Lab 3 (2%)

Correlated and uncorrelated queries

topics

any, all operators, Correlated and uncorrelated queries

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.

1. What is the maximum charter fuel consumption per hour? Fuel consumption per hour is calculated as follows: fuelPerHr= CHAR\_FUEL\_GALLONS/ CHAR\_HOURS\_FLOWN.

SELECT MAX(CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN) as MAX\_FUEL

FROM CHARTER

A picture containing shape

Description automatically generated

1. Show the charters that have the highest fuel consumption per hour.

Fuel consumption per hour is calculated as follows:

fuelPerHr= CHAR\_FUEL\_GALLONS/ CHAR\_HOURS\_FLOWN.

-- use query 1 as subquery in a where clause.

SELECT CHAR\_TRIP, CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN as FUEL\_PER\_HR

FROM CHARTER

WHERE CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN = (SELECT MAX(CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN) FROM CHARTER)

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1. Z-score transformation is a numerical transformation of a distribution/series of values that puts the values in a scale of [-3 3].

Show the charter trip and the fuel consumption per hour and the standardized fuel consumption per hour or Z-score. Fuel consumption per hour is calculated as follows:

fuelPerHr= CHAR\_FUEL\_GALLONS/ CHAR\_HOURS\_FLOWN.

the standardized fuel consumption per hour or z-score is calculated as follows.

Z-score = (fuelPerHr-avg(fuelPerHr))/stdev(fuelPerHr).

SELECT CHAR\_TRIP, (CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN) as FUEL\_PER\_HR, (CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN - (SELECT AVG(CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN )

FROM CHARTER))/(SELECT STDEV(CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN) FROM CHARTER) as Z\_FUEL

FROM CHARTER

Table

Description automatically generated

1. Find the charters that exhibit outliers in fuel consumption per hour. Check for standardized fuel consumption per hour larger or less than -1.5 and 1.5 respectively.

-- use query3 in a from clause.

SELECT CHAR\_TRIP, FUEL\_PER\_HR, Z\_FUEL

FROM (SELECT CHAR\_TRIP, (CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN) as FUEL\_PER\_HR, (CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN - (SELECT AVG(CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN )

FROM CHARTER))/(SELECT STDEV(CHAR\_FUEL\_GALLONS/CHAR\_HOURS\_FLOWN) FROM CHARTER) as Z\_FUEL

FROM CHARTER) CHARDIS

WHERE Z\_FUEL<-1.5 or Z\_FUEL>1.5

Table

Description automatically generated

1. Calculate the average fuel consumption per hour for each group of charters with the same destination and show only the destinations that have average fuel consumption greater than 40.

Also show the number of charters per destination.

The fuel consumption per hour is calculated as CHAR\_FUEL\_Gallons/CHAR\_HOURS\_FLOWN

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

Order the charters by destination.

1. Show the customers that have the highest balance in their area code.
2. Show the charters that have wait time greater than the average wait time of charters of the same destination.
3. Show the charters that have wait time greater than the average wait time of charters that flew on the same day.
4. 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 avg fuel consumption given the outer query model code.

SUBMISSION

Submit your lab2\_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 50 pts.

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