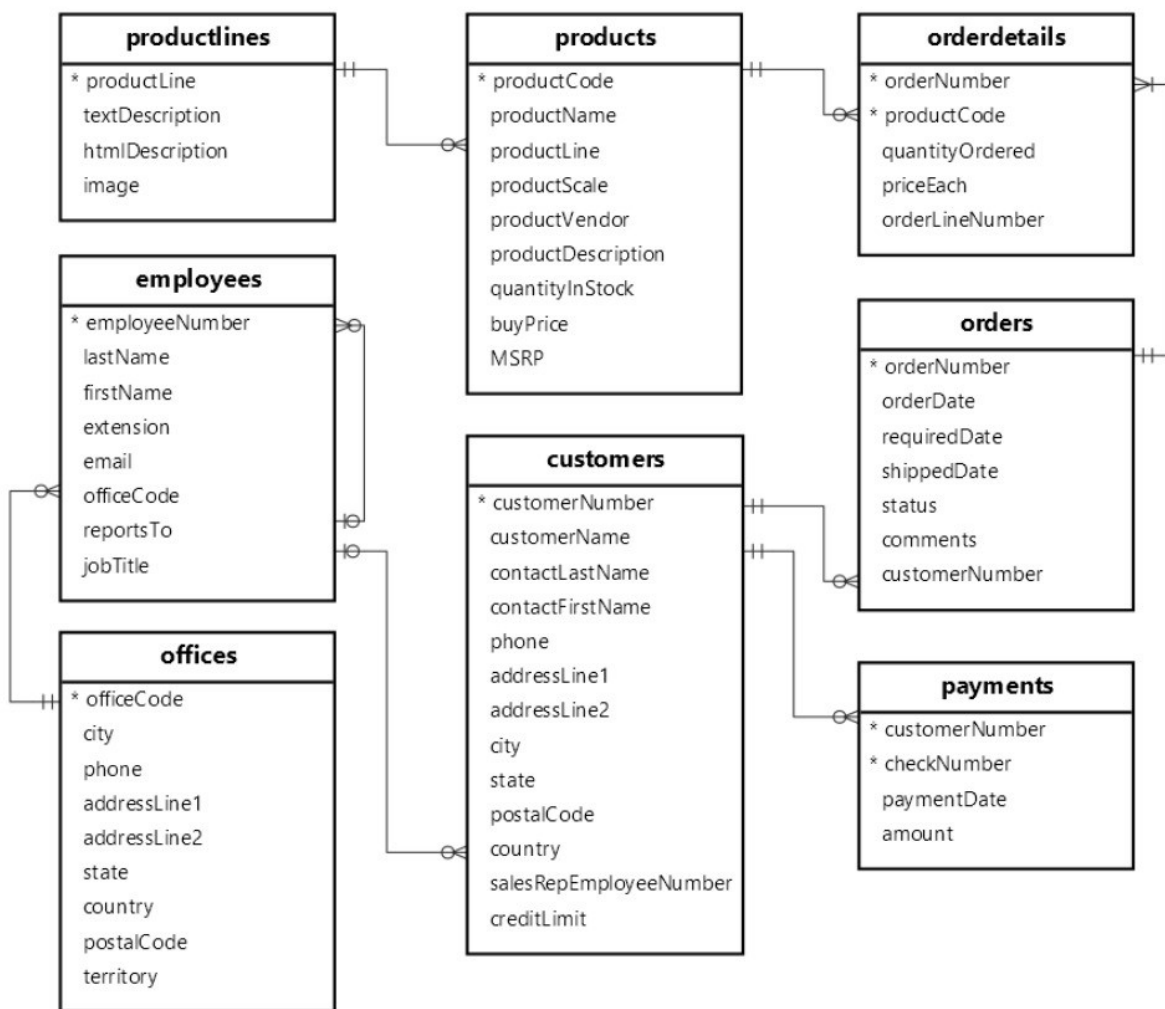


# **CS4.301: Data and Applications (Monsoon 2024)**

## **Homework - 3**

**Submission Deadline: Nov 8, 2024**

### **Database**



A Database file is provided along with the assignment. Use it to test your queries.

### **Database Schema**

The database schema provided includes the following tables:

1. **productlines**

- Attributes: productLine, textDescription, htmlDescription, image

2. **products**

- Attributes: productCode, productName, productLine, productScale, productVendor, productDescription, quantityInStock, buyPrice, MSRP

3. **orderdetails**

- Attributes: orderNumber, productCode, quantityOrdered, priceEach, orderLineNumber

4. **orders**

- Attributes: orderNumber, orderDate, requiredDate, shippedDate, status, comments, customerNumber

5. **customers**

- Attributes: customerNumber, customerName, contactLastName, contactFirstName, phone, addressLine1, addressLine2, city, state, postalCode, country, salesRepEmployeeNumber, creditLimit

6. **employees**

- Attributes: employeeNumber, lastName, firstName, extension, email, officeCode, reportsTo, jobTitle

7. **offices**

- Attributes: officeCode, city, phone, addressLine1, addressLine2, state, country, postalCode, territory

8. **payments**

- Attributes: customerNumber, checkNumber, paymentDate, amount

## Task

Write SQL Queries for the following :

1. Determine the total amount each customer has spent on all their orders.
2. Find the top five products that have generated the highest total sales.
3. Delete all orders that are marked as pending and were placed more than one month prior to the current date. (Hint: Use 2 queries instead of 1)
4. Retrieve the names of customers who have never ordered.
5. Establish a virtual table that displays comprehensive details of all orders that have been shipped, including customer name and employee number.
6. Find the employee numbers and names of the employees who are assigned to all the customers.

7. Retrieve products that have a higher stock quantity than the average stock level within their respective product categories.
8. Establish a virtual table that showcases the payment history of customers.
9. Determine which products are supplied by multiple vendors.
10. Find the customer who has generated the highest total revenue for the company.
11. List all customers whose total orders surpass 1% of their designated credit limits.
12. Identify employees who do not manage or oversee any other employees.
13. List all customers who have made payments exceeding the average payment.
14. Extract the customer name, postal code, and city for all customers who live in postal codes corresponding to any office location.
15. Find customers who have made payments after their orders were shipped.
16. Identify customers who have placed orders for products from at least 25% of the total available product lines.

## Submission Guidelines

- One member per team must upload a PDF document (*<teamnumber>.pdf*).

## Note

- Your answers will be subject to automated checking.
  - If you are facing issues in the accessing the database or in the assignment, please reach out on the TA mailing list.
  - Only typed submissions are allowed. **Handwritten submissions are NOT allowed.**
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