

DBMS LAB 5 :-

```
CREATE TABLE flight(  
  'flno' INT,  
  'from' VARCHAR(20),  
  'to' VARCHAR(20),  
  'distance' INT,  
  'departs' VARCHAR(20),  
  'arrives' VARCHAR(20),  
  'price' REAL,  
  PRIMARY KEY('flno'));  
  
CREATE TABLE aircraft(  
  'aid' INT,  
  'aname' VARCHAR(20),  
  'cruisingrange' INT,  
  PRIMARY KEY('aid'));  
  
CREATE TABLE employees(  
  'eid' INT,  
  'ename' VARCHAR(20),  
  'salary' INT,  
  PRIMARY KEY('eid'));  
  
CREATE TABLE certified(  
  'eid' INT,  
  'aid' INT,  
  PRIMARY KEY('eid','aid'),  
  FOREIGN KEY ('eid') REFERENCES employees('eid')  
  ON DELETE CASCADE ON UPDATE CASCADE,  
  FOREIGN KEY ('aid') REFERENCES aircraft('aid') ON DELETE CASCADE ON UPDATE CASCADE);  
  
INSERT INTO flight VALUES  
(1,'Mumbai','Bangaluru',360,'10:45:00','12:00:00',10000),
```

```
(2,'Bangaluru','Delhi',1700,'12:15:00','04:30:00',5000),
(3,'Mumbai','Sydney',3500,'02:15:00','05:25:00',30000),
(4,'Delhi','Mumbai',1300,'10:15:00','12:05:00',4500),
(5,'Delhi','Frankfurt',18000,'07:15:00','05:30:00',90000),
(6,'Bangaluru','Frankfurt',19500,'10:00:00','07:45:00',95000),
(7,'Bengaluru','Frankfurt',17000,'12:00:00','06:30:00',99000),
(8,'Madison','Chicago',236,'12:00:00','13:00:00',5000),
(9,'Chicago','New York',1281,'15:00:00','17:30:00',15000),
(10,'Madison','New York',1514,'13:00:00','16:30:00',25000);
```

INSERT INTO aircraft VALUES

```
(111,'Airbus',1000),
(222,'Boeing',5000),
(333,'Jet01',5000),
(444,'Airbus380',8000),
(559,'Boeing747',500),
(880,'AirbusA310',800),
(909,'Concorde',1000);
```

INSERT INTO employees VALUES

```
(1,'Santino',30000),
(2,'Ajith',85000),
(3,'Krishan',50000),
(4,'Joseph',45000),
(5,'Abhimanyu',90000),
(6,'Ryan',75000),(7,'Ram',100000);
```

INSERT INTO certified VALUES

```
(1,111),
(2,111),
(1,222),
(5,222),
(7,222),
(1,333),
```

(2,333),
(1,444),
(2,444),
(4,444),
(6,559),
(3,559),
(5,880),
(6,880),
(3,909),
(1,909),
(1,880);

SELECT * FROM flight;

```
1|Mumbai|Bangaluru|360|10:45:00|12:00:00|10000.0
2|Bangaluru|Delhi|1700|12:15:00|04:30:00|5000.0
3|Mumbai|Sydney|3500|02:15:00|05:25:00|30000.0
4|Delhi|Mumbai|1300|10:15:00|12:05:00|4500.0
5|Delhi|Frankfurt|18000|07:15:00|05:30:00|90000.0
6|Bangaluru|Frankfurt|19500|10:00:00|07:45:00|95000.0
7|Bangaluru|Frankfurt|17000|12:00:00|06:30:00|99000.0
8|Madison|Chicago|236|12:00:00|13:00:00|5000.0
9|Chicago|New York|1281|15:00:00|17:30:00|15000.0
10|Madison|New York|1514|13:00:00|16:30:00|25000.0

[Program exited with exit code 0]
```

SELECT * FROM aircraft;

```
111|Airbus|1000
222|Boeing|5000
333|Jet01|5000
444|Airbus380|8000
559|Boeing747|500
880|AirbusA310|800
909|Concorde|1000
```

```
[Program exited with exit code 0]
```

SELECT * FROM employees;

```
1|Santino|30000
2|Ajith|85000
3|Krishan|50000
4|Joseph|45000
5|Abhimanyu|90000
6|Ryan|75000
7|Ram|100000
```

```
[Program exited with exit code 0]
```

SELECT * FROM certified;

```
1|111
1|222
1|333
1|444
1|880
1|909
2|111
2|333
2|444
3|559
3|909
4|444
5|222
5|880
6|559
6|880
7|222
```

```
[Program exited with exit code 0]
```

- Find the names of aircraft such that all pilots certified to operate them have salaries more than Rs.80,000. `SELECT DISTINCT a.aname FROM certified c, employees e, aircraft a WHERE c.eid=e.eid AND c.aid=a.aid AND e.salary>80000;`

```
Airbus
```

```
Jet01
```

```
Airbus380
```

```
Boeing
```

```
AirbusA310
```

```
[Program exited with exit code 0]
```

- 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. `SELECT c.eid, MAX(a.cruisingrange) FROM certified c, aircraft a WHERE c.aid = a.aid GROUP BY c.eid HAVING COUNT(a.aname)>3;`

```
1|8000
```

```
[Program exited with exit code 0]
```

- Find the names of pilots whose salary is less than the price of the cheapest route from Bengaluru to Frankfurt. `SELECT DISTINCT e.ename FROM employees e WHERE e.salary`

```
Santino
Ajith
Krishan
Joseph
Abhimanyu
Ryan

[Program exited with exit code 0]
```

- 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. `SELECT a.aname,AVG(e.salary) FROM aircraft a,certified c,employees e WHERE a.aid=c.aid AND c.eid=e.eid AND a.cruisingrange>1000 GROUP BY a.aname;`

```
Airbus380|53333.3333333333
Boeing|73333.3333333333
Jet01|57500.0

[Program exited with exit code 0]
```

- Find the names of pilots certified for some Boeing aircraft. `SELECT DISTINCT e.ename FROM employees e,aircraft a,certified c WHERE e.eid=c.eid AND c.aid=a.aid AND a.aname like 'Boeing%';`

```
Santino
Abhimanyu
Ram
Krishan
Ryan

[Program exited with exit code 0]
```

- Find the aids of all aircraft that can be used on routes from Bengaluru to New Delhi. `SELECT a.aid FROM aircraft a WHERE a.cruisingrange > (SELECT MIN(f.distance) FROM flight f WHERE f.'from'='Bengaluru' AND f.'to'='Delhi');`

```
222
333
444

[Program exited with exit code 0]
```

- 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.

```
SELECT f.departs FROM flight f WHERE f.'from' = 'Madison' AND f.'to' = 'New York' AND
time(f.arrives) < '18:00:00'
```

```
UNION SELECT f1.departs FROM flight f1 INNER JOIN flight f2 ON f1.'to' = f2.'from' WHERE f1.'from' =
'Madison' AND f2.'to' = 'New York' AND time(f1.arrives) < time(f2.departs) AND time(f2.arrives) <
'18:00:00'
```

```
UNION
```

```
SELECT f3.departs FROM flight f3 INNER JOIN flight f4 ON f3.'to' = f4.'from' INNER JOIN flight f5 ON
f4.'to' = f5.'from' WHERE f3.'from' = 'Madison' AND f5.'to' = 'New York' AND time(f3.arrives) <
time(f4.departs) AND time(f4.arrives) < time(f5.departs) AND time(f5.arrives) < '18:00:00';
```

12:00:00

13:00:00

[Program exited with exit code 0]