IE School of Human Sciences and Technology
Master in Big Data and Business Analytics
SQL Data Modelling
Professor Luis Reina Julia

Assignment 2:

Airplane queries

Group O-1-5
Vikas Agarwal
Muhammad Furqan
Alejandro Koury
Francesca Manoni
Stephanie Njerenga
Breogán Pardo
Sebastián Vásquez

INTRODUCTION

The method selected to execute the queries in this case is putting SQL sentences in a text file. In order to do that:

1) we go to the already existing directory “sql” (created for some past exercises) from the Linux Konsole:

```
cd sql
```

2) we open a file **assignment2.sql** in a text editor

```
kwrite assignment2.sql
```

3) Now we can start writing our queries in the text file. To execute them, from the terminal logged in with db2inst1 we type:

```
db2 -tvf assignment2.sql
```

QUERIES INSIDE THE TEXT FILE

First of all we need to connect to the database:

```
-- 0.

CONNECT TO SAMPLE;

-- 1. What is the build date of the airplanes that have flown in 2014?

SELECT DISTINCT AIRCRAFT_ID, BUILD_DATE
   FROM TICKETS, AIRPLANES
   WHERE AIRCRAFT_ID = AIRCRAFT_REGISTRATION
       AND YEAR(FLIGHT_DATE) = 2014;
```

OUTPUT:

```
AIRCRAFT_ID BUILD_DATE
----------- ----------
NC12345     10/30/1993
NC12224     01/25/1995
NC72079     -
NC72012     12/31/1999
NC13563     02/21/2008
NC79822     -
NC81433     03/30/2012
NC57452     09/01/1998
NC98208     07/03/1998
NC58779     12/22/1999
NC72516     09/01/1993
NC24562     04/01/2006

  12 record(s) selected.
```

Professor's Feedback #1

-- 2. How many passengers born in the 70's that have flown to Paris?

```
SELECT COUNT(DISTINCT(ID)) AS AMOUNT_PARIS_70S
   FROM PASSENGERS, TICKETS, ROUTES
   WHERE PASSENGER_ID = ID
       AND ROUTES.ROUTE_CODE = TICKETS.ROUTE_CODE
       AND YEAR(BIRTH_DATE) BETWEEN 1970 AND 1979
       AND UPPER(DESTINATION) = 'PARIS';
```

OUTPUT:

```
AMOUNT_PARIS_70S
----------------
              18

  1 record(s) selected.
```

Professor's Feedback #2

-- 3. Telephone number of the oldest passenger

```
SELECT NAME, TELEPHONE, BIRTH_DATE
   FROM PASSENGERS
   WHERE BIRTH_DATE = (SELECT MIN(BIRTH_DATE) FROM PASSENGERS);
```

OUTPUT:

```
NAME                 TELEPHONE BIRTH_DATE
-------------------- --------- ----------
JOHN GEYER           678967891 09/15/1955
DELORES QUINTANA     457845781 09/15/1955

  2 record(s) selected.
```

Professor's Feedback #3

-- 4. How many airplanes have more than 300 seats and tickets more expensive than 1000€.

```
SELECT COUNT(DISTINCT(AIRCRAFT_REGISTRATION)) AS AMOUNT_AIRPLANES
   FROM ROUTES, TICKETS, AIRPLANES
   WHERE ROUTES.ROUTE_CODE = TICKETS.ROUTE_CODE
        AND AIRCRAFT_ID = AIRCRAFT_REGISTRATION
        AND PRICE > 1000 AND SEATS > 300;
```

OUTPUT:

```
AMOUNT_AIRPLANES
----------------
              11

  1 record(s) selected.
```

Professor's Feedback #4

-- 5. Find the tickets of all the flights to Toronto in planes build before 2010 for passengers born after 2000.

```
SELECT TICKET_ID, DESTINATION, BUILD_DATE, BIRTH_DATE
   FROM TICKETS, ROUTES, PASSENGERS, AIRPLANES
   WHERE TICKETS.ROUTE_CODE = ROUTES.ROUTE_CODE
        AND PASSENGER_ID = ID
        AND AIRCRAFT_ID = AIRCRAFT_REGISTRATION
        AND UPPER(DESTINATION) = 'TORONTO'
        AND YEAR(BUILD_DATE) < 2010
        AND YEAR(BIRTH_DATE) > 2000;
```

OUTPUT:

```
TICKET_ID DESTINATION     BUILD_DATE BIRTH_DATE
--------- --------------- ---------- ----------
T157384   Toronto         02/21/2008 03/31/2002
T157387   Toronto         12/23/2008 05/26/2003
T157368   Toronto         05/27/2009 05/26/2003

  3 record(s) selected.
```

Professor's Feedback #5

-- 6. Obtain the routes that their price is lower than the average price of all the routes with the same origin.

```
SELECT *
   FROM ROUTES
   WHERE PRICE < ALL(SELECT AVG(PRICE) FROM ROUTES GROUP BY ORIGIN);
```

OUTPUT:

```
ROUTE_CODE ORIGIN          DESTINATION     DISTANCE    PRICE
---------- --------------- --------------- ----------- ---------
R1210      London          Madrid                 1270    451.00

  1 record(s) selected.
```

Professor's Feedback #6

-- 7. For each origin how many tickets have been sold only for the tickets more expensive than 300€.

```
SELECT ORIGIN, COUNT(*) AS AMOUNT_TICKETS
   FROM TICKETS, ROUTES
   WHERE TICKETS.ROUTE_CODE = ROUTES.ROUTE_CODE
       AND PRICE > 300
   GROUP BY ORIGIN;
```

OUTPUT:

```
ORIGIN          AMOUNT_TICKETS
--------------- --------------
Baghdad                     42
Bangkok                     42
Beijing                     42
Bogota                      42
Bombay                      42
Calcutta                    42
Chongqing                   42
Dhaka                       42
Istanbul                    84
Lagos                       42
Lahore                      42
Lima                        42
London                      84
Madras                      42
Madrid                      84
Manila                      42
Rangoon                     42
Santiago                    42
Sao Paulo                   42
Shanghai                    43
Taipei                      42
Tehran                      42
Tianjin                     42
Tokyo                       42
Wuhan                       42

  25 record(s) selected.
```

Professor's Feedback #7

-- 8. How much money has the company earned selling tickets?

```
SELECT SUM(PRICE) AS REVENUE
   FROM TICKETS, ROUTES
   WHERE TICKETS.ROUTE_CODE = ROUTES.ROUTE_CODE;
```

OUTPUT:

```
REVENUE
---------------------------------
                       3551394.00

  1 record(s) selected.
```

Professor's Feedback #8

-- 9. List the price of each tickets order by price appearing first the more expensive.

```
SELECT TICKET_ID, PRICE
   FROM TICKETS, ROUTES
   WHERE TICKETS.ROUTE_CODE = ROUTES.ROUTE_CODE
   ORDER BY PRICE DESC;
```

OUTPUT:

```
TICKET_ID PRICE
--------- ---------
T157489     7476.00
T157490     7476.00
T157491     7476.00
T157492     7476.00
T157493     7476.00
T157494     7476.00
T157495     7476.00
T157496     7476.00
T157497     7476.00
T157498     7476.00
(…)
```

```
1177 record(s) selected
```

Note: the output was too long so the first 10 rows have been copied.

Professor's Feedback #9

-- 10. Obtain the name and telephone of the passenger that flew the route R7203 the 12/28/2005 in planes with more than 300 seats.

```
SELECT NAME, TELEPHONE
   FROM PASSENGERS, TICKETS, AIRPLANES
   WHERE ID = PASSENGER_ID
        AND AIRCRAFT_ID = AIRCRAFT_REGISTRATION
        AND FLIGHT_DATE = '12/28/2005'
        AND ROUTE_CODE = 'R7203'
        AND SEATS > 300;
```

OUTPUT:

```
NAME                 TELEPHONE
-------------------- ---------
IRVING STERN         642364231

  1 record(s) selected.
```

Professor's Feedback #10

CONCLUSION

Finally, in order to close the Virtual Machine in an elegant way:

```
shutdown –h now
```

Professor's General Comments: