CS3743 Hwk 6 SQL DML (30pts) – due Apr 23, 2020

Flight(flightId, flightNm, airline, orig, dest, schedDt, depTm, maxSeats, numSeatsSold)

Customer(custNr, name, preferAirline, gender, birthDt)

Reservation(custNr, flightId, reqSeatQty)

To make it easier for the grader, use the following tuple variables: Flight – f, Customer – c, Reservation – r. There may be cases where you need multiple tuple variables for the same relation; please use something meaningful (e.g., rRD).

Please show **an** **appropriate SQL SELECT** statement to answer each of the following. Some of the problems will require nested SELECT statements (due to NOT EXISTS). You may also get up to 5 points of extra credit by using MySQL to run your queries and paste the results into your solution. See the sample output below.

**Reminder for myself : REMEMBER TO CHANGE FONT WHEN TRANSFERING QUERY**

**Also ~ sorry for spacing everything out, it just bothers me when answers go across multiple pages.**

1. (1 pt) Find the flightId, airline, and departure time for flights departing from SAT for MCO.

select f.flightId, f.airline, f.depTm

from Flight f

where orig = "SAT" and dest = "MCO";

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

| flightId | airline | depTm |

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

| 331 | PoDunk | 10:00:00 |

| 341 | PoDunk | 10:00:00 |

| 510 | American | 10:30:00 |

| 519 | PoDunk | 16:00:00 |

| 705 | Clampett | 04:00:00 |

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

5 rows in set (0.00 sec)

2. (2 pts) Find the flightNm, departure time, and origin for flights on which the customer named Perry Noid has a reservation.

select f.flightNm, f.depTm, f.orig

from Flight f, Customer c, Reservation r

where c.name = “Perry Noid”

and c.custNr = r.custNr

and f.flightId = r.flightId;

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

| flightNm | depTm | orig |

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

| PD001 | 10:00:00 | SAT |

| SH100 | 07:00:00 | IHC |

| F333 | 16:00:00 | SAT |

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

3 rows in set (0.00 sec)

3. (3 pts) Find the airline of flights departing "SAT" on "2020-03-03" for the customer named "Anita Vacay".

select f.airline

from Flight f, Customer c, Reservation r

where c.name = “Anita Vacay”

and c.custNr = r.custNr

and f.flightId = r.flightId

and orig = “SAT”

and schedDt = “2020-03-03”;

+---------+

| airline |

+---------+

| PoDunk |

+---------+

1 row in set (0.00 sec)

4. (4 pts) Find the customer numbers and names of customers who have a reservation on a flight leaving on April 4th of 2020 on which customer #444 also has a reservation. Do not include #444 in your result. Hint: you will have to use one of the relations twice.

select c.custNr, c.name

from Flight f, Customer c, Reservation r, Reservation r444

where c.custNr != “444”

and r444.custNr = “444”

and r444.flightId = f.flightId

and f.schedDt = “2020-04-04”

and r444.flightId = r.flightId

and c.custNr = r.custNr;

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

| custNr | name |

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

| 111 | Perry Noid |

| 222 | Melba Toast |

| 333 | Pete Moss |

| 480 | Anita Vacay |

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

4 rows in set (0.00 sec)

5. (4 pts) Find the customer number of customers who are flying on **all** of the flights having a destination of "SEG".

select c.custNr

from Customer c

where NOT EXISTS (

select \*

from Flight f

where f.dest = “SEG”

and NOT EXISTS(

select \*

from Reservation r

where r.flightId = f.flightId

and r.custNr = c.custNr));

+--------+

| custNr |

+--------+

| 444 |

| 901 |

| 999 |

+--------+

3 rows in set (0.01 sec)

6. (4 pts) Find the name, gender, and birth date of customers who do **not** have reservations on flights with Spirit airlines. State whether your answer includes customers that don't have any associated reservations.

select c.name, c.gender, c.birthDt

from Customer c

where not exists(

select \*

from Reservation r

where r.custNr = c.custNr

and not exists(

select \*

from Flight f

where f.flightId = r.flightId

and f.airline <> “Spirit”)

and(c.custNr = r.custNr));

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

| name | gender | birthDt |

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

| Jerry Tall | M | 1927-04-15 |

| Tom E Gunn | M | 1976-06-06 |

| Ron DeVoux | M | 1990-08-08 |

| Ann T Freeze | F | NULL |

| Peg Board | F | 1987-04-04 |

| Al B Tross | M | 1957-07-12 |

| B B Gunn | F | 1976-09-09 |

| Sally Mander | F | 1995-09-04 |

| Marcus Absent | M | 1999-09-09 |

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

9 rows in set (0.00 sec)

**\*Includes customers that don’t have any associated reservations**

7. (3 pts) Find the flightNm and scheduled dates for flights on which only customer #777 has a reservation. State whether your answer includes flights that don't have any associated reservations.

select f.flightNm, f.schedDt

from Flight f

where not exists(

select r.custNr

from Reservation r

where r.custNr = “777”

and r.flightId = f.flightId);

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

| flightNm | schedDt |

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

| PD001 | 2020-03-03 |

| PD001 | 2020-03-04 |

| AH100 | 2020-04-01 |

| AH200 | 2020-04-01 |

| SH100 | 2020-04-04 |

| SF200 | 2020-04-12 |

| F333 | 2020-05-19 |

| PD002 | 2020-05-03 |

| AH200 | 2020-06-04 |

| CL123 | 2020-07-05 |

| PD002 | 2020-07-06 |

| FXXXX | 2020-05-03 |

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

**\*Includes flights that have no reservations**

8. (5 pts) Find the names of customers who are on **all** the flights which Ron DeVoux has reservations. State whether you included Ron DeVoux in your answer.

Hint: obtain the custNr for Ron DeVoux before attempting the universal quantifier.

select c.name

from Customer c

where c.name != “Ron DeVoux”

and not exists(

select \*

from Customer cRD

where cRD.name = “Ron DeVoux”

and not exists(

select \*

from Reservation rRD

where rRD.custNr = cRD.custNr

and not exists(

select \*

from Reservation r

where r.flightId = rRD.flightId

and r.custNr = c.custNr)));

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

| name |

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

| Perry Noid |

| Melba Toast |

| Pete Moss |

| Bill Board |

| Anita Vacay |

| Jerry Tall |

| Tom E Gunn |

| Bob Wire |

| Peg Board |

| Al B Tross |

| B B Gunn |

| Sally Mander |

| Marcus Absent |

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

13 rows in set (0.00 sec)

**\*Does NOT include Ron Devoux**

9. (4 pts) Find the customer number, names, and preferred airlines for customers who **only** have reservations on a flight which **American** is the airline.

select c.custNr, c.name, c.preferAirline

from Customer c

where NOT EXISTS (

select \*

from Reservation r

where r.custNr = c.custNr

and NOT EXISTS(

select \*

from Flight f

where r.flightId = f.flightId

and f.airline = “American”));

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

| custNr | name | preferAirline |

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

| 902 | Al B Tross | American |

| 903 | B B Gunn | PoDunk |

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

2 rows in set (0.00 sec)

**Extra Credit (5 points)**

For each of the problems, also show the output which you can obtain by using the **mysql** command line utility.

**Using MySQL to connect to flightdb**.

1. Login to either a fox server or one of the Linux workstations in the CS main lab.
2. To launch the mysql command line utility:

$ mysql –h **db01** –u **hwk06** –p

* It will prompt you to enter a password. Enter:

**hwk06pw**

* It should then give you the **mysql>** prompt.

1. Tell mysql that you want to use **flightdb**:

mysql> **use flightdb;**

* + It should state "**Database changed**".

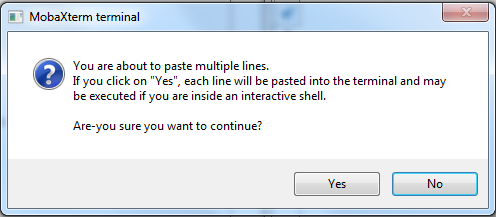
1. Confirm that you are connected to the flightdb by executing each of these queries:

mysql> **select \* from Flight;**

mysql> **select \* from Customer;**

mysql> **select \* from Reservation;**

1. Paste or type an sql select statement (including the semicolon).
   * If you paste a multi-line SQL select statement when using MobaXterm, it will probably respond with this window:



* + Press the **Yes** button.
  + Copy the result text lines.

1. Paste your result text lines into your assignment answer document. You will need to change the font of the output to a **fixed** font (e.g., consolas, courier).
2. To exit the mysql command line utility:

mysql> **exit;**

Sample (partial) output:

1. (1 pt) Find the flightId, airline, and departure time for flights departing from SAT for MCO.

…. your query ….

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

| flightId | airline | depTm |

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

| 331 | PoDunk | 10:00:00 |

| 341 | PoDunk | 10:00:00 |

| 510 | American | 10:30:00 |

| 519 | PoDunk | 16:00:00 |

| 705 | Clampett | 04:00:00 |

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

5 rows in set (0.00 sec)

2. (2 pts) Find the flightNm, departure time, and origin for flights on which the customer named Perry Noid has a reservation.

…. your query ….

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

| flightNm | depTm | orig |

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

| PD001 | 10:00:00 | SAT |

| SH100 | 07:00:00 | IHC |

| F333 | 16:00:00 | SAT |

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

3 rows in set (0.00 sec)

3. (3 pts) Find the airline of flights departing "SAT" on "2020-03-03" for the customer named "Anita Vacay".

…. your query ….

+---------+

| airline |

+---------+

| PoDunk |

+---------+

Printed the database

mysql> select \* from Customer;

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

| custNr | name | preferAirline | birthDt | gender |

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

| 111 | Perry Noid | Spirit | 2000-04-01 | M |

| 222 | Melba Toast | American | 1990-09-11 | F |

| 333 | Pete Moss | Clampett | 1992-03-03 | M |

| 444 | Bill Board | American | 1985-04-04 | M |

| 480 | Anita Vacay | Spirit | 1975-06-01 | F |

| 555 | Jerry Tall | PoDunk | 1927-04-15 | M |

| 666 | Tom E Gunn | Clampett | 1976-06-06 | M |

| 777 | Bob Wire | PoDunk | 1973-07-07 | M |

| 888 | Ron DeVoux | American | 1990-08-08 | M |

| 890 | Ann T Freeze | NULL | NULL | F |

| 901 | Peg Board | Delta | 1987-04-04 | F |

| 902 | Al B Tross | American | 1957-07-12 | M |

| 903 | B B Gunn | PoDunk | 1976-09-09 | F |

| 904 | Sally Mander | Delta | 1995-09-04 | F |

| 999 | Marcus Absent | Delta | 1999-09-09 | M |

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

15 rows in set (0.00 sec)

mysql> select \* from Flight;

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

| flightId | flightNm | airline | orig | dest | schedDt | depTm | maxSeats | numSeatsSold |

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

| 331 | PD001 | PoDunk | SAT | MCO | 2020-03-03 | 10:00:00 | 30 | 30 |

| 341 | PD001 | PoDunk | SAT | MCO | 2020-03-04 | 10:00:00 | 30 | 30 |

| 411 | AH100 | American | HOU | CDG | 2020-04-01 | 08:00:00 | 130 | 25 |

| 412 | AH200 | American | HOU | FLL | 2020-04-01 | 06:00:00 | 130 | 125 |

| 441 | SH100 | Spirit | IHC | FLL | 2020-04-04 | 07:00:00 | 130 | 5 |

| 442 | SH110 | Spirit | IHC | FLL | 2020-04-04 | 15:00:00 | 130 | 0 |

| 460 | SF200 | Spirit | FLL | IHC | 2020-04-11 | 12:00:00 | 130 | 0 |

| 462 | SF200 | Spirit | FLL | IHC | 2020-04-12 | 12:00:00 | 130 | 50 |

| 510 | AS300 | American | SAT | MCO | 2020-05-10 | 10:30:00 | 130 | 5 |

| 519 | F333 | PoDunk | SAT | MCO | 2020-05-19 | 16:00:00 | 30 | 50 |

| 532 | PD002 | PoDunk | HOU | SEG | 2020-05-03 | 11:00:00 | 30 | 5 |

| 604 | AH200 | American | HOU | FLL | 2020-06-04 | 06:00:00 | 130 | 30 |

| 705 | CL123 | Clampett | SAT | MCO | 2020-07-05 | 04:00:00 | 30 | 0 |

| 706 | PD002 | PoDunk | HOU | SEG | 2020-07-06 | 11:00:00 | 30 | 0 |

| 707 | FXXXX | PoDunk | SAT | HOU | 2020-05-03 | 11:00:00 | 30 | 5 |

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

15 rows in set (0.00 sec)

mysql> select \* from Reservation;

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

| custNr | flightId | reqSeatQty |

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

| 111 | 341 | 10 |

| 111 | 441 | 2 |

| 111 | 519 | 2 |

| 222 | 331 | 12 |

| 222 | 341 | 11 |

| 222 | 441 | 2 |

| 222 | 705 | 2 |

| 333 | 441 | 2 |

| 444 | 412 | 5 |

| 444 | 441 | 2 |

| 444 | 510 | 5 |

| 444 | 519 | 5 |

| 444 | 532 | 2 |

| 444 | 705 | 2 |

| 444 | 706 | 2 |

| 444 | 707 | 2 |

| 480 | 331 | 2 |

| 480 | 441 | 2 |

| 555 | 341 | 3 |

| 555 | 411 | 30 |

| 555 | 412 | 20 |

| 555 | 510 | 20 |

| 555 | 519 | 1 |

| 555 | 706 | 2 |

| 555 | 707 | 8 |

| 666 | 705 | 3 |

| 777 | 442 | 1 |

| 777 | 460 | 1 |

| 777 | 510 | 1 |

| 888 | 341 | 1 |

| 888 | 519 | 1 |

| 888 | 604 | 1 |

| 890 | 341 | 1 |

| 890 | 510 | 2 |

| 890 | 519 | 1 |

| 890 | 604 | 1 |

| 901 | 341 | 20 |

| 901 | 412 | 8 |

| 901 | 532 | 1 |

| 901 | 706 | 4 |

| 902 | 412 | 5 |

| 903 | 412 | 3 |

| 904 | 412 | 2 |

| 904 | 519 | 5 |

| 999 | 341 | 14 |

| 999 | 412 | 10 |

| 999 | 510 | 15 |

| 999 | 519 | 14 |

| 999 | 532 | 1 |

| 999 | 706 | 5 |

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