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CS 450 — Summer 2016 Dr. A. Motro 20 July 2015

Assignment No. 5: SQL

Solutions due 25 July. In the database that you created in Assignment 4, formulate and execute each of the following queries in SQL. In each case, you should attempt to handle the task in a single (possibly nested) SQL statement, without using views or SQL subqueries in the FROM clause. However, if you don't succeed, you should consider these options. Upload a zip archive with four files.

1. **queries.sql**: SQL statements for each of the 10 problems of this homework.
2. **queries.txt**: The output of the execution of **queries.sql**.
3. **build.sql**: A script to create your database (all CREATE and INSERT statements).
4. **database.txt**: A "dump" of your database (schemas, constraints and instances). Same as what you submitted in Assignment 4.

The idea is that we can run **build.sql** to create your database, then run **queries.sql** on this database, and validate that the result is the same as **queries.txt**. Alternatively, we can validate **queries.txt** by manually checking the queries in **queries.sql** against **database.txt**.

Important: To get proper credit for this work you must upload the files exactly as described and meet the deadline.

The first 6 queries are similar to queries in Assignment 3.

I05, I00, I01

1. Items that are available from at least two suppliers at the same cost: (Item#, Desc)
2. Customers that have made at least one purchase in 2015 of an item whose price was over $100: (Cust#, Cname) C10, C11, C14
3. Items with quantity-on-hand greater than 20, that have not been purchased in 2016: (Item#, Desc)
4. Customers whose credit cards have all expired (expiration date earlier than today's date): (Cust#, Cname)
5. Customers who purchased all the items available from supplier S01: (Cust#, Cname)
6. Pairs of employees in the same department who have identical skills (each pair should be listed only once): (Emp#1, Ename1, Emp#2, Ename2)
7. Customers and their purchase summaries for 2015, sorted in descending order of Total_payed (Total_payed should include shipping): (Cust#, Cname, Number_of_purchases, Total_payed)

remember * quantity

ship cost is for each?
Say cus buy 2 -> ship cost 3.99x2 or 3.99?

Solution, Akhil

? Average cost of each items?

the quantity that is procured

8. Items and their procurement summaries for 2015: (Item#, Desc, Total_procured, Total_cost, Average_cost). ? of each item

9. The type of credit card used most heavily (highest amount charged): (Credit_card_type).

10. Number of employees who work for one department but manage another: (Total_Violators).

6) How to approach the problem.

1) $S_1 \subseteq S_2$

$S_2 \subseteq S_1$

$\Rightarrow S_1 = S_2$

2) $S_1 - S_2 = \emptyset$

$S_2 - S_1 = \emptyset$ $\Rightarrow S_1 = S_2$

3) $S_1 \subseteq S_2$

$|S_1| = |S_2|$ $\Rightarrow S_1 = S_2$