

# LAB 5- Flight Database

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4-D

## 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;

```

Result Grid							
Filter Rows: <input type="text"/>							
	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 1   Result 2   Result 3   Result 4   flights 5 ×   aircraft 6   employees   Apply   Revert

```

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;
```

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap

	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

Form Editor

Field Types

Result 1

Result 2

Result 3

Result 4

flights 5

aircraft 6 ×

employees

Apply

Revert

```

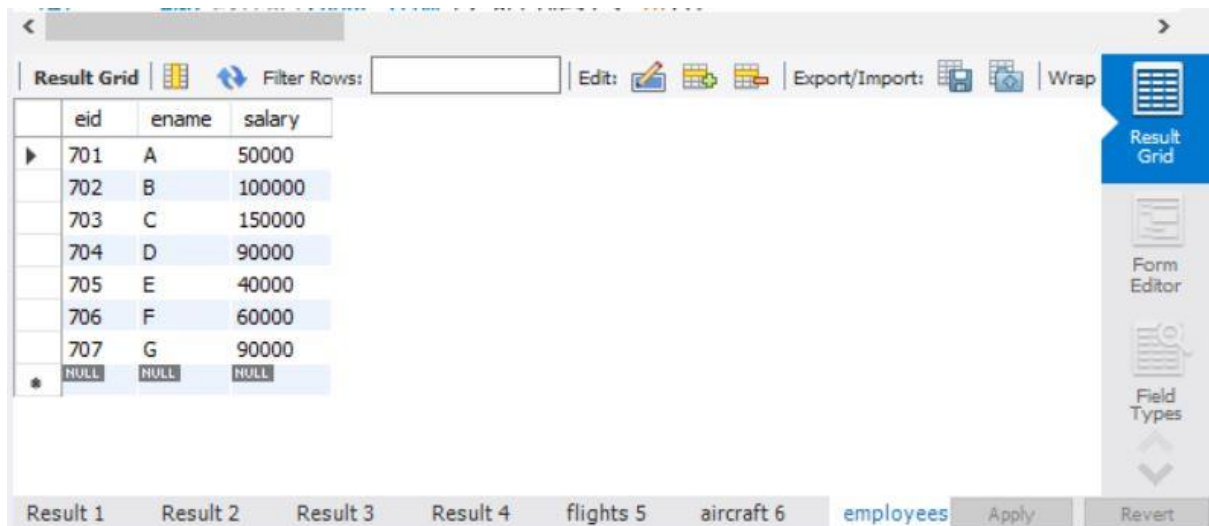
insert into employees values(701, 'A', 50000);
insert into employees values(702, 'B', 100000);
insert into employees values(703, 'C', 150000);
insert into employees values(704, 'D', 90000);
insert into employees values(705, 'E', 40000);
insert into employees values(706, 'F', 60000);
insert into employees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

```

```

select * from employees;

```



	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);
```

```
commit;
```

```
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

## Additional Queries:

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

```
    select c.aid from certified c, employees e where
```

```
    c.aid = e.aid and not exists(
```

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

```
    )
```

```
);
```

The screenshot shows a database query result grid. The top toolbar includes a 'Filter Rows' field, an 'Export' button, and a 'Wrap Cell Content' toggle. The result grid has two columns: 'aname' and an unlabeled column. The data rows are as follows:

aname	
747	
Dreamliner	
Dream	
707	

The bottom status bar shows several tabs: 'Result 3', 'Result 4', 'flights 5', 'aircraft 6', 'employees 7', 'certified 8', 'aircraft 9' (active), and 'Read Only'.

n

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;

The screenshot shows a database query result grid. The top toolbar is identical to the first image. The result grid has two columns: 'max(a.cruisingrange)' and 'eid'. The data rows are as follows:

max(a.cruisingrange)	eid
3500	701
120000	702

The bottom status bar shows tabs: 'aircraft 9', 'Result 10' (active), 'employees 11', 'Result 12', 'employees 13', 'aircraft 14', and 'Result : Read Only'.

select ename from employees where salary <(

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

Result Grid

	ename
▶	A
	E

aircraft 9   Result 10   **employees 11** ×   Result 12   employees 13   aircraft 14   Result 14   Read Only

```
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 Grid

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

aircraft 9   Result 10   employees 11   **Result 12** ×   employees 13   aircraft 14   Result 14   Read Only

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

The screenshot shows a database query tool interface. At the top, there is a toolbar with icons for 'Result Grid', 'Filter Rows', 'Export', and 'Wrap Cell Content'. Below the toolbar, a table with the column 'ename' is displayed, containing a single row with the value 'A'. On the right side, there is a vertical toolbar with icons for 'Result Grid', 'Form Editor', 'Field Types', and 'Query Stats'. At the bottom, a tab bar shows several tabs: 'aircraft 9', 'Result 10', 'employees 11', 'Result 12', 'employees 13' (which is the active tab), 'aircraft 14', and 'Result 1'. The 'employees 13' tab is highlighted in blue.

ename
A

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

The screenshot shows the same database query tool interface as the first image. The 'Result Grid' tab is active, and the table now displays four rows of data under the column 'aname'. The values are '747', 'Dreamliner', 'Boeing', and 'Dream'. The 'employees 13' tab is still active in the bottom tab bar.

aname
747
Dreamliner
Boeing
Dream

SELECT F.fln, 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 Grid

Filter Rows:

Export:

Wrap Cell Content:

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

Result Grid

Form Editor

Field Types

Query Stats

aircraft 9   Result 10   employees 11   Result 12   employees 13   aircraft 14   Result : Read Only