Stevens Institute of Technology
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Hoboken, NJ 07030

CS561 – Programming Assignment 2

Due Dates: 5/3/2019 (Fri.)

Objectives:

- You will continue with evaluating simple report queries and produce the output. As with the assignment #1, you will also express the queries in SQL. The reports below are similar in nature with the reports from the assignment #1; however, there are two main differences between the two: (1) the new reports will require aggregation "outside" the groups (in assignment #1, all of the aggregates were computed for the rows within the groups); (2) some of the aggregates in the new reports will be computed based on other aggregates of the same reports – they are known as "dependent aggregates".

Description:

- Generate reports based on the following queries:
  1. For each customer, product and state combination, compute (1) the product's average sale of this customer for the state (i.e., the simple AVG for the group-by attributes. This is the easiest part), (2) the average sale of the product and the state but for all of the other customers and (3) the customer's average sale for the given state, but for all of the other products.
  2. For customer and product, show the average sales before and after each month (e.g., for February, show average sales of January and March. For "before" January and "after" December, display <NULL>. The "YEAR" attribute is not considered for this query – for example, both January of 2007 and January of 2008 are considered January regardless of the year.
  3. For customer and product, find the month by which time, a half of the sales quantities have been purchased. Again for this query, the "YEAR" attribute is not considered. Another way to view this problem (as in problem #2 above) is to pretend all 500 rows of sales data are from the same year.

The following are sample report output (NOTE: the numbers shown below are not the actual aggregate values. You can write simple SQL queries to find the actual aggregate values).

Report #1:

CUSTOMER	PRODUCT	STATE	PROD_AVG	OTHER_CUST_AVG	OTHER_PROD_AVG
Helen	Bread	NY	243	268	1493
Emily	Milk	NJ	1426	478	926

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Report #2:

CUSTOMER	PRODUCT	MONTH	BEFORE_AVG	AFTER_AVG
Bloom	Bread	1	<NULL>	2434
Sam	Milk	3	254	325

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Report #3:

CUSTOMER	PRODUCT	1/2 PURCHASED BY MONTH
Emily	Bread	2
Bloom	Milk	3

. . . .

Grading: **NOTE: A query with syntax errors will lose 50% of the points for the query.**

Submission: Submit a file containing all of the 3 queries or 3 separate files with each query in a separate file with your name and CWID on it on Canvas. If you create 3 separate files, please place them in a ZIP file and submit the ZIP file.

Please include a "README" file if any special instructions are required.

I encourage you to discuss the "ideas" with your TAs (rather than your classmates, esp, if you have any specific questions), but the final queries must be your own work. If I determine that your queries are copies of someone else's, both you and that someone else will be disciplined (you will receive 0 for the entire assignment) and possibly receive additional penalties for the course.