PROGRAM 5

Consider the following database that keeps track of airline flight information:

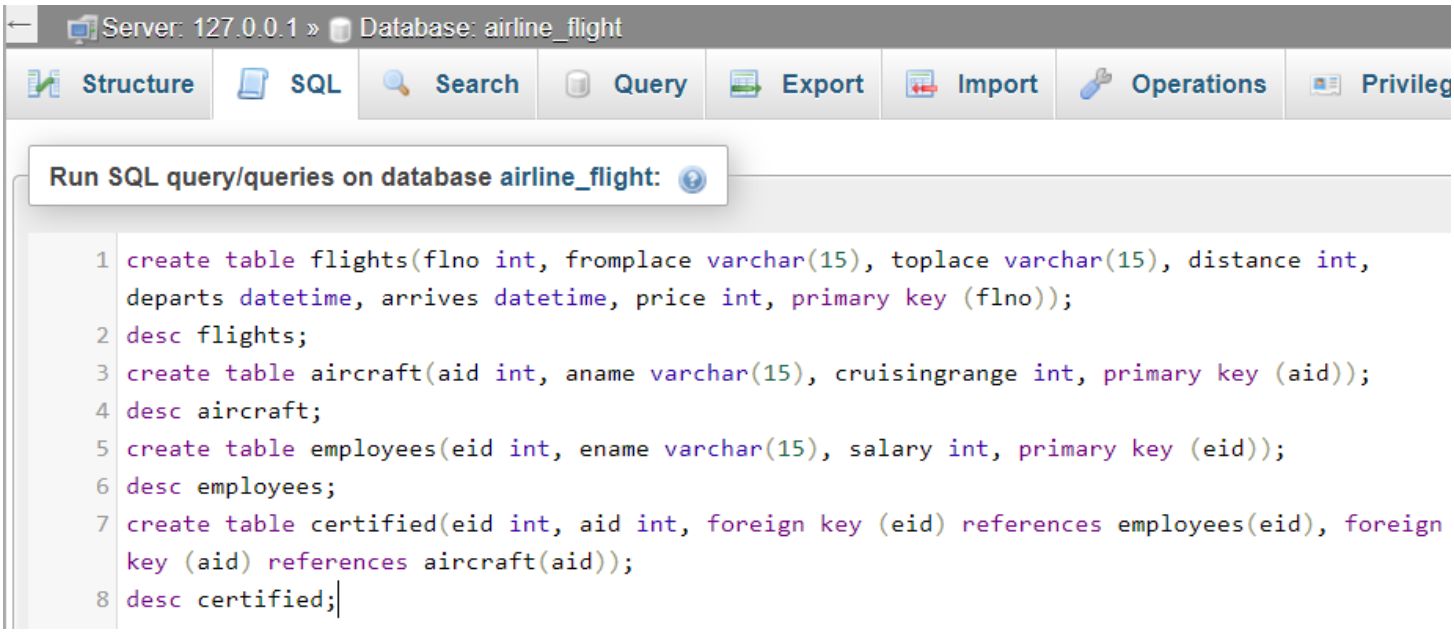
FLIGHTS (flno: integer, from: string, to: string, distance: integer, departs: time, arrives: time, price: integer)

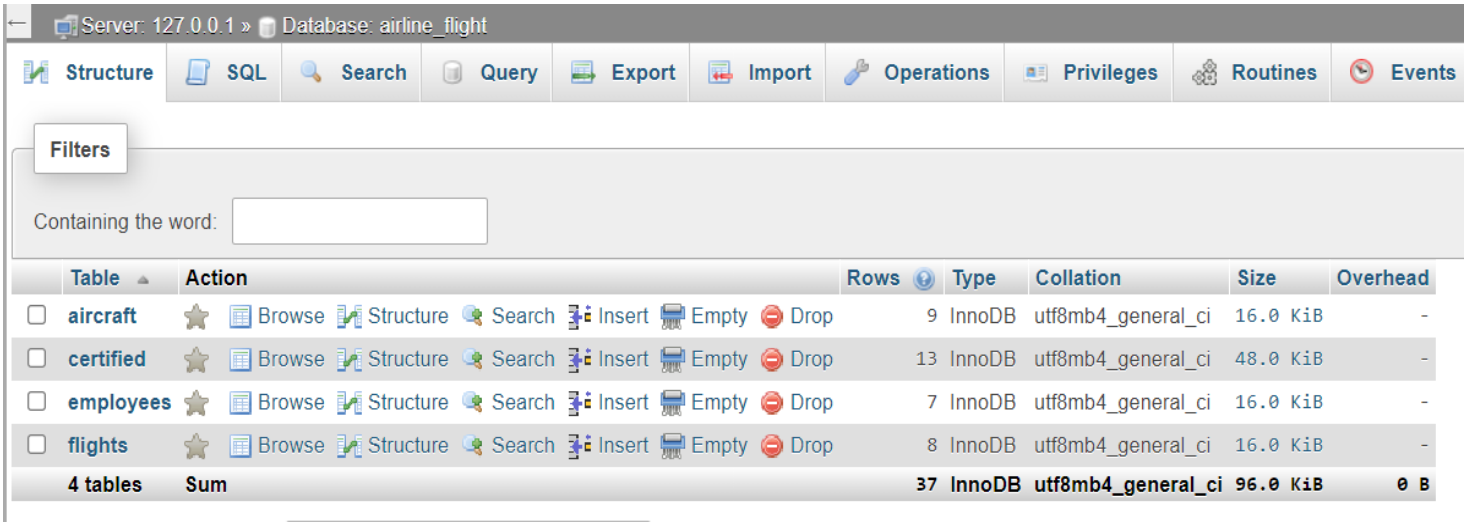
AIRCRAFT (aid: integer, aname: string, cruisingrange: integer)

CERTIFIED (eid: integer, aid: integer)

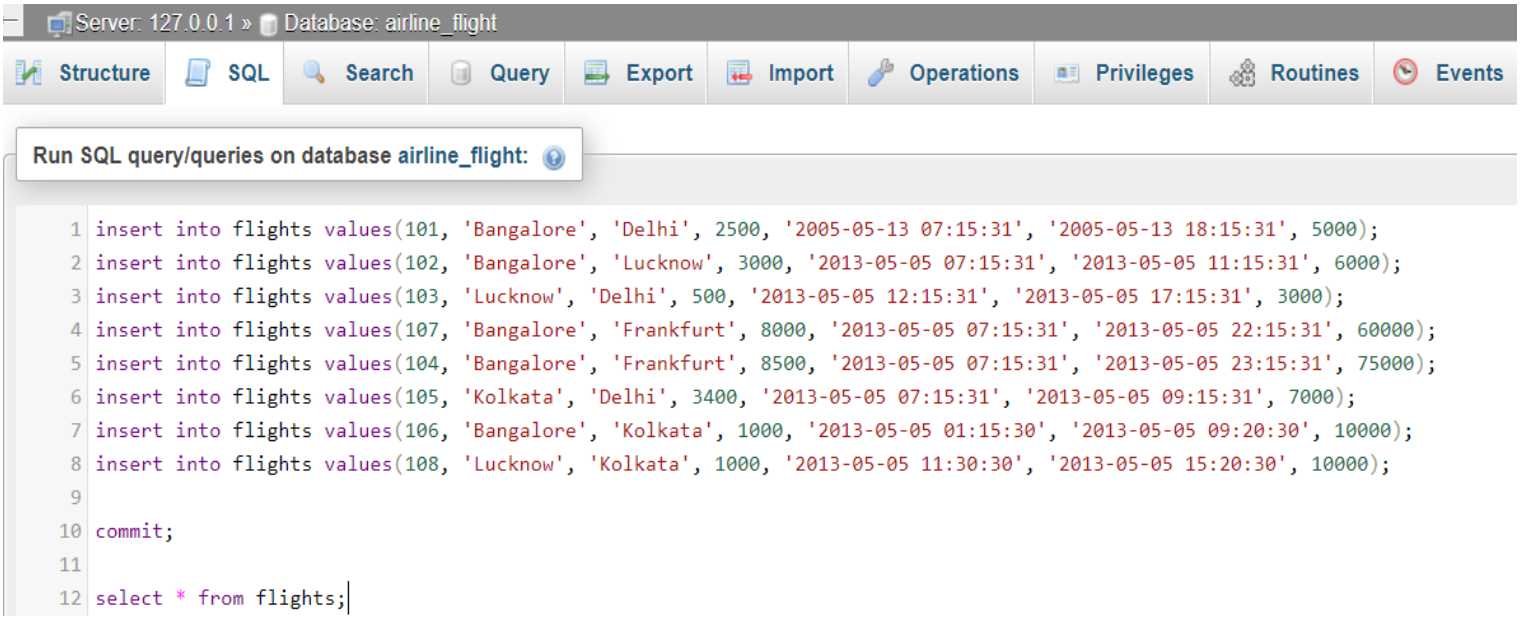
EMPLOYEES (eid: integer, ename: string, salary: integer)

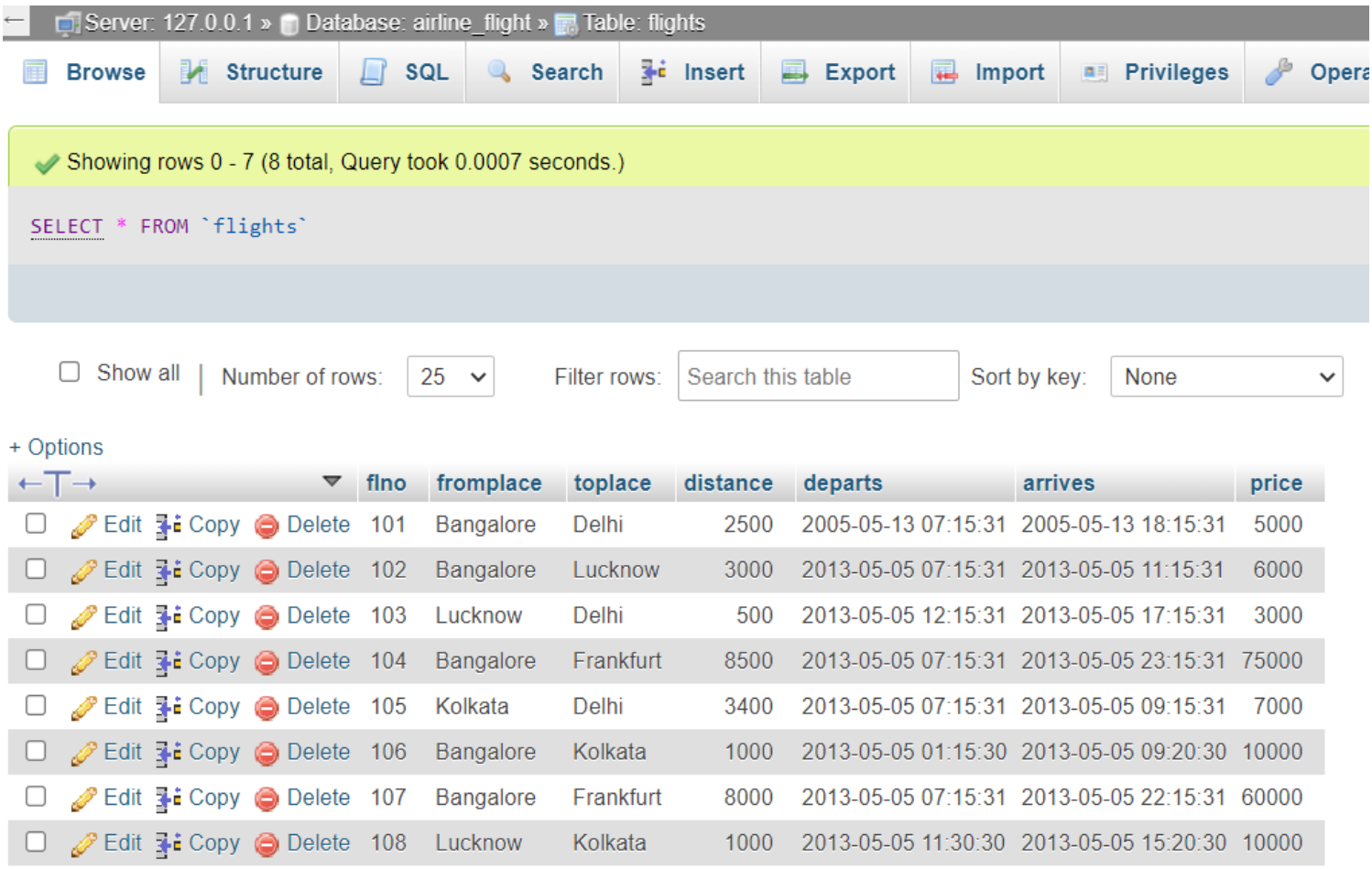
Note that the Employees relation describes pilots and other kinds of employees as well. Every pilot is certified for some aircraft and only pilots are certified to fly. Write each of the following queries in SQL.





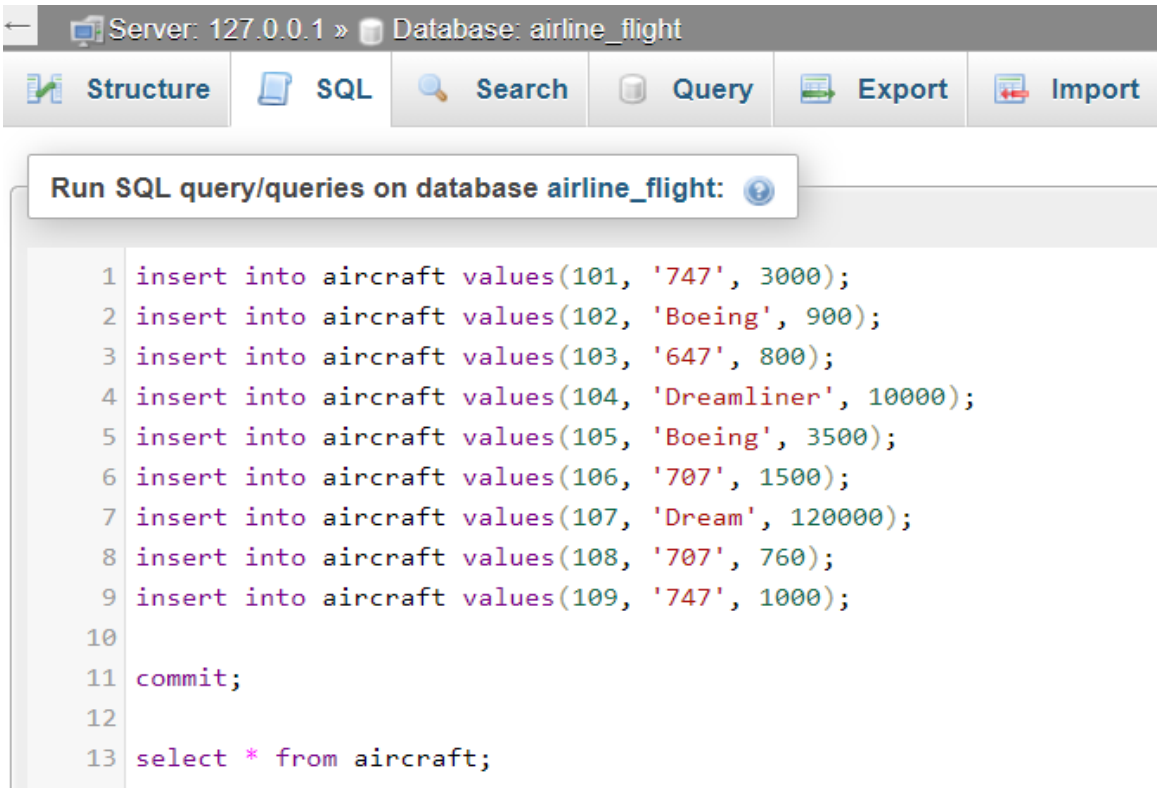
‘FLIGHTS’ table:

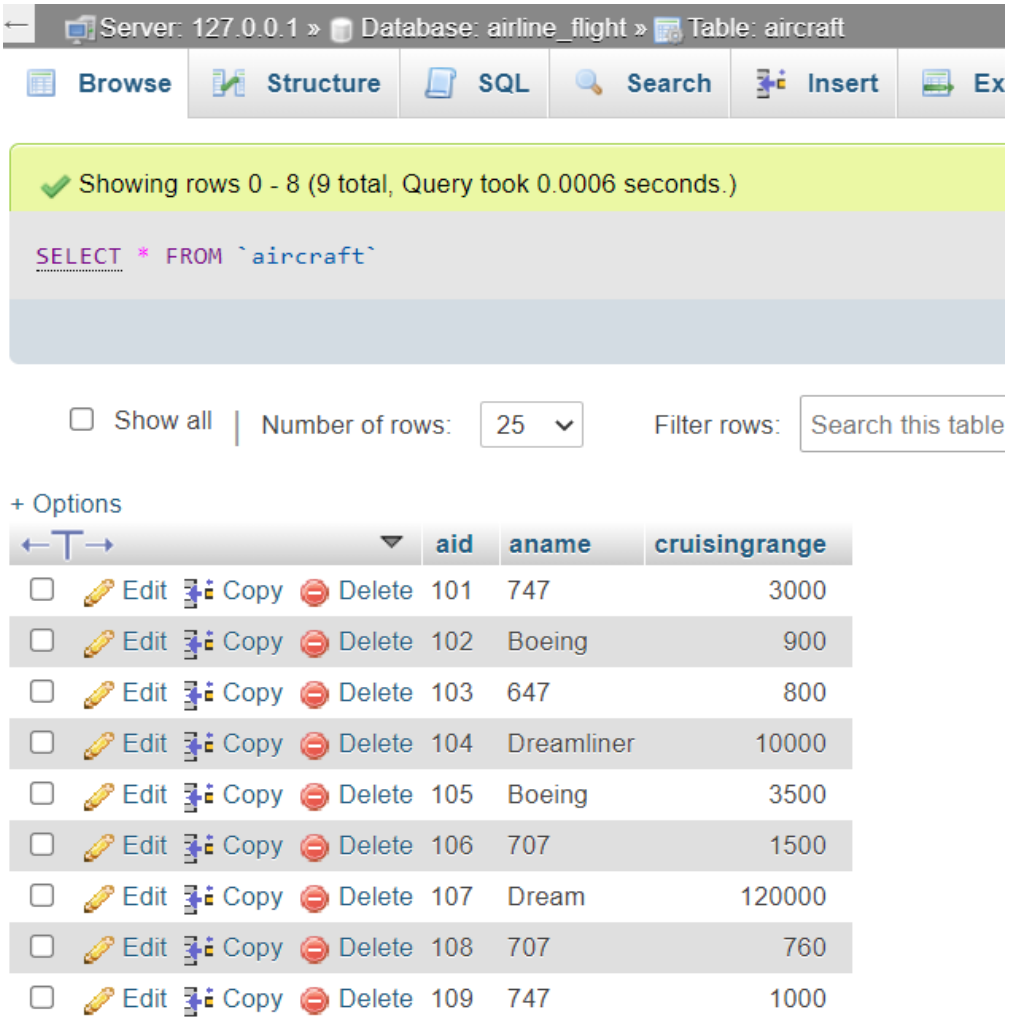




	flno	fromplace	toplace	distance	departs	arrives	price
Edit Copy Delete	101	Bangalore	Delhi	2500	2005-05-13 07:15:31	2005-05-13 18:15:31	5000
Edit Copy Delete	102	Bangalore	Lucknow	3000	2013-05-05 07:15:31	2013-05-05 11:15:31	6000
Edit Copy Delete	103	Lucknow	Delhi	500	2013-05-05 12:15:31	2013-05-05 17:15:31	3000
Edit Copy Delete	104	Bangalore	Frankfurt	8500	2013-05-05 07:15:31	2013-05-05 23:15:31	75000
Edit Copy Delete	105	Kolkata	Delhi	3400	2013-05-05 07:15:31	2013-05-05 09:15:31	7000
Edit Copy Delete	106	Bangalore	Kolkata	1000	2013-05-05 01:15:30	2013-05-05 09:20:30	10000
Edit Copy Delete	107	Bangalore	Frankfurt	8000	2013-05-05 07:15:31	2013-05-05 22:15:31	60000
Edit Copy Delete	108	Lucknow	Kolkata	1000	2013-05-05 11:30:30	2013-05-05 15:20:30	10000

‘AIRCRAFT’ table:





	aid	aname	cruisingrange
Edit Copy Delete	101	747	3000
Edit Copy Delete	102	Boeing	900
Edit Copy Delete	103	647	800
Edit Copy Delete	104	Dreamliner	10000
Edit Copy Delete	105	Boeing	3500
Edit Copy Delete	106	707	1500
Edit Copy Delete	107	Dream	120000
Edit Copy Delete	108	707	760
Edit Copy Delete	109	747	1000

‘EMPLOYEES’ table:

Server: 127.0.0.1 » Database: airline_flight

Structure | SQL | Search | Query | Export | Import

Run SQL query/queries on database airline_flight:

```
1  insert into employees values(701, 'A', 50000);
2  insert into employees values(702, 'B', 100000);
3  insert into employees values(703, 'C', 150000);
4  insert into employees values(704, 'D', 90000);
5  insert into employees values(705, 'E', 40000);
6  insert into employees values(706, 'F', 60000);
7  insert into employees values(707, 'G', 90000);
8
9  commit;
10
11 select * from employees;
```

Server: 127.0.0.1 » Database: airline_flight » Table: employees

Browse | Structure | SQL | Search | Insert

Showing rows 0 - 6 (7 total, Query took 0.0006 seconds.)

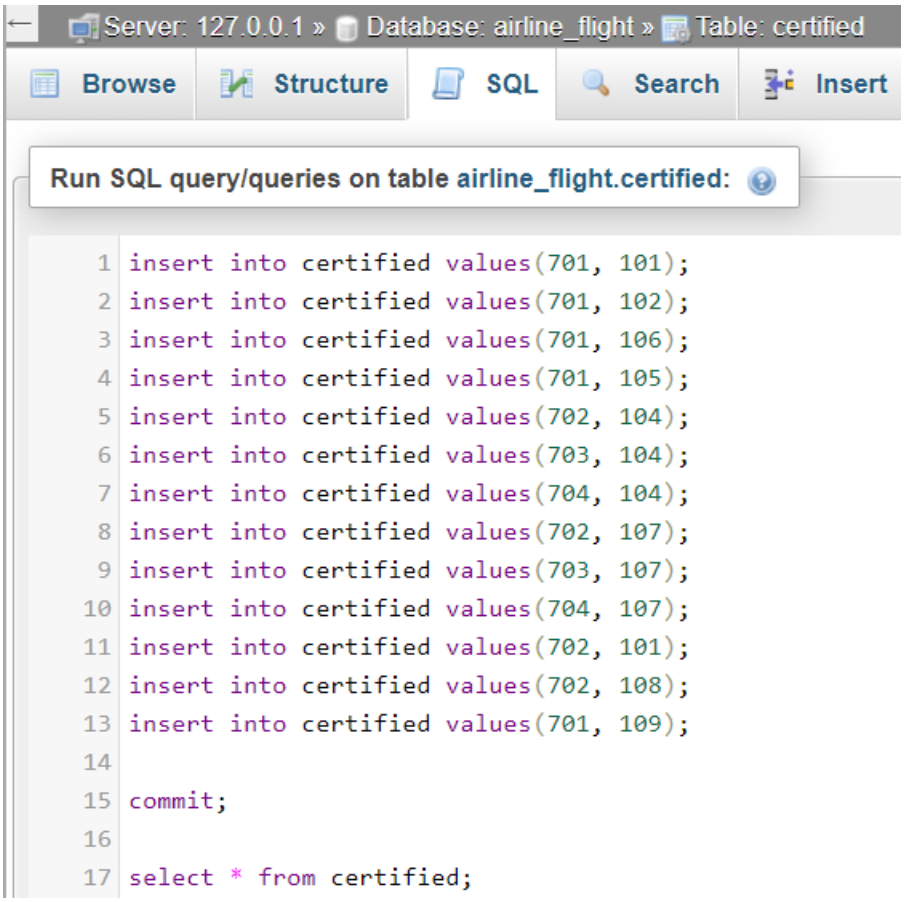
```
SELECT * FROM `employees`
```

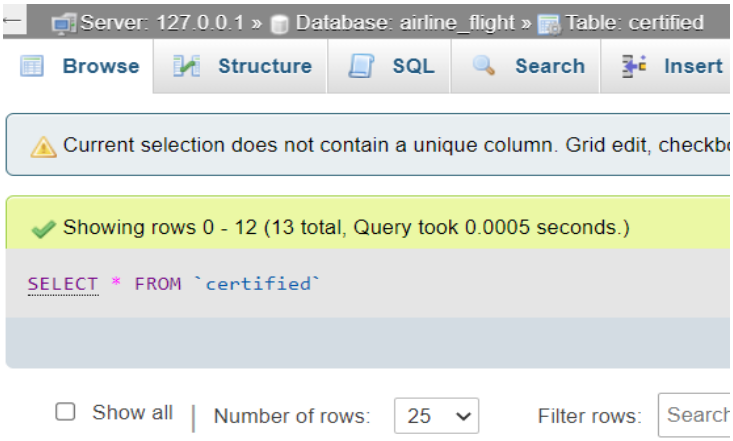
Show all | Number of rows: 25 Filter rows: Search

+ Options

	eid	ename	salary
Edit Copy Delete	701	A	50000
Edit Copy Delete	702	B	100000
Edit Copy Delete	703	C	150000
Edit Copy Delete	704	D	90000
Edit Copy Delete	705	E	40000
Edit Copy Delete	706	F	60000
Edit Copy Delete	707	G	90000

‘CERTIFIED’ table:

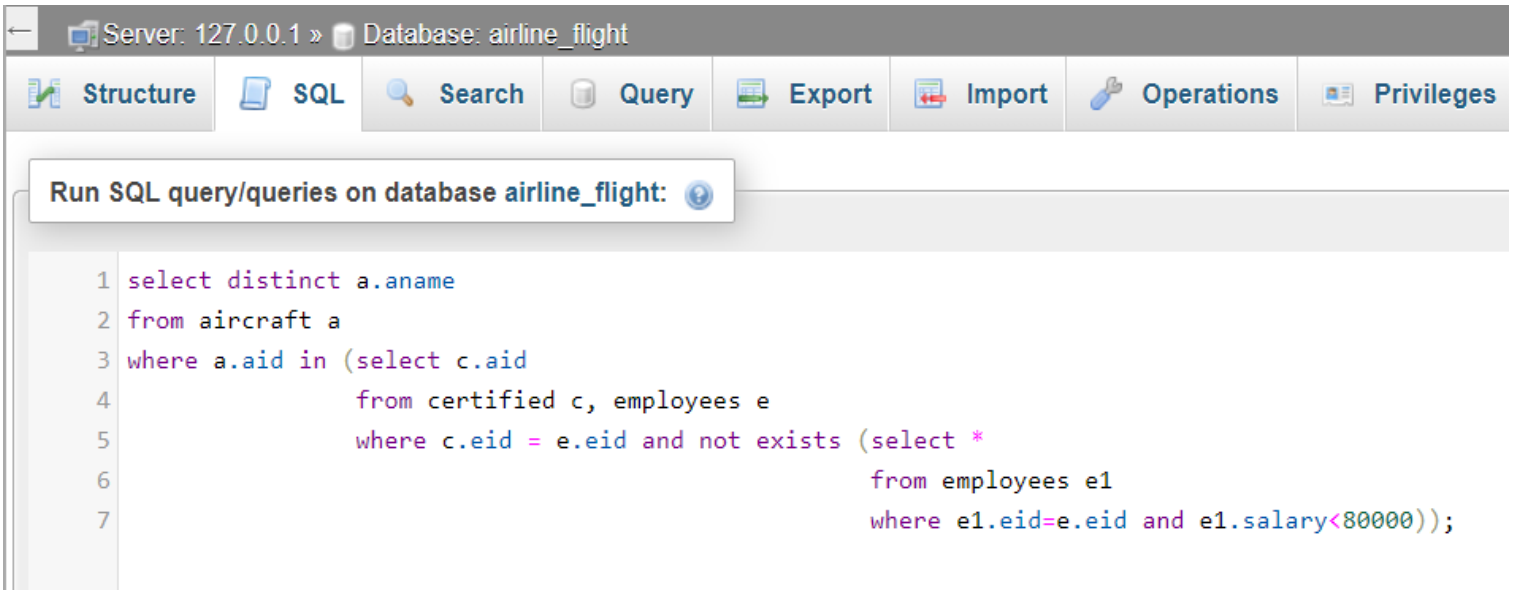


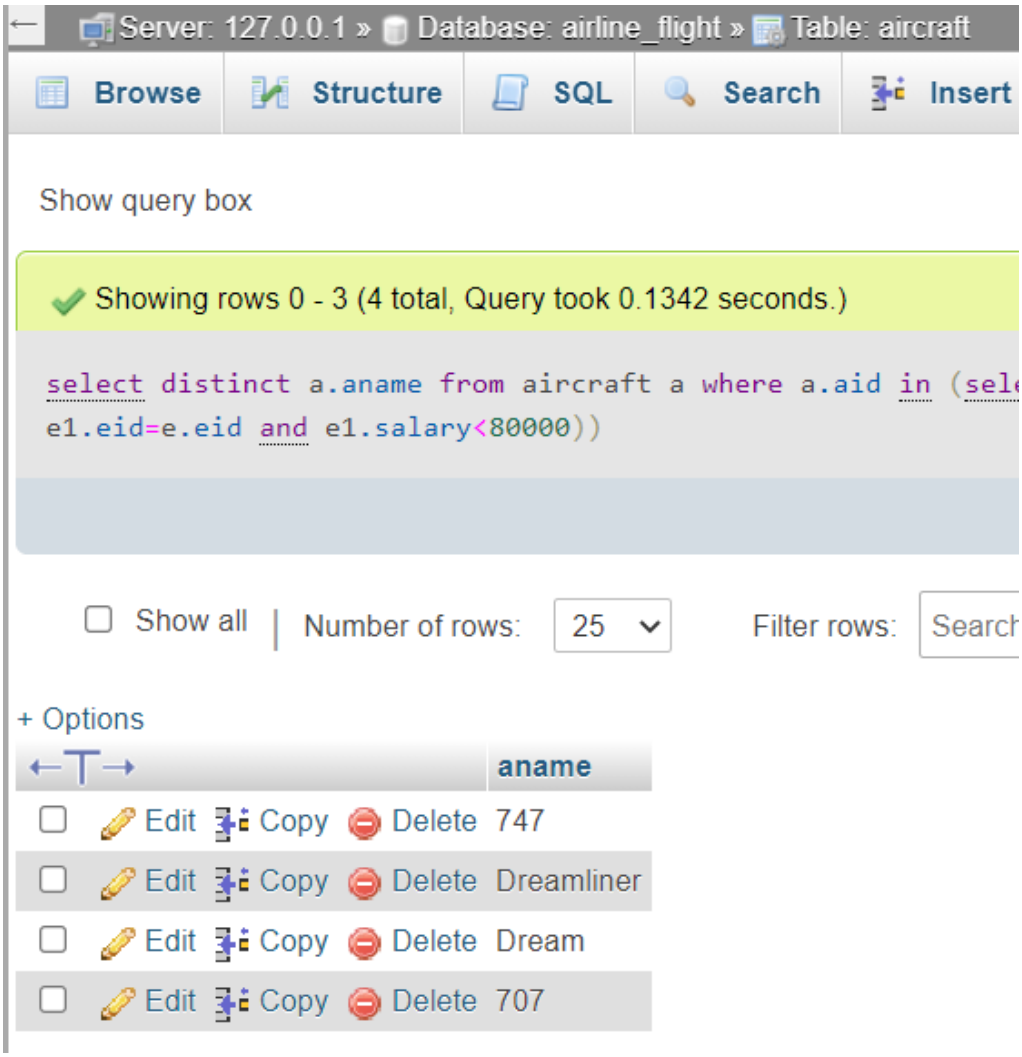


+ Options

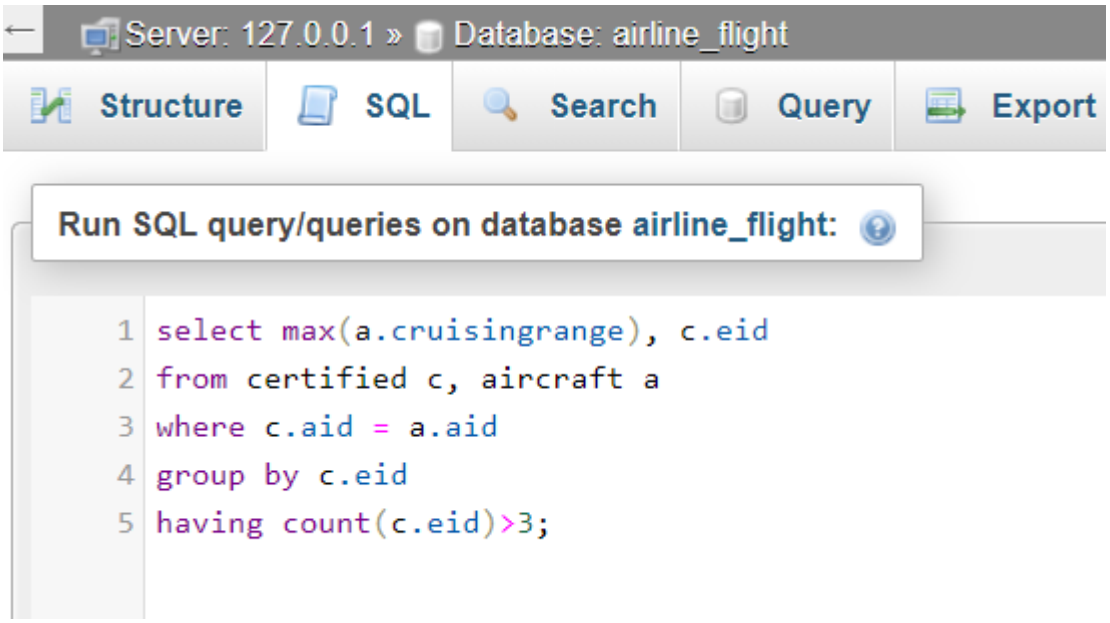
eid	aid
701	101
701	102
701	106
701	105
702	104
703	104
704	104
702	107
703	107
704	107
702	101
702	108
701	109

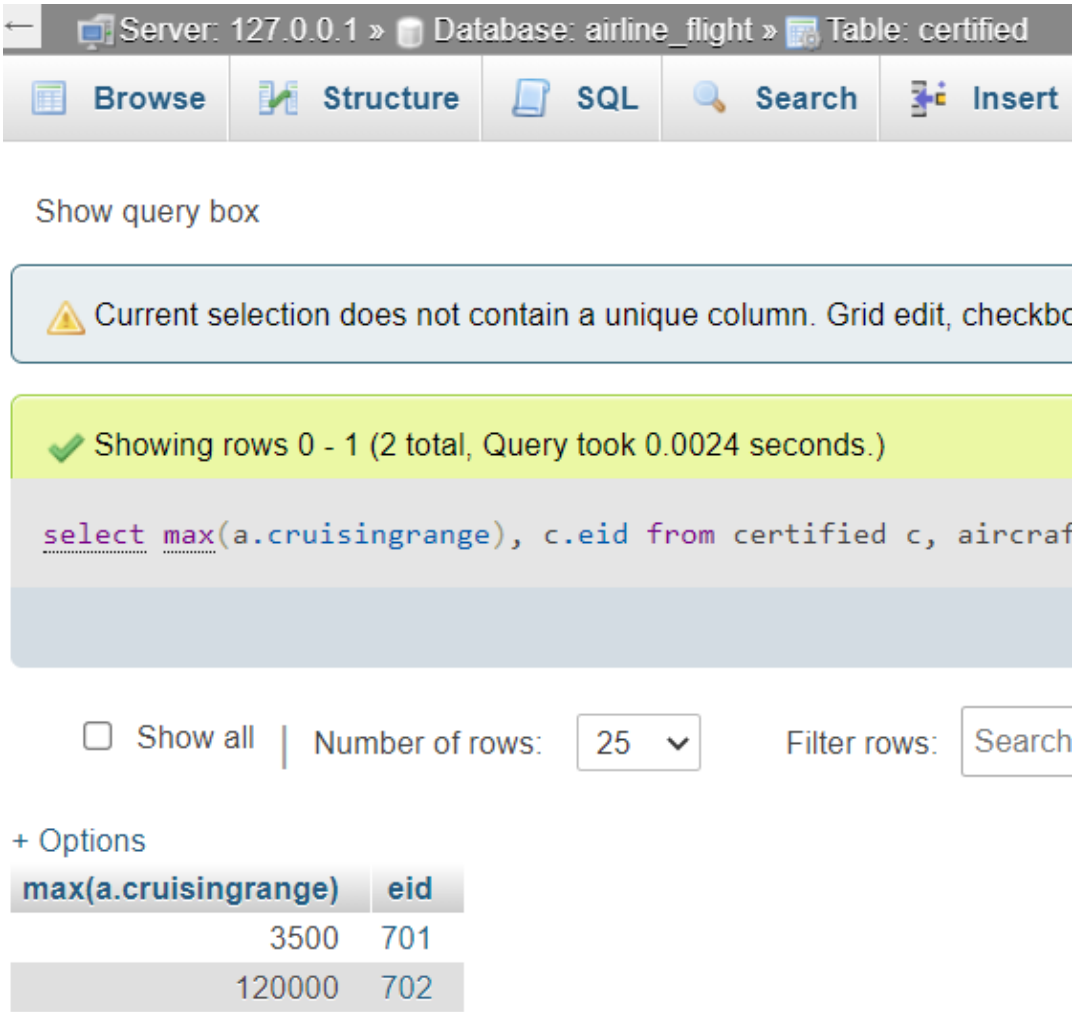
1) Find the names of aircraft such that all pilots certified to operate them have salaries more than Rs.80,000.





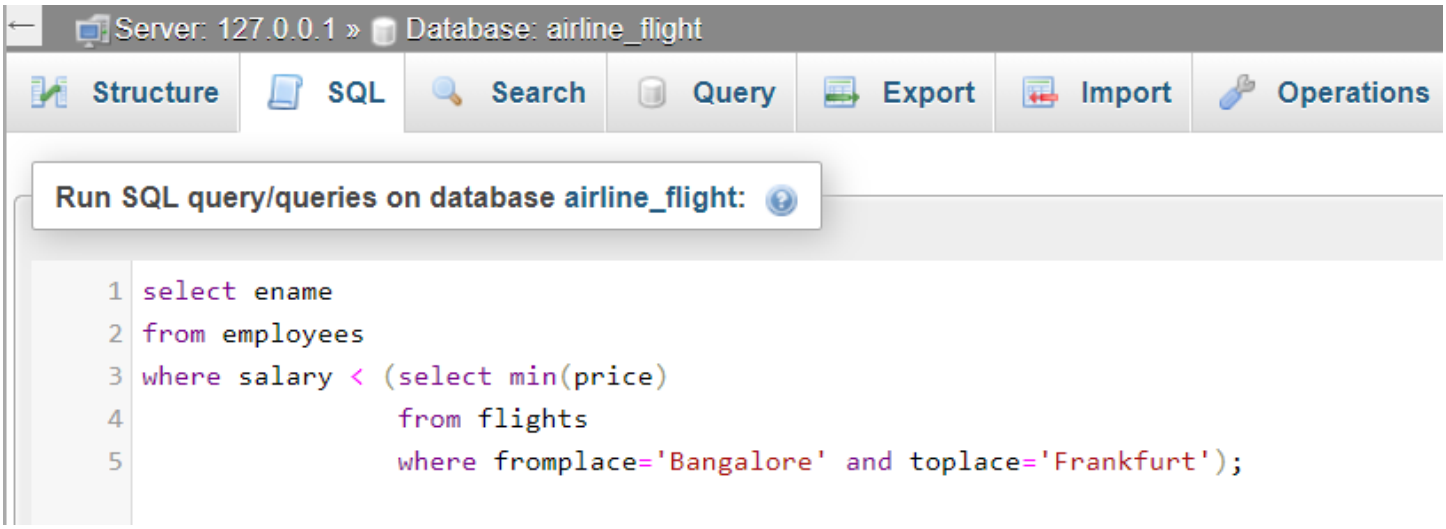
2) For each pilot who is certified for more than three aircrafts, find the eid and the maximum cruising range of the aircraft for which she or he is certified.

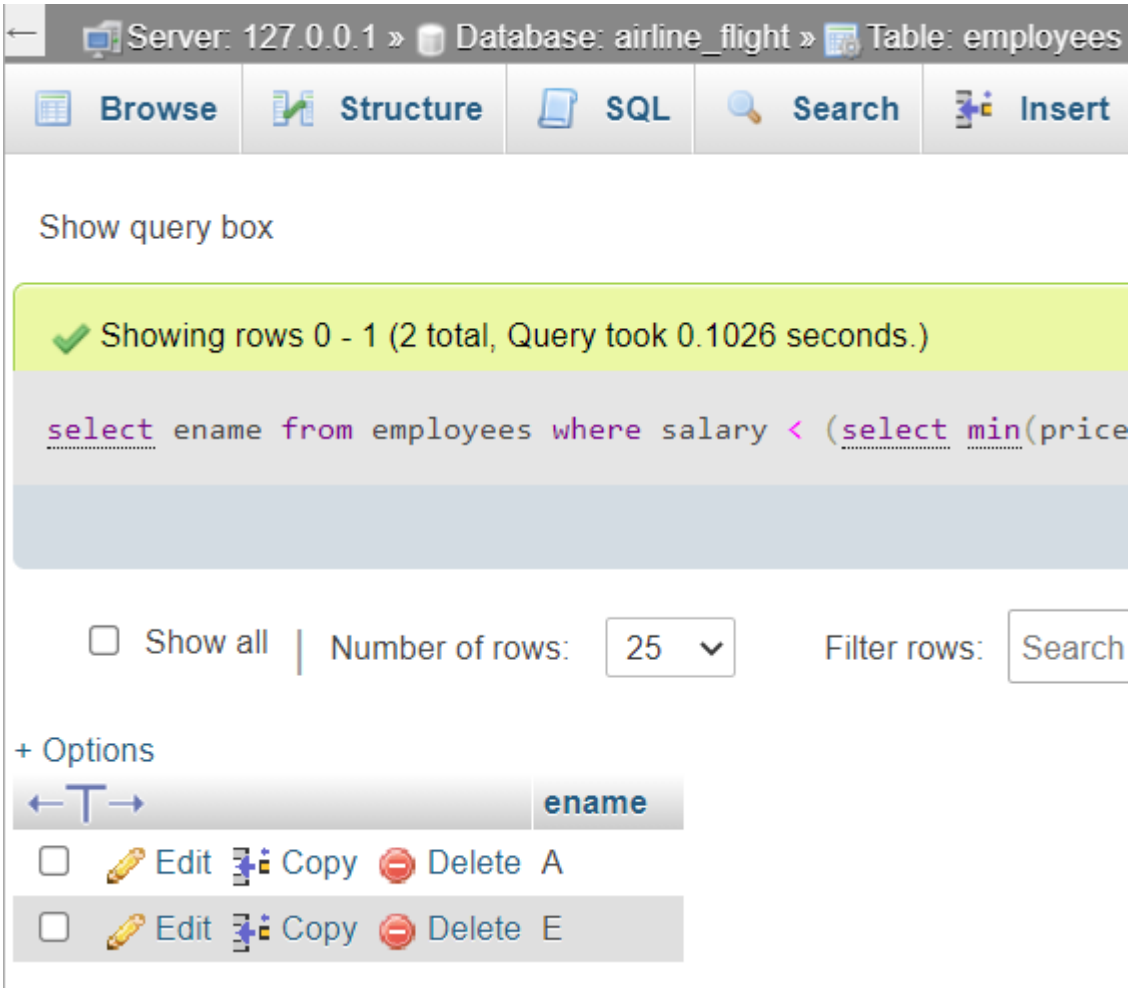




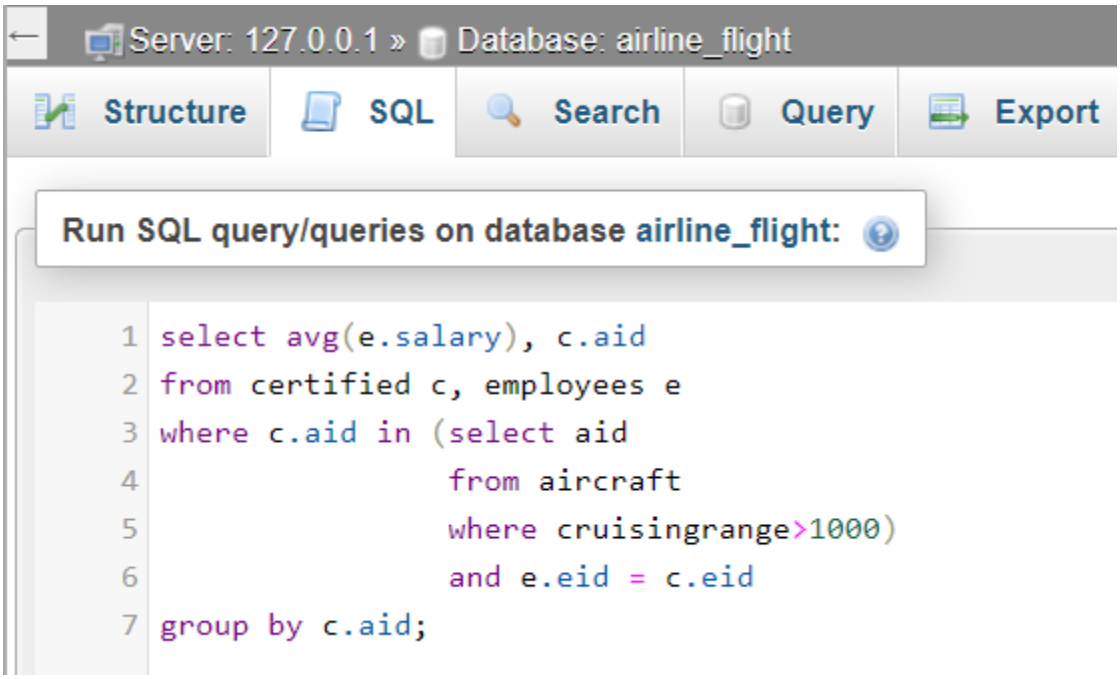
max(a.cruisingrange)	eid
3500	701
120000	702

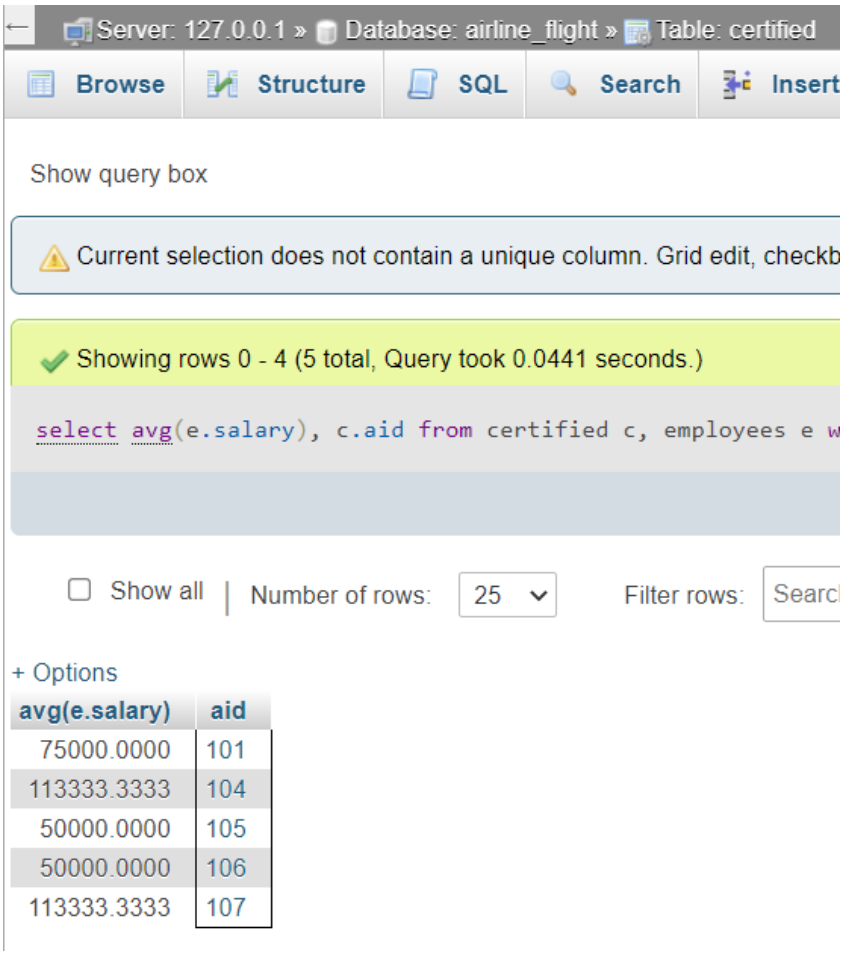
3) Find the names of pilots whose salary is less than the price of the cheapest route from Bengaluru to Frankfurt.





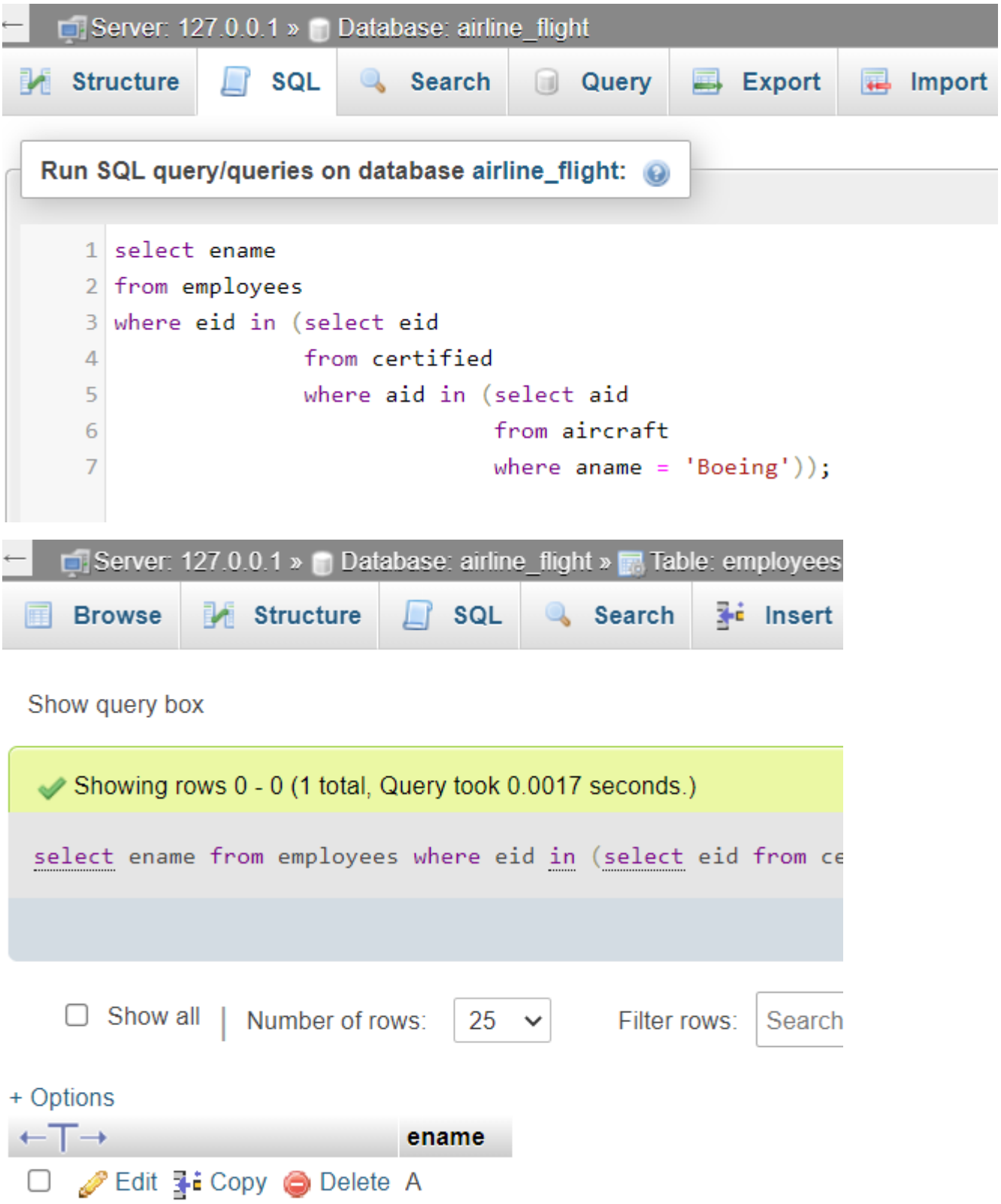
4) For all aircraft with cruising range over 1000 Kms, find the name of the aircraft and the average salary of all pilots certified for this aircraft.



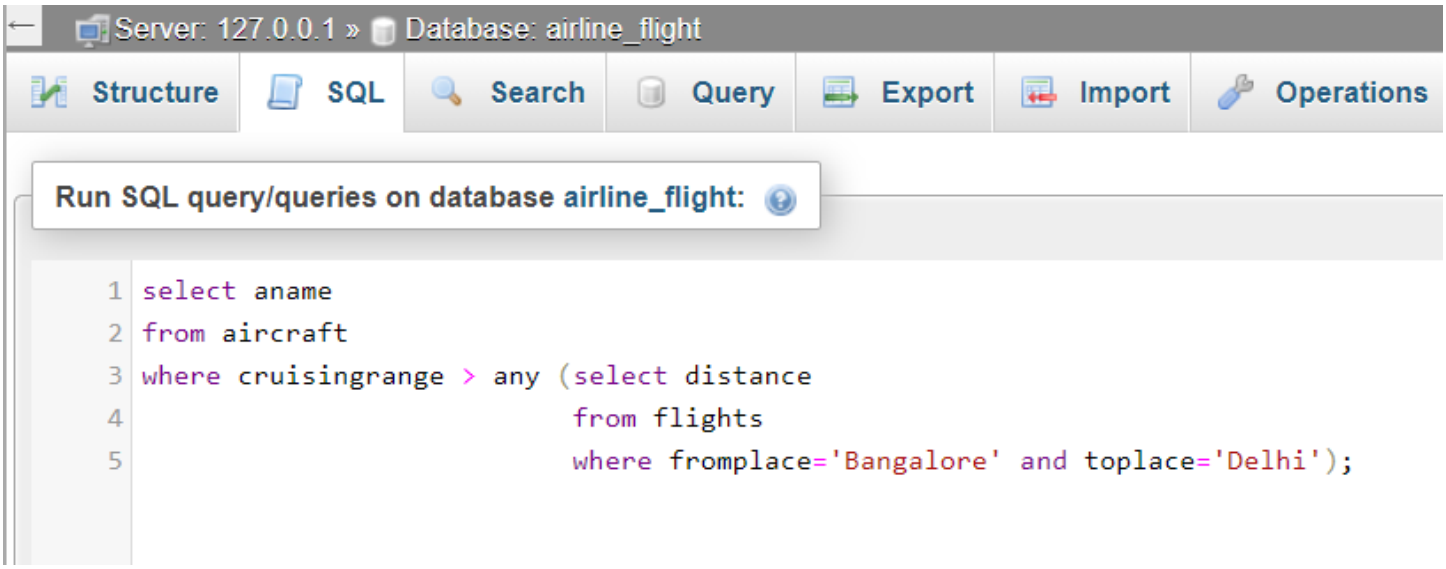


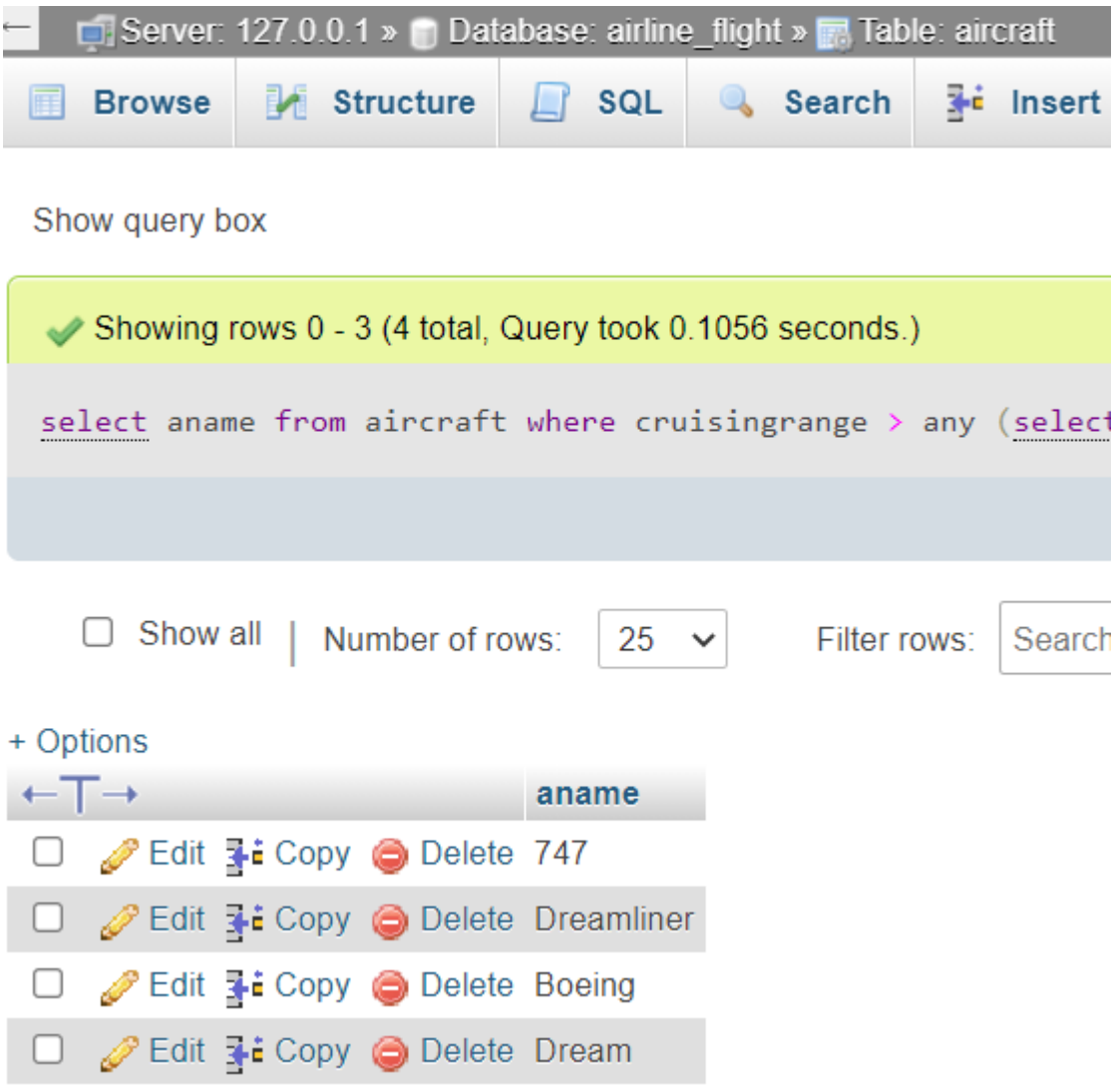
avg(e.salary)	aid
75000.0000	101
113333.3333	104
50000.0000	105
50000.0000	106
113333.3333	107

5) Find the names of pilots certified for some Boeing aircraft.



6) Find the aids of all aircraft that can be used on routes from Bengaluru to Delhi.





7) A customer wants to travel from Bangalore to Kolkata with no more than two changes of flight. List the choice of departure times from Bangalore if the customer wants to arrive in Kolkata by 6 p.m.

Server: 127.0.0.1 » Database: airline_flight

Structure | SQL | Search | Query | Export | Import | Operations

Run SQL query/queries on database airline_flight:

```
1  select F.flno, F.departs
2  from flights F
3  where F.flno in ( (select F0.flno
4                     from flights F0
5                     where F0.fromplace = 'Bangalore' and F0.toplace = 'Kolkata'
6                     and extract(hour from F0.arrives) < 18)
7                     UNION
8                    (select F0.flno
9                     from flights F0, flights F1
10                    where F0.fromplace = 'Bangalore' and F0.toplace <> 'Kolkata'
11                    and F0.toplace = F1.fromplace and F1.toplace = 'Kolkata'
12                    and F1.departs > F0.arrives
13                    and extract(hour from F1.arrives) < 18)
14                    UNION
15                   (select F0.flno
16                    from flights F0, flights F1, flights F2
17                    where F0.fromplace = 'Bangalore'
18                    and F0.toplace = F1.fromplace
19                    and F1.toplace = F2.fromplace
20                    and F2.toplace = 'Kolkata'
21                    and F0.toplace <> 'Kolkata'
22                    and F1.toplace <> 'Kolkata'
23                    and F1.departs > F0.arrives
24                    and F2.departs > F1.arrives
25                    and extract(hour from F2.arrives) < 18));
```

+ Options

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