Basic Queries

1. Select all customers that are from NYC, Paris, London, Madrid, or Boston.

   Hint: use the `IN` operator along with a list of city names.

2. Find all orders that shipped in December 2004. Note: to do string pattern matching against a date column `d1`, you can do `d1::text LIKE 'yyyy-mm-dd'` in the `WHERE` clause. The `::text` is a type cast that tells SQL to treat the date value as a string.

3. Find the list of all unique customer cities.

4. Find the number, order date, & status of all orders not shipped

5. Find the productCode and total price (quantity times price each) of each item in the order details table sorted with highest total price at the top.

6. Find all products by Classic Metal Creations and Gearbox Collectibles in the Classic Cars product line.

Queries with Joins

7. Find all employees who report to Anthony Bow. List the employees' full names.

   Hint: join employees with itself.

8. Find all payments greater than $100,000 along with the associated customers who made the payments. Sort them with the highest payment at the top. Display paymentDate, amount, customerName. Use the payments table.

9. List all products ordered by customer Herkku Gifts, sorted by order date. Display productName, quantityOrdered, priceEach, orderDate.

   Hint: this is another example where you need to figure out how to connect customers to products that they have ordered.

Queries with Subqueries

10. Without using a join, get a distinct list of employees who represent customers.

    Hint: get a list of all sales employee numbers from the customers table in a subquery, and then use an outer query to get the names of those employees.

11. Find the customer who made the highest payment and report their customer ID.

12. Find the customer who made the highest payment, but this time project all payment fields, and order payments by amount from highest to lowest.

    Hint: use the last problem's solution in another subquery.

Queries with Groups

13. Find the number of customers that each employee represents. The results of your query should be (employee number, number of customers that the employee represents).

14. How many payments have been made by each customer? Show the customer name and the number of payments that customer has made.

    Hint: `GROUP BY` both the customer number and customer name, so that you can display the customer's name in the results.

15. List the total payments earned by each salesperson. Show the employee's name and the number of payments earned by them.

    Hint: relate each employee to their customers, and sum over all of the payments that those customers have made.

16. Without using joins, find all customers who have shipped orders with a total order cost greater than $60,000.

    Hint: this will require both a subquery and a group.

    Start with a subquery that finds all orders that are worth more than $60,000:
    - Group together all order details by their order number.
    - Multiply the quantity times the item price for every order detail, and sum over all of the order details for a given order number.

    The result of the subquery should be a list of all of the order numbers that have a total order cost of greater than $60,000. You can then use this subquery result to find all customers who correspond to those orders.