

Chapter 02b In-class Lab Assignment

ISTA-420, T-SQL Fundamentals

In-class Lab — Writing and Executing SQL Scripts

Using the Northwind database

Open the Northwind database as directed by your instructor. The Northwind database is one that Microsoft used to train people how to use Access. You can find information about Northwind online.

Examining the schema of tables

Before you start using any database, you must understand the data the database contains, how the data is structured, and the relationship between the tables.

Writing simple queries

You will write and execute queries from scripts, and redirect the output to text files. You will join two or more tables, filter data by given parameters, and sort data by specific variables. You are not expected to understand these queries (yet!) — just to run them and understand the output.

1. Who are our customers in North America?
2. What orders were placed in April, 1998?
3. What sauces do we sell?
4. You sell some kind of dried fruit that I liked very much. What is its name?
5. What employees ship products to Germany in December?
6. We have an issue with product 19. I need to know the total amount and the net amount of all orders for product 19 where the customer took a discount.
7. I need a list of employees by title, first name, and last name, with the employee's position under their names, and a line separating each employee.
8. I need a list of our customers and the first name only of the customer representative.
9. Give me a list of our customer contacts alphabetically by last name.
10. I need a report telling me the most common pairing of customers and employees with the greatest order volume (by the number of orders placed). Exclude pairings with minimal orders.
11. I need a report listing the highest average selling product by product id. The average is determined by the total sales of each product id divided by the quantity of the product sold. Include only the highest 20 products.

Solutions to the lab queries

Attempt to write the queries before you look at the solutions. Do not look at the solutions before you attempt to write the query.

```
1 select * from customers where country in ('USA','Mexico','Canada');
2
3 select * from orders where orderdate between '1998-04-01' and '1998-04-30';
4
5 select * from products where productname like '%sauce%';
6
7 select productname from products where productname like "%dried%";
8
9 select employeeid, orderdate, shipcountry from orders where orderdate like '%-12-%' and
   shipcountry like 'Germany';
10
11 select orderid, productid, unitprice, quantity, discount, (unitprice * quantity) as total, (
   unitprice * quantity - discount) as net from order_details where productid = 19 and
   discount > 0;
12
13 -- note the concatenation character in SQLite is the double pipe ('||')
14 -- note the single quote that ends the line
15 -- which "quotes" the literal new line character
16 -- and products a new line in the output
17 select titleofcourtesy || '_' || firstname || '_' || lastname || '
18 ' || title || '
19 ' from employees;
20
21 select substr(contactname, 1, pos-1) as first_name, companyname
22    from (select *, instr(contactname, '_') as pos from customers)
23    order by first_name;
24
25 select --contactname,
26        substr(contactname, instr(contactname, '_') + 1) || ',_' ||
27        substr(contactname, 1, instr(contactname, '_') - 1) as alphaname
28 from customers order by alphaname;
29
30 select customerid, employeeid, count(orderid) from orders
31    group by customerid, employeeid having count(orderid) > 4
32    order by count(orderid) desc;
33
34 select productid, count(quantity) as quant,
35        sum(unitprice * quantity) as totals,
36        avg((unitprice * quantity) / quantity) as average
37    from order_details group by productid order by average desc limit 20;
```