Lesson Plan 06, ISTA-420

Chapter 3, T-SQL Fundamentals

August 15, 2017

1 Class Discussion

Pages 103 – 123.

1. In general, why would you even want to join two (or more) tables together? This is a good time to think about the nature of relational algebra.
2. Describe in your own words the output from an *inner join*.
3. Describe in your own words the output from an *outer join*.
4. Describe in your own words the output from an *cross join*.
5. A convenient mnemonic for remembering the various joins is "Ohio." Why is this true?
6. Give an example of a *composite join*.
7. What is the difference between the following two queries? The business problem is "How many orders do we have from each customer?"

```
        ================first query===============
SELECT C.custid, COUNT(*) AS numorders
FROM Sales.Customers AS C
LEFT OUTER JOIN Sales.Orders AS O
ON C.custid = O.custid
GROUP BY C.custid;
        ================second query===============
SELECT C.custid, COUNT(O.orderid) AS numorders
FROM Sales.Customers AS C
LEFT OUTER JOIN Sales.Orders AS O
ON C.custid = O.custid
GROUP BY C.custid;
```

8. What might be one reason the following query does not return the column *custID* in this query?

```
SELECT C.custid, C.companyname, O.orderid, O.orderdate
FROM Sales.Customers AS C
LEFT OUTER JOIN Sales.Orders AS O
ON C.custid = O.custid
WHERE O.orderdate >= '20160101';
```

2 In Class Labs

Using SQLite and the Northwind database, write a SQL script that executes the following queries. Your deliverables should be your SQL script and the text output.

1. What is the order number and the date of each order sold by each employee?
2. List each territory by region.
3. What is the supplier name for each product alphabetically by supplier?
4. For every order on May 5, 1998, how many of each item was ordered, and what was the price of the item?
5. For every order on May 5, 1998, how many of each item was ordered giving the name of the item, and what was the price of the item?
6. For every order in May, 1998, what was the customer's name and the shipper's name?
7. What is the customer's name and the employee's name for every order shipped to France?
8. List the products by name that were shipped to Germany.

3 Homework

3.1 Readings

Read pages, Chapter 4, 133 – 149 in the *T-SQL Fundamentals* book.

3.2 Discussion

1. In your own words, what is a *subquery*?
2. In your own words, what is a *self contained subquery*?
3. In your own words, what is a *correlated subquery*?
4. Give an example of a subquery that returns a single value. When would you use this kind of subquery?
5. Give an example of a subquery that returns multiple values. When would you use this kind of subquery?
6. Give an example of a subquery that returns table values. When would you use this kind of subquery?
7. What does the *exists* predicate do? Give an example.
8. What happens if we use the *not* operator before a predicate? Give an example.
9. When you use *exists* or *not exists* with respect to a row in a database, does it return two or three values? Explain your answer.
10. How would you a subquery to calculate aggregates? For example, you want to calculate yearly sales of a product, and you also want to keep a running sum of total sales. Explain how you would use a subquery to do this.