**AIRLINE DBMS SCHEMA**

* Airline tables and tables records.

airline=# \d

List of relations

Schema | Name | Type | Owner

--------+-----------+-------+----------

public | aircraft | table | postgres

public | certified | table | postgres

public | employees | table | postgres

public | flights | table | postgres

(4 rows)

flights tables records: -

airline=# select \*from flights;

fl\_no | form\_city | to\_city | distance | departure | arrives | price | eid

-------+-------------+----------+----------+-----------+----------+-------+-----

3407 | mexico | peris | 4120 | 07:00:00 | 20:30:00 | 4870 | 412

2309 | japan | indian | 1530 | 19:45:00 | 06:30:00 | 2500 | 412

2207 | rom | new york | 2107 | 14:40:00 | 23:30:00 | 5000 | 412

3204 | south xsd | russia | 2539 | 08:45:00 | 18:30:00 | 4370 | 115

4404 | Los Angeles | Honolulu | 1750 | 12:50:00 | 07:00:00 | 3570 | 221

1704 | Los Angeles | Honolulu | 1750 | 15:50:00 | 01:00:00 | 3570 | 362

5501 | Los Angeles | Honolulu | 1750 | 11:15:00 | 17:05:00 | 1200 | 222

3305 | delhi | america | 9000 | 01:00:00 | 22:15:00 | 15000 | 741

(8 rows)

employees tables records:-

airline=# select \*from employees;

eid | ename | salary

-----+-------------+------------

412 | jhon | 90000

253 | johson wild | 50000

362 | nicky zoo | 5000

115 | jack ham | 700

221 | domd kick | 1500

551 | zzz | 150150

741 | raja singh | 110152.025

671 | chirs jhon | 90152.025

222 | mic t | 1150

195 | pooja | 50000

212 | merry | 35000

404 | ror rac | 60000

5 | wer | 6000

7 | jack hill | 8500

(14 rows)

aircraft tables records : -

airline=# select \*from aircraft;

aid | aname | cruisingrange

-----+-----------------+---------------

526 | dark moon fly | 10000

362 | skyblue fly | 5000

441 | redcross fly | 1000

263 | Boeing aircraft | 3300

210 | zse aircraft | 1500

219 | van aircraft | 900

(6 rows)

certified tables records:-

airline=# select \*from certified;

eid | aid

-----+-----

115 | 263

115 | 362

362 | 263

412 | 441

741 | 441

671 | 526

115 | 441

115 | 526

221 | 263

221 | 441

221 | 526

221 | 362

5 | 210

7 | 219

7 | 263

412 | 219

(16 rows)

**Question and Answer : -**

**Question A :-**  Find the names of aircraft such that all pilots certified to operate them earn

more than $80,000.

**Answer : -**

airline=# select employees.eid,ename,aircraft.aid,aname,salary from employees inner join certified on certified.eid = employees.eid inner join aircraft on aircraft.aid = certified.aid where employees.salary > 80000;

eid | ename | aid | aname | salary

-----+------------+-----+---------------+------------

412 | jhon | 441 | redcross fly | 90000

741 | raja singh | 441 | redcross fly | 110152.025

671 | chirs jhon | 526 | dark moon fly | 90152.025

(3 rows)

**Question B:-** For each pilot who is certified for more than three aircraft, find the eid and the

maximum cruisingrange of the aircraft for which she or he is certified.

**Answer : -**

airline=# select eid,max(cruisingrange),count(eid) from certified inner join aircraft on aircraft.aid = certified.aid group by eid having count(eid)>3;

eid | max | count

-----+-------+-------

115 | 10000 | 4

221 | 10000 | 4

(2 rows)

**Question C** :- Find the names of pilots whose salary is less than the price of the cheapest

route from Los Angeles to Honolulu.

**Answer :-**

airline=# select ename,salary from flights inner join employees on employees.salary < price where price = (select min(price) from flights);

ename | salary

----------+--------

jack ham | 700

mic t | 1150

(2 rows)

**Question D** :- For all aircraft with cruisingrange over 1000 miles, find the name of the

aircraft and the average salary of all pilots certified for this aircraft.

**Answer : -**

airline=# select aircraft.aid,aname,cruisingrange,certified.eid,avg(salary) from aircraft inner join certified on certified.aid = aircraft.aid inner join employees on employees.eid=certified.eid where cruisingrange >1000 group by aircraft.aid,certified.eid;

aid | aname | cruisingrange | eid | avg

-----+---------------+---------------+-----+-----------------------

362 | skyblue fly | 5000 | 221 | 1500.0000000000000000

526 | dark moon fly | 10000 | 671 | 90152.025000000000

263 | wine fly | 3000 | 362 | 5000.0000000000000000

526 | dark moon fly | 10000 | 221 | 1500.0000000000000000

263 | wine fly | 3000 | 221 | 1500.0000000000000000

526 | dark moon fly | 10000 | 115 | 700.0000000000000000

362 | skyblue fly | 5000 | 115 | 700.0000000000000000

263 | wine fly | 3000 | 115 | 700.0000000000000000

(8 rows)

**Question E** :- Find the names of pilots certified for some Boeing aircraft.

**Answer : -**

airline=# select aircraft.aid,aname,cruisingrange,certified.eid,ename from aircraft inner join certified on certified.aid = aircraft.aid inner join employees on employees.eid=certified.eid where aname='Boeing aircraft';

aid | aname | cruisingrange | eid | ename

-----+-----------------+---------------+-----+-----------

263 | Boeing aircraft | 3000 | 115 | jack ham

263 | Boeing aircraft | 3000 | 362 | nicky zoo

263 | Boeing aircraft | 3000 | 221 | domd kick

(3 rows)

**Question F** :- Find the aids of all aircraft that can be used on routes from Los Angeles to

Chicago.

**Answer : -**

airline=# select fl\_no,form\_city,to\_city,aircraft.aid,aname,flights.eid from flights inner join certified on certified.eid = flights.eid inner join aircraft on aircraft.aid = certified.aid where form\_city = 'Los Angeles' and to\_city = 'Honolulu';

fl\_no | form\_city | to\_city | aid | aname | eid

-------+-------------+----------+-----+-----------------+-----

1704 | Los Angeles | Honolulu | 263 | Boeing aircraft | 362

4404 | Los Angeles | Honolulu | 263 | Boeing aircraft | 221

4404 | Los Angeles | Honolulu | 441 | redcross fly | 221

4404 | Los Angeles | Honolulu | 526 | dark moon fly | 221

4404 | Los Angeles | Honolulu | 362 | skyblue fly | 221

(5 rows)

**Question G** :- Identify the routes that can be piloted by every pilot who makes more than

$100,000.

**Answer : -**

airline=# select form\_city,to\_city,employees.eid,ename,salary from employees inner join flights on flights.eid = employees.eid where employees.salary >100000;

form\_city | to\_city | eid | ename | salary

-----------+---------+-----+------------+------------

delhi | america | 741 | raja singh | 110152.025

(1 row)

**Question H** :- Print the enames of pilots who can operate planes with cruisingrange greater

than 3000 miles but are not certified on any Boeing aircraft.

**Answer : -**

airline=# select ename,cruisingrange,aircraft.aid,aname from aircraft inner join certified on certified.aid = aircraft.aid inner join employees on employees.eid = certified.eid where aname <> 'Boeing aircraft' and cruisingrange > 3000;

ename | cruisingrange | aid | aname

------------+---------------+-----+---------------

jack ham | 5000 | 362 | skyblue fly

chirs jhon | 10000 | 526 | dark moon fly

jack ham | 10000 | 526 | dark moon fly

domd kick | 10000 | 526 | dark moon fly

domd kick | 5000 | 362 | skyblue fly

(5 rows)

**Question I** :- A customer wants to travel from Madison to New York with no more than two

changes of flight. List the choice of departure times from Madison if the

customer wants to arrive in New York by 6 p.m.

**Question J** :- Compute the difference between the average salary of a pilot and the average

salary of all employees (including pilots).

**Answer : -**

airline=# select avg(salary) as difference from employees union select avg(salary) from employees inner join certified on employees.eid = certified.eid;

difference

--------------------

25342.004166666667

53650.337500000000

(2 rows)

**Question K** :- Print the name and salary of every nonpilot whose salary is more than the

average salary for pilots.

**Answer : -**

airline=# select employees.eid,ename,salary from employees where employees.eid not in (select eid from certified) and salary > (select avg(salary)

from employees inner join certified on employees.eid = certified.eid);

eid | ename | salary

-----+-------------+--------

253 | johson wild | 50000

551 | zzz | 150150

195 | pooja | 50000

212 | merry | 35000

404 | ror rac | 60000

(5 rows)

**Question L** :- Print the names of employees who are certified only on aircrafts with cruising

range longer than 1000 miles.

**Answer :-**

airline=# select employees.eid,ename,cruisingrange from certified inner join aircraft on aircraft.aid = certified.aid inner join employees on employees.eid = certified.eid where cruisingrange>1000;

eid | ename | cruisingrange

-----+------------+---------------

115 | jack ham | 3300

115 | jack ham | 5000

362 | nicky zoo | 3300

671 | chirs jhon | 10000

115 | jack ham | 10000

221 | domd kick | 3300

221 | domd kick | 10000

221 | domd kick | 5000

5 | wer | 1500

(9 rows)

**Question M** :- Print the names of employees who are certified only on aircrafts with cruising

range longer than 1000 miles, but on at least two such aircrafts.

**Answer : -**

airline=# select employees.eid,ename,cruisingrange from certified inner join aircraft on aircraft.aid = certified.aid inner join employees on employees.eid = certified.eid where cruisingrange<1000;

eid | ename | cruisingrange

-----+-----------+---------------

7 | jack hill | 900

412 | jhon | 900

(2 rows)

**Question N** :- Print the names of employees who are certified only on aircrafts with cruising

range longer than 1000 miles and who are certified on some Boeing aircraft.

**Answer : -**

airline=# select employees.eid,ename,cruisingrange,aname from certified inner join aircraft on aircraft.aid = certified.aid inner join employees on employees.eid = certified.eid where cruisingrange>1000 and aname = 'Boeing aircraft';

eid | ename | cruisingrange | aname

-----+-----------+---------------+-----------------

115 | jack ham | 3300 | Boeing aircraft

362 | nicky zoo | 3300 | Boeing aircraft

221 | domd kick | 3300 | Boeing aircraft

7 | jack hill | 3300 | Boeing aircraft

(4 rows)