COP-4722

Assignment-1

The purpose of this assignment is to familiarize with query optimization.

- Consider the following four queries specified on Premiere Products database (tables and schema):

    Q1: List the names of pair of customers who have the same credit limit.

    ```
    SELECT c1.CustomerName, c2.CustomerName
    FROM customer c1, customer c2
    WHERE c1.CreditLimit = c2.CreditLimit
        and c1.CustomerNum < c2.CustomerNum;
    ```

    Q2: List the last name of Rep and the total balance of all customers of the rep who placed orders on 29-NOV-2013.

    ```
    SELECT r.LastName, Sum(c.Balance)
    FROM Rep r, Customer c, orders o
    WHERE r.RepNum = c.RepNum and c.CustomerNum = o.CustomerNum and o.OrderDate = '29-NOV-2013'
    GROUP BY r.RepNum, r.LastName;
    ```

    Q3: List part numbers for parts that were ordered by customers of sales rep with RepNum as either '20' or '65'.

    ```
     (SELECT Distinct PartNum
      FROM Customer c, Orders o, OrderLine ol
      WHERE c.RepNum = '20' and c.CustomerNum = o.customerNum and o.OrderNum = ol.OrderNumD)
    UNION
     (SELECT Distinct PartNum
      FROM Customer c, Orders o, OrderLine ol
      WHERE c.RepNum = '65' and c.CustomerNum = o.customerNum and o.OrderNum = ol.OrderNumD);
    ```

    Q4: List the name of customers who placed order(s) after 30-NOV-2013 for SG parts.

    ```
    SELECT CustomerName
    FROM Customer c, Orders os, OrderLine ol, Part p
    WHERE c.CustomerNum = os.CustomerNum
      and os.OrderDate > 30-NOV-2013
      and os.OrderNum = ol.OrderNum
      and ol.PartNum = p.Partnum
      and p.Class = 'SG';
    ```

    Draw the initial query tree for each of these queries, then show how the query tree is optimized (one rule at a time) by the algorithm outlined in chapter 19
    and write the SQL query for the final optimized query tree.

- Extend the sort-merge join algorithm shown in the modified Figure to implement the full outer join operation.

Save all answers in a pdf file (asg1.pdf) and upload it through the class website.
Submit a print out of the uploaded file along with the following signed declaration:

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Name: _____

Panther-ID: x x x -_____

Course: COP 4722
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Assignment#: 1

Due: Tue, Sep 23, 2014

I hereby certify that this work is my own and none of
it is the work of any other person.

                    Signature: _____
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