LAB PROGRAM 5 (FLIGHT DATABASE)   Name: Tushar A Pai

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Queries:

```sql
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);
```

```sql
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:

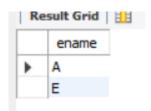|	max(a.cruisingrange)	eid
▶	3500	701
	120000	702

Query 3:

select ename from employees where salary <(

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

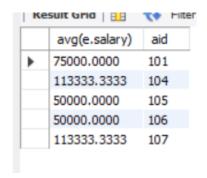Result:

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;
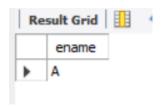
Result:

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:

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