IDS 521 – Fall 2019

Assignment #2

To do this assignment, you may form a group of up to two students

Assigned date: September 10, 2019 **Due date: post your answer file on Blackboard by 11:59pm on September 21, 2019**

To answer these questions, you need to consult the relational schema on the last page of this document as well as the new Pine Value Furniture (NewPVF) database that contains some sample data.

1. (10%) State what the following query computes:

   $\pi_{Vendor\ Name}(\pi_{Vendor\ ID}(\sigma_{Material\ Description='Walnut'} Raw\_Materials\_t \bowtie \sigma_{Unit\ price<14}\ Supplies\_t) \bowtie Vendor\_t)$

2. (15%) Compose a relational algebra expression that would show each product id and product name that uses *all* of raw materials with material description = cherry *[hint: use a Division operator].*

3. (20%) Compose a SQL statement that is equivalent to Question 1 above. Note, you might want to try and execute this SQL statement against the NewPVF database in SQL Server to see if it works as intended.

4. (20%) Compose a SQL statement that is equivalent to Question 2 above. Note, you might want to try and execute this SQL statement against the NewPVF database in SQL Server to see if it works as intended *[hint: use a correlated subquery].*

5. (20%) Compose an SQL statement to generate a list of two least expensive vendors (suppliers) for each raw material. In the result table, show the following columns: material ID, material description, vendor ID, vendor name, and the supplier's unit price. Sort the result table by material ID and supplier's unit price in ascending order. *Note: If a raw material has only one vendor (supplier), that supplier and its unit price for the raw material should also be in the result (output) table [hint: use a correlated subquery].*

6. (15%) Compose a query that would find customer(s) with exactly one order in October 2011. In the result table, display Customer_ID, Customer_Name, Order_ID, and Order_Date.

Relationships for PVFCh7-Ch9-Queries