DBMS LAB-7

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)
EMPLOYEE (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 cruising
range 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 cruising range 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 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.
viii. Print the name and salary of every non-pilot whose salary is more than the average salary for pilots.

```
CREATE DATABASE flights_db;
USE flights_db;

CREATE TABLE flight(
  no INT,
  frm VARCHAR(20),
  too VARCHAR(20),
  distance INT,
  departs VARCHAR(20),
```

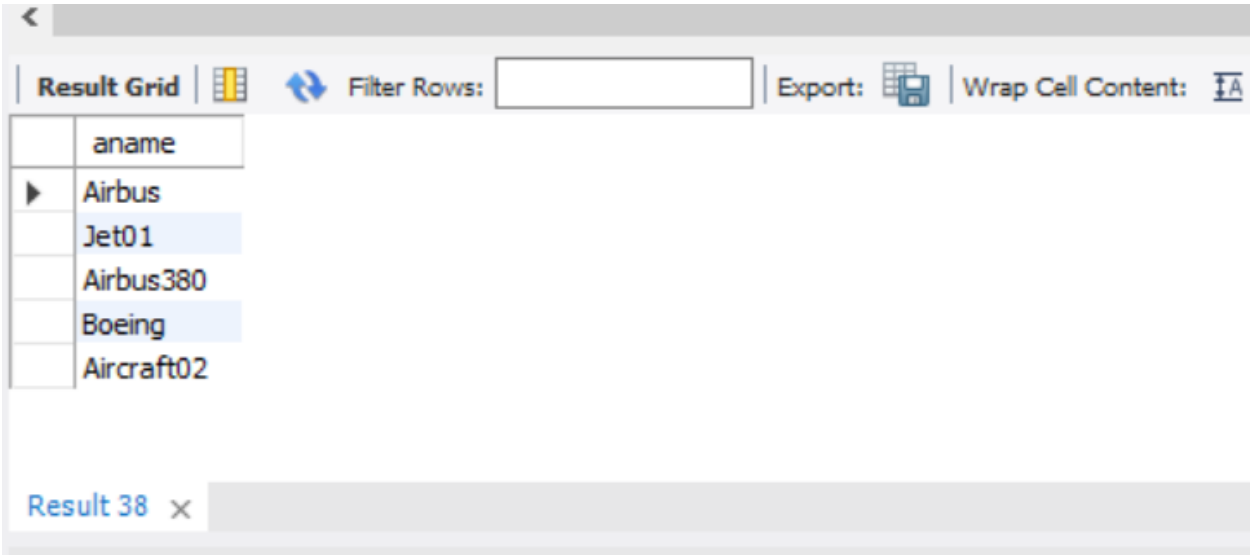
```
   arrives VARCHAR(20),
   price REAL,
   PRIMARY KEY (no)
 );
 DESC flight;

CREATE TABLE aircraft(
    aid INT,
    aname VARCHAR(20),
    cruisingrange INT,
    PRIMARY KEY (aid)
);
DESC aircraft;

CREATE TABLE employees(
   eid INT,
   ename VARCHAR(20),
   salary INT,
   PRIMARY KEY (eid)
 );
DESC employees;

CREATE TABLE certified(
  eid INT,
  aid INT,
  PRIMARY KEY (eid,aid),
  FOREIGN KEY (eid) REFERENCES employees (eid),
  FOREIGN KEY (aid) REFERENCES aircraft (aid)
);
DESC certified;

INSERT INTO flight (no,frm,too,distance,departs,arrives,price) VALUES
          (1,'Bangalore','Mangalore',360,'10:45:00','12:00:00',10000),
          (2,'Bangalore','Delhi',5000,'12:15:00','04:30:00',25000),
          (3,'Bangalore','Mumbai',3500,'02:15:00','05:25:00',30000),
          (4,'Delhi','Mumbai',4500,'10:15:00','12:05:00',35000),
          (5,'Delhi','Frankfurt',18000,'07:15:00','05:30:00',90000),
          (6,'Bangalore','Frankfurt',19500,'10:00:00','07:45:00',95000),
          (7,'Bangalore','Frankfurt',17000,'12:00:00','06:30:00',99000),
          (8, 'Madison','Frankfurt', 10000, '12:50:00','17:00:00',75000),
          (9, 'Delhi','New York', 10000, '01:08:00','19:00:00',95000),
          (10, 'Madison','New York', 10000, '12:00:00','18:00:00',75000);
SELECT * FROM flight;
```

```
INSERT INTO aircraft (aid,aname,cruisingrange) values
      (123,'Airbus',1000),
      (302,'Boeing',5000),
      (306,'Jet01',5000),
      (378,'Airbus380',8000),
      (456,'Aircraft',500),
      (789,'Aircraft02',800),
      (951,'Aircraft03',1000);
SELECT * FROM aircraft;

INSERT INTO employees (eid,ename,salary) VALUES
      (1,'Ajay',30000),
      (2,'Ajith',85000),
      (3,'Arnab',50000),
      (4,'Harry',45000),
      (5,'Ron',90000),
      (6,'Josh',75000),
      (7,'Ram',100000),
      (8,'Shyam',200000),
      (9,'Dev',40000000);
SELECT * FROM employees;

INSERT INTO certified (eid,aid) VALUES
     (1,123),
     (2,123),
     (1,302),
     (5,302),
     (7,302),
     (1,306),
     (2,306),
     (1,378),
     (2,378),
     (4,378),
     (6,456),
     (3,456),
     (5,789),
     (6,789),
     (3,951),
     (1,951),
     (1,789);
SELECT * FROM certified;


-- Queries:
```

```
-- Query1
-- 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 aircraft a,certified c,employees e
  WHERE a.aid=c.aid
  AND c.eid=e.eid
  AND NOT EXISTS
  (SELECT * FROM employees e1
     WHERE e1.eid=e.eid
     AND e1.salary<80000
  );

-- Query2
-- 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.
SELECT c.eid,MAX(cruisingrange)
  FROM certified c,aircraft a
  WHERE c.aid=a.aid
  GROUP BY c.eid
  HAVING COUNT(*)>3;

-- Query 3
-- 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<
  (SELECT MIN(f.price)
  FROM flight f
  WHERE f.frm='Bangalore'
  AND f.too='Frankfurt');

-- Query4
-- 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.
SELECT a.aid,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.aid,a.aname;
```

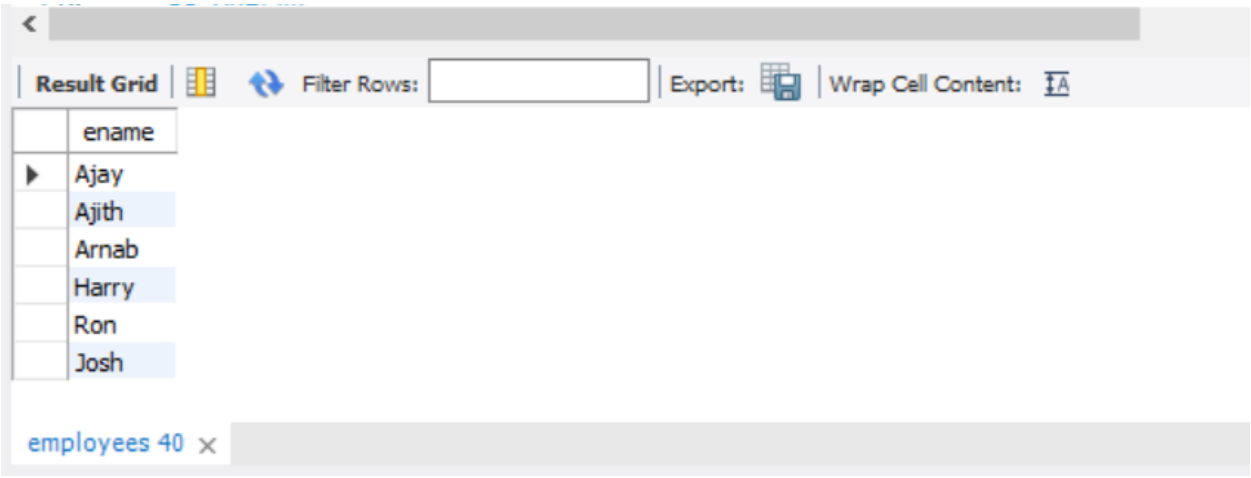
```
-- Query5
-- Find the names of pilots certified for some Boeing aircraft.
SELECT distinct e.ename
  FROM employees e,aircraft a,certified c
  WHERE e.eid=c.eid
  AND c.aid=a.aid
  AND a.aname='Boeing';

-- Query6
-- Find the aid's of all aircraft that can be used on routes from Bangalore to Delhi.
SELECT a.aid
  FROM aircraft a
  WHERE a.cruisingrange>
  (SELECT MIN(f.distance)
  FROM flight f
  WHERE f.frm='Bangalore'
  AND f.too='Delhi');

-- Query7
-- 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.too="New York"
    AND arrives="18:00:00";

-- Query8
-- Print the name and salary of every non-pilot whose salary is more than the average salary for
pilots.
        SELECT e.ename, e.salary
    FROM employeeS e
        WHERE e.eid
    NOT IN (
                SELECT DISTINCT c.eid
       FROM certified c)
        AND e.salary>(
                SELECT AVG(e2.salary)
                FROM employeeS e2
                WHERE e2.eid IN(
                        SELECT DISTINCT c2.eid
        FROM certified c2));
```

Query 1:

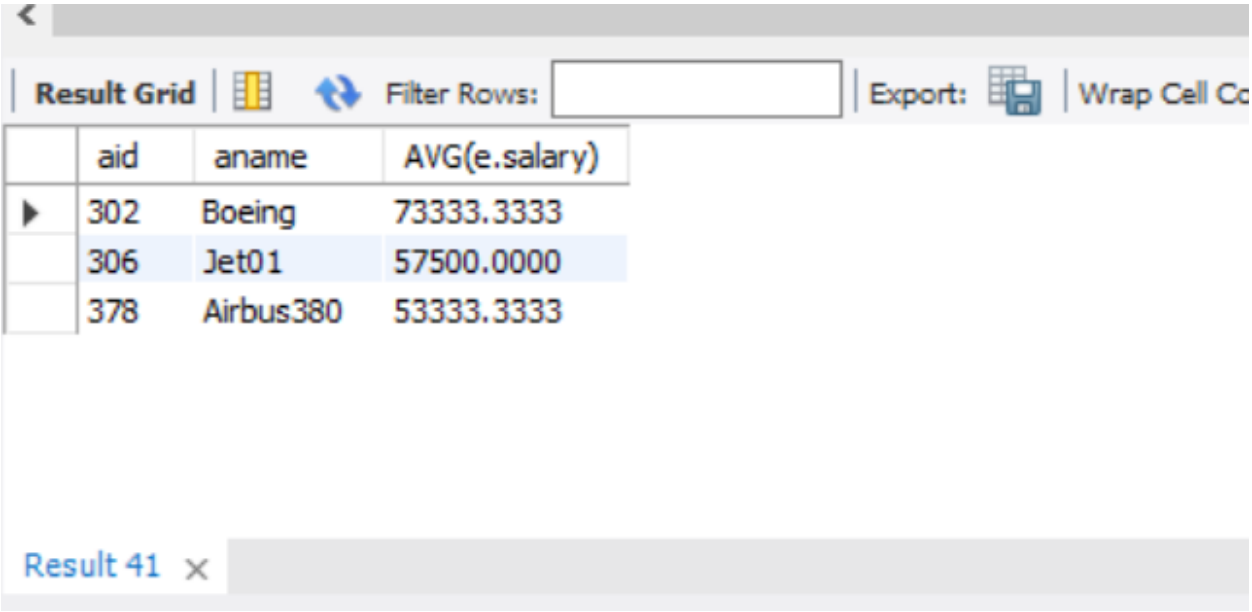


Query 2:

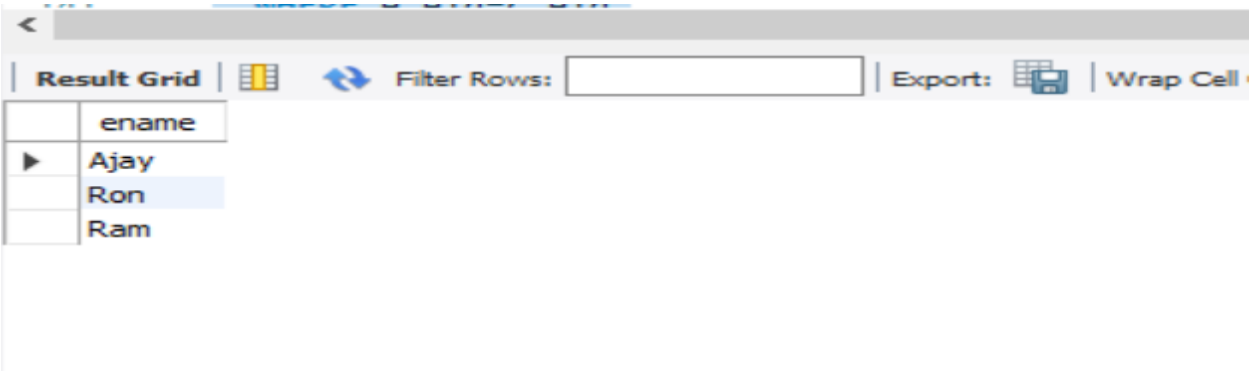
Query 3:



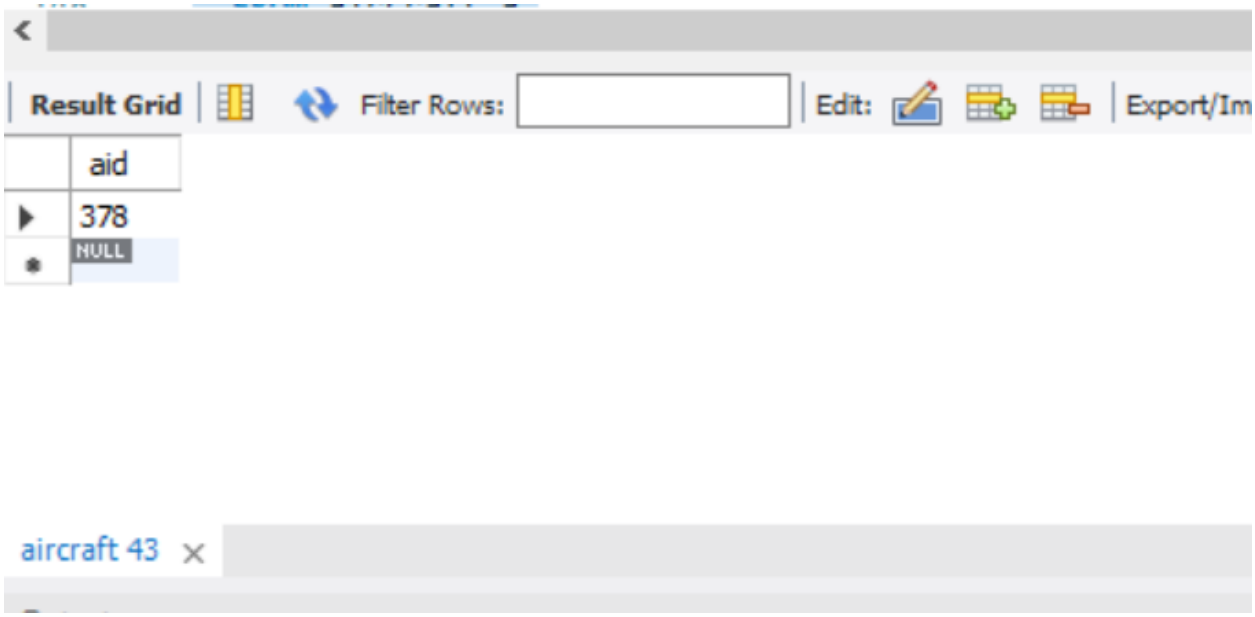
Query 4:



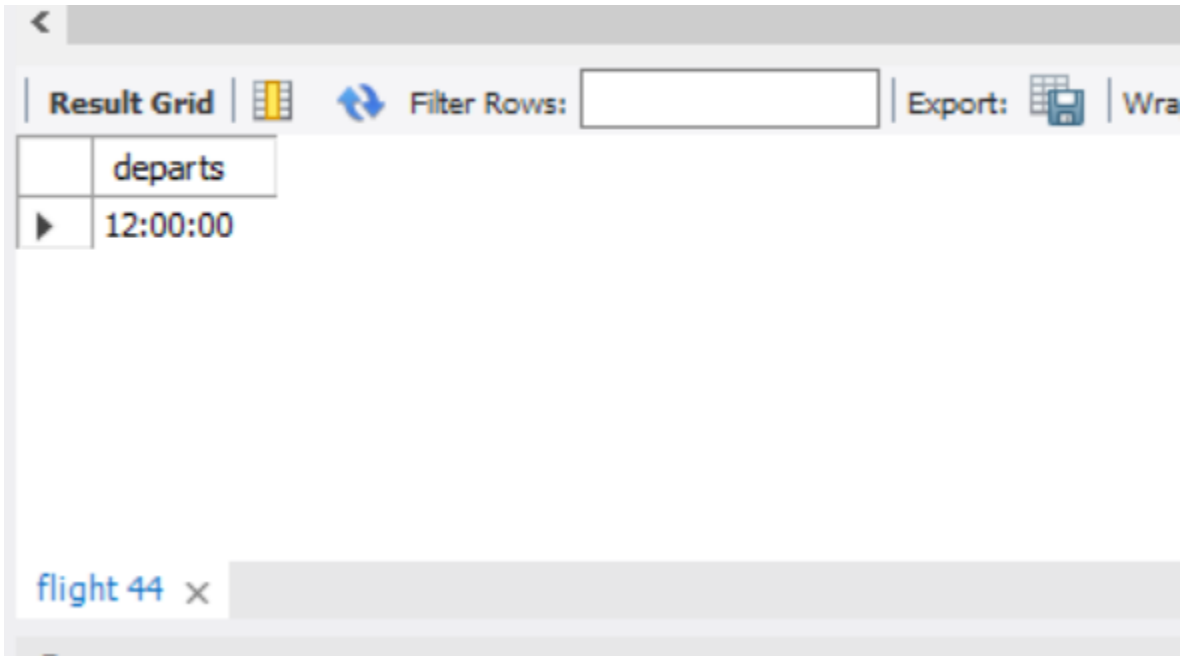
Query 5:



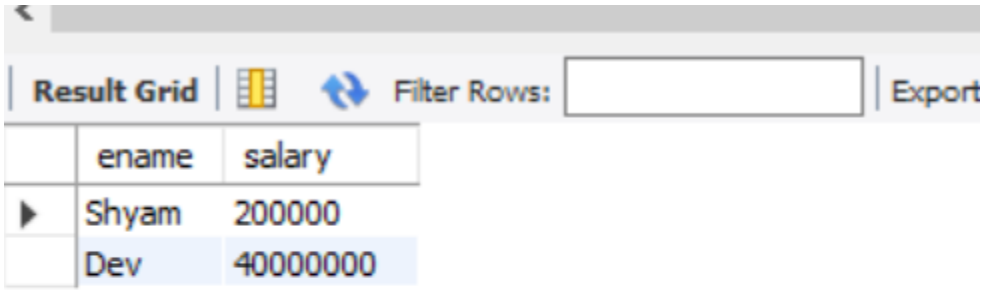
Query 6:



Query 7:



Query 8:


Result Grid
Filter Rows:
Export
ename
salary
Shyam
200000
Dev
40000000


employeeS 66