/>	Edit:				Export/Import:			Wrap Cell Content:	
	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						

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


	Field	Type	Null	Key	Default	Extra
▶	aid	int	NO	PRI	NULL	
	aname	varchar(15)	YES		NULL	
	cruisingrange	int	YES		NULL	

Result Grid



Filter Rows:

Edit:



	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

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	Field	Type	Null	Key	Default	Extra
▶	eid	int	NO	PRI	NULL	
	ename	varchar(15)	YES		NULL	
	salary	int	YES		NULL	

Result Grid

Filter Rows:





Edit:



	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




<div> <div>Result Grid</div> <div> </div> <div>Filter Rows: <input type="text"/></div> <div>Export: </div> <div>Wrap Cell Content: </div> </div>						
	Field	Type	Null	Key	Default	Extra
▶	eid	int	YES	MUL	NULL	
	aid	int	YES	MUL	NULL	

<div> <div>Result Grid</div> <div> </div> <div>  Filter Rows: <input type="text"/> </div> <div>Export: </div> <div>Wrap Cell Content: </div> </div>		
	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

<div> <div>Result Grid</div> <div> </div> <div>  Filter Rows: <input type="text"/> </div> <div>Export: </div> <div>Wrap Cell Content: </div> </div>	
	aname
▶	747
	Dreamliner
	Dream
	707


Result Grid		 Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: 
	max(a.cruisingrange)	eid		
▶	3500	701		
	120000	702		


Result Grid		 Filter Rows: <input type="text"/>
	ename	
▶	A	
	E	

Result Grid		 Filter Rows: <input type="text"/>	Export: 	V
	avg(e.salary)	aid		
▶	75000.0000	101		
	113333.3333	104		
	50000.0000	105		
	50000.0000	106		
	113333.3333	107		

<




Result Grid







 Filter Rows:

Export:

	ename
▶	A

Result Grid			 Filter Rows: <input type="text"/>	Export: 
	aname			
▶	747			
	Dreamliner			
	Boeing			
	Dream			

Result Grid				 Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: 
	fno	departs				
▶	102	2013-05-05 07:15:31				
	106	2013-05-05 01:15:30				