

DIVYASHREE K

1BM19CS054

CSE-4A

Question:-

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. i. Find the names of aircraft such that all pilots certified to operate them have salaries more than Rs.80,000. ii. For each pilot who is certified for more than three aircrafts, find the eid and the maximum cruisingrange of the aircraft for which she or he is certified. iii. Find the names of pilots whose salary is less than the price of the cheapest route from Bengaluru to Frankfurt. iv. For all aircraft with cruisingrange over 1000 Kms, find the name of the aircraft and the average salary of all pilots certified for this aircraft. v. Find the names of pilots certified for some Boeing aircraft. vi. Find the aids of all aircraft that can be used on routes from Bengaluru to New Delhi. vii. A customer wants to travel from Bangalore to Kolkata New with no more than two changes of flight. List the choice of

departure times from Madison if the customer wants to arrive in Kolkata by 6 p.m.

Program 5:

```
CREATE DATABASE  
AIRLINE_FLIGHT_DATABASE;
```

```
USE AIRLINE_FLIGHT_DATABASE;
```

```
CREATE TABLE FLIGHTS
```

```
(
```

```
    flno int,
```

```
    ffrom varchar(40),
```

```
    tto varchar(40),
```

```
    distance int,
```

```
    departs datetime,  
    arrives datetime,  
    price int,  
    primary key(flno)  
);
```

```
CREATE TABLE AIRCRAFT  
(  
    aid int,  
    aname varchar(40),  
    cruisingrange int,  
    primary key(aid)  
);
```

```
CREATE TABLE EMPLOYEES
```

```
(
```

```
    eid int,
```

```
    ename varchar(40),
```

```
    salary int,
```

```
    primary key(eid)
```

```
);
```

```
CREATE TABLE CERTIFIED
```

```
(
```

```
    eid int,
```

```
    aid int,
```

```
    FOREIGN KEY(aid) REFERENCES  
    AIRCRAFT(aid),
```

```
FOREIGN KEY(eid) REFERENCES  
EMPLOYEES(eid)  
);
```

```
INSERT INTO FLIGHTS
```

```
VALUES
```

```
(101,"Bangalore","Delhi",2500,'2005-  
05-13:07:15:31.000000','2005-05-  
13:07:15:31.000000',5000),
```

```
(102,"Bangalore","Lucknow",3000,'  
2013-05-05:07:15:31.000000','2013-  
05-05:11:15:31.000000',6000),
```

```
(103,"Lucknow","Delhi",500,'2013-  
05-05:12:15:31.000000','2013-05-  
05:17:15:31.000000',3000),
```

```
(107,"Bangalore","Frankfurt",8000,'  
2013-05-05:07:15:31.000000','2013-  
05-05:22:15:31.000000',60000),
```

```
(104,"Bangalore","Frankfurt",8500,'  
2013-05-05:07:15:31.000000','2013-  
05-05:23:15:31.000000',75000),
```

```
(105,"Kolkata","Delhi",3400,'2013-  
05-05:07:15:31.000000','2013-05-  
05:09:15:31.000000',7000);
```

```
SELECT * FROM FLIGHTS;
```

```
INSERT INTO AIRCRAFT
```

```
VALUES
```

```
(101,747,3000),(102,"Boeing",900),(10  
3,647,800),(104,"Dreamliner",10000),
```

```
(105,"Boeing",3500),(106,707,1500)  
,(107,"Dream",120000);
```

```
SELECT * FROM AIRCRAFT;
```

```
INSERT INTO EMPLOYEES
```

```
VALUES
```

```
(701,"A",50000),(702,"B",100000),(703  
,"C",150000),(704,"D",90000),
```

```
(705,"E",40000),(706,"F",60000),(70  
7,"G",90000);
```

```
SELECT * FROM EMPLOYEES;
```

```
INSERT INTO CERTIFIED
```


VALUES

(701,101),(701,102),(701,106),(701,105),
(702,104),(703,104),(704,104),(702,107),

(703,107),(704,107),(702,101),(703,105),
(704,105),(705,103);

SELECT * FROM CERTIFIED;

SELECT distinct a.aname

FROM AIRCRAFT a,EMPLOYEES
e,CERTIFIED c

WHERE a.aid=c.aid and e.eid=c.eid and
e.salary>80000;

SELECT e.eid,e.ename,max(a.
cruisingrange)

```
FROM EMPLOYEES e,CERTIFIED  
c,AIRCRAFT a
```

```
WHERE e.eid=c.eid and a.aid=c.aid
```

```
group by e.ename
```

```
having count(c.aid)>3;
```

```
SELECT e.ename
```

```
FROM EMPLOYEES e
```

```
WHERE salary < (select min(price)
```

```
from FLIGHTS
```

```
where ffrom="Bangalore" and  
tto="Frankfurt");
```

```
SELECT
```

```
a.aname,a.cruisingrange,avg(e.salary)
```

```
FROM AIRCRAFT a,EMPLOYEES  
e,CERTIFIED c
```

```
WHERE c.eid=e.eid and c.aid=a.aid
```

```
group by a.aname
```

```
having a.cruisingrange > 1000;
```

```
SELECT distinct e.ename
```

```
FROM EMPLOYEES e,CERTIFIED  
c,AIRCRAFT a
```

```
WHERE e.eid=c.eid and a.aid=c.aid and  
aname like "Boeing";
```

```
SELECT a.aid
```

```
FROM AIRCRAFT a
```

```
WHERE a. cruisingrange >= (select
distance
                                from FLIGHTS
                                where
ffrom="Bangalore" and tto="Delhi");
```

```
SELECT f.ffrom,f.tto,f.arrives
FROM   FLIGHTS f
WHERE  (f.ffrom="Bangalore" and
f.tto=(select ffrom
                                from
FLIGHTS
                                where
tto="Kolkata")) or f.tto="Kolkata";
```

Output:

Result Grid							
Filter Rows:							
	fno	ffrom	tto	distance	departs	arrives	price
▶	101	Bangalore	Delhi	2500	2005-05-13 07:15:31	2005-05-13 07:15:31	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
	107	Bangalore	Frankfurt	8000	2013-05-05 07:15:31	2013-05-05 22:15:31	60000
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

FLIGHTS 1 × AIRCRAFT 2 EMPLOYEES 3 CERTIFIED 4 Result 5 Result 6 EMPLOYEE

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Result Grid			
Filter Rows:			
	aid	aname	cruisingrange
▶	101	747	3000
	102	Boeing	900
	103	647	800
	104	Dreamliner	10000
	105	Boeing	3500
	106	707	1500
	107	Dream	120000
*	NULL	NULL	NULL

FLIGHTS 1 AIRCRAFT 2 × EMPLOYEES 3

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102

<

Result Grid

Filter Rows:

	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

FLIGHTS 1 AIRCRAFT 2 EMPLOYEE

Output

100



WHERE (f.ffrom="Ban

101



Result Grid



Filter Rows:

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

FLIGHTS 1

AIRCRAFT 2

EMPLOY

Result Grid   Filter Rows

	eid	aid
	702	104
	703	104
	704	104
	702	107
	703	107
	704	107
	702	101
	703	105
	704	105
	705	103

FLIGHTS 1

AIRCRAFT 2

Output



101

Result Grid

Filter Rows:

	aname
▶	Dreamliner
	Dream
	747
	Boeing

FLIGHTS 1 AIRCRAFT 2 EMPLOYEE



Result Grid   Filter Rows:

	eid	ename	max(a. cruisingrange)
▶	701	A	3500

FLIGHTS 1 AIRCRAFT 2 EMPLOYEES 3 CE

Output

Scanned with CamScanner

Result Grid   Filter Rows:



	ename
▶	A
	E

FLIGHTS 1 AIRCRAFT 2 EMPLOYEES 3 CE

Output

Scanned with CamScanner


101

Result Grid   Filter Rows:



	aname	cruisingrange	avg(e.salary)
▶	747	3000	75000.0000
	Dreamliner	10000	113333.3333
	707	1500	50000.0000
	Dream	120000	113333.3333

FLIGHTS 1 AIRCRAFT 2 EMPLOYEES 3 C

Output

 Action Output

←

Result Grid   Filter Rows:

	ename
▶	A
	C
	D

FLIGHTS 1 AIRCRAFT 2 EMPLOYEES 3

Scanned with CamScanner

Result Grid

Filter Rows:

	aid
▶	101
	104
	105
	107
✱	NULL

FLIGHTS 1 AIRCRAFT 2 EMPLOY