Lab 3 (2%)

Correlated subqueries

topics

Correlated and uncorrelated queries

Group work acknowledgment

We members of Group 2 **[Kabir Narula] [Maksym Volkovynskyi**] declare that the attached assignment is our own work in accordance with the Seneca Academic Policy. No part of this assignment has been copied manually or electronically from any other source (including web sites) **or distributed to other students.**

**Specify below what each member has done towards the completion of this work:**

|  |  |  |
| --- | --- | --- |
|  | **Name** | **Task(s)** |
| **1-** | **Kabir Narula** | **Everything** |
| **2-** | **Maksym Volkovynskyi** | **Everything** |

**We did each question individually so that we can practice better and then later compared and matched our answers…**

Before you start

You are to create a new database named “AviaCo” and run the sql script you are given to create the tables in the database.

Instructions

For each of the following questions write the sql query (in text) and show the result set underneath each SQL query. For questions 1 to 5, you should write a correlated subquery. Answers using over() and partition or using join with a group by query are worth 0.

1. Show the charter trip code, the wait hours, the destination and the average wait time of charters of that same charter’s destination. Order the charters by destination.

Output: first 5 rows out of 18

A white grid with black text

Description automatically generated

SELECT

c1.CHAR\_TRIP,

c1.CHAR\_HOURS\_WAIT AS wait\_hours,

c1.CHAR\_DESTINATION AS destination,

(

SELECT AVG(c2.CHAR\_HOURS\_WAIT)

FROM CHARTER c2

WHERE c2.CHAR\_DESTINATION = c1.CHAR\_DESTINATION

) AS avg\_wait\_time

FROM CHARTER c1

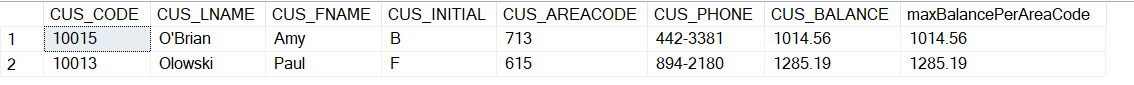
ORDER BY c1.CHAR\_DESTINATION;

A screenshot of a computer

Description automatically generated

1. Show the customers that have the highest balance in their area code.

Output:



SELECT

c1.CUS\_CODE,

c1.CUS\_LNAME,

c1.CUS\_FNAME,

c1.CUS\_INITIAL,

c1.CUS\_AREACODE,

c1.CUS\_PHONE,

c1.CUS\_BALANCE

FROM CUSTOMER c1

WHERE c1.CUS\_BALANCE = (

SELECT MAX(c2.CUS\_BALANCE)

FROM CUSTOMER c2

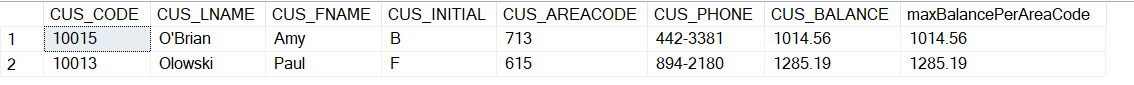
WHERE c2.CUS\_AREACODE = c1.CUS\_AREACODE

);

A screenshot of a computer

Description automatically generated

Add the max balance per Area code column to the output



SELECT

c1.CUS\_CODE,

c1.CUS\_LNAME,

c1.CUS\_FNAME,

c1.CUS\_INITIAL,

c1.CUS\_AREACODE,

c1.CUS\_PHONE,

c1.CUS\_BALANCE,

(

SELECT MAX(c2.CUS\_BALANCE)

FROM CUSTOMER c2

WHERE c2.CUS\_AREACODE = c1.CUS\_AREACODE

) AS max\_balance\_per\_area

FROM CUSTOMER c1

WHERE c1.CUS\_BALANCE = (

SELECT MAX(c2.CUS\_BALANCE)

FROM CUSTOMER c2

WHERE c2.CUS\_AREACODE = c1.CUS\_AREACODE

);

A screenshot of a computer

Description automatically generated

1. Show the charters that have wait time greater than the average wait time of charters of the same destination.

Output:

A screenshot of a table

Description automatically generated

SELECT

CHAR\_TRIP,

CHAR\_HOURS\_WAIT AS wait\_hours,

CHAR\_DESTINATION

FROM CHARTER c1

WHERE CHAR\_HOURS\_WAIT > (

SELECT AVG(c2.CHAR\_HOURS\_WAIT)

FROM CHARTER c2

WHERE c2.CHAR\_DESTINATION = c1.CHAR\_DESTINATION

);

A screenshot of a computer

Description automatically generated

Add the avg wait time per dest to the output

A screenshot of a table

Description automatically generated

SELECT

CHAR\_TRIP,

CHAR\_HOURS\_WAIT AS wait\_hours,

CHAR\_DESTINATION,

(

SELECT AVG(c2.CHAR\_HOURS\_WAIT)

FROM CHARTER c2

WHERE c2.CHAR\_DESTINATION = c1.CHAR\_DESTINATION

) AS avg\_wait\_time\_per\_dest

FROM CHARTER c1

WHERE CHAR\_HOURS\_WAIT > (

SELECT AVG(c2.CHAR\_HOURS\_WAIT)

FROM CHARTER c2

WHERE c2.CHAR\_DESTINATION = c1.CHAR\_DESTINATION

);

A screenshot of a computer

Description automatically generated

1. Show the charters that have wait time greater than the average wait time of charters that flew on the same day.

Output:

A screenshot of a data

Description automatically generated

SELECT

CHAR\_TRIP,

CHAR\_HOURS\_WAIT AS wait\_hours,

CHAR\_DATE

FROM CHARTER c1

WHERE CHAR\_HOURS\_WAIT > (

SELECT AVG(c2.CHAR\_HOURS\_WAIT)

FROM CHARTER c2

WHERE c2.CHAR\_DATE = c1.CHAR\_DATE

);

A screenshot of a computer

Description automatically generated

Add the avg wait time of same day flights to the output

A screenshot of a data

Description automatically generated

SELECT

CHAR\_TRIP,

CHAR\_HOURS\_WAIT AS wait\_hours,

CHAR\_DATE,

(

SELECT AVG(c2.CHAR\_HOURS\_WAIT)

FROM CHARTER c2

WHERE c2.CHAR\_DATE = c1.CHAR\_DATE

) AS avg\_wait\_time\_same\_day\_flights

FROM CHARTER c1

WHERE CHAR\_HOURS\_WAIT > (

SELECT AVG(c2.CHAR\_HOURS\_WAIT)

FROM CHARTER c2

WHERE c2.CHAR\_DATE = c1.CHAR\_DATE

);

A screenshot of a computer

Description automatically generated

1. Show the charters that have a fuel consumption per hour greater than the average fuel consumption of charters of the same aircraft model.

Write a subquery that calculates the average fuel consumption given the outer query model code.

Output:

A table with numbers and letters

Description automatically generated

SELECT

CHAR\_TRIP,

C.AC\_NUMBER,

A.MOD\_CODE,

CHAR\_FUEL\_GALLONS / CHAR\_HOURS\_FLOWN AS fuel\_consumptionperhour

FROM CHARTER C

JOIN AIRCRAFT A ON C.AC\_NUMBER = A.AC\_NUMBER

WHERE CHAR\_FUEL\_GALLONS / CHAR\_HOURS\_FLOWN > (

SELECT AVG(c2.CHAR\_FUEL\_GALLONS / c2.CHAR\_HOURS\_FLOWN)

FROM CHARTER c2

WHERE c2.AC\_NUMBER IN (

SELECT AC\_NUMBER

FROM AIRCRAFT

WHERE MOD\_CODE = A.MOD\_CODE

)

);

A screenshot of a computer

Description automatically generated

Add the avg Hourly fuel consumption per aircraft model to the output

A table with numbers and letters

Description automatically generated

SELECT

CHAR\_TRIP,

C.AC\_NUMBER,

A.MOD\_CODE,

CHAR\_FUEL\_GALLONS / CHAR\_HOURS\_FLOWN AS fuel\_consumption,

avg\_fuel.avg\_hourly\_fuel\_consumption\_per\_model

FROM CHARTER C

JOIN AIRCRAFT A ON C.AC\_NUMBER = A.AC\_NUMBER

JOIN (

SELECT

A.MOD\_CODE,

AVG(C.CHAR\_FUEL\_GALLONS / C.CHAR\_HOURS\_FLOWN) AS avg\_hourly\_fuel\_consumption\_per\_model

FROM CHARTER C

JOIN AIRCRAFT A ON C.AC\_NUMBER = A.AC\_NUMBER

GROUP BY A.MOD\_CODE

) AS avg\_fuel ON A.MOD\_CODE = avg\_fuel.MOD\_CODE

WHERE CHAR\_FUEL\_GALLONS / CHAR\_HOURS\_FLOWN > avg\_fuel.avg\_hourly\_fuel\_consumption\_per\_model;

A screenshot of a computer

Description automatically generated

SUBMISSION

Submit your lab3\_GroupX.doc file on BB.

Replace X with your group number.

If a student does not contribute to the work, do not list his/her name(s) under the group section in the lab file and will get 0.

Grading rubrics

Each question is worth 5pts. Total is 25 pts.

If the output is included without the query, the answer is worth 0.