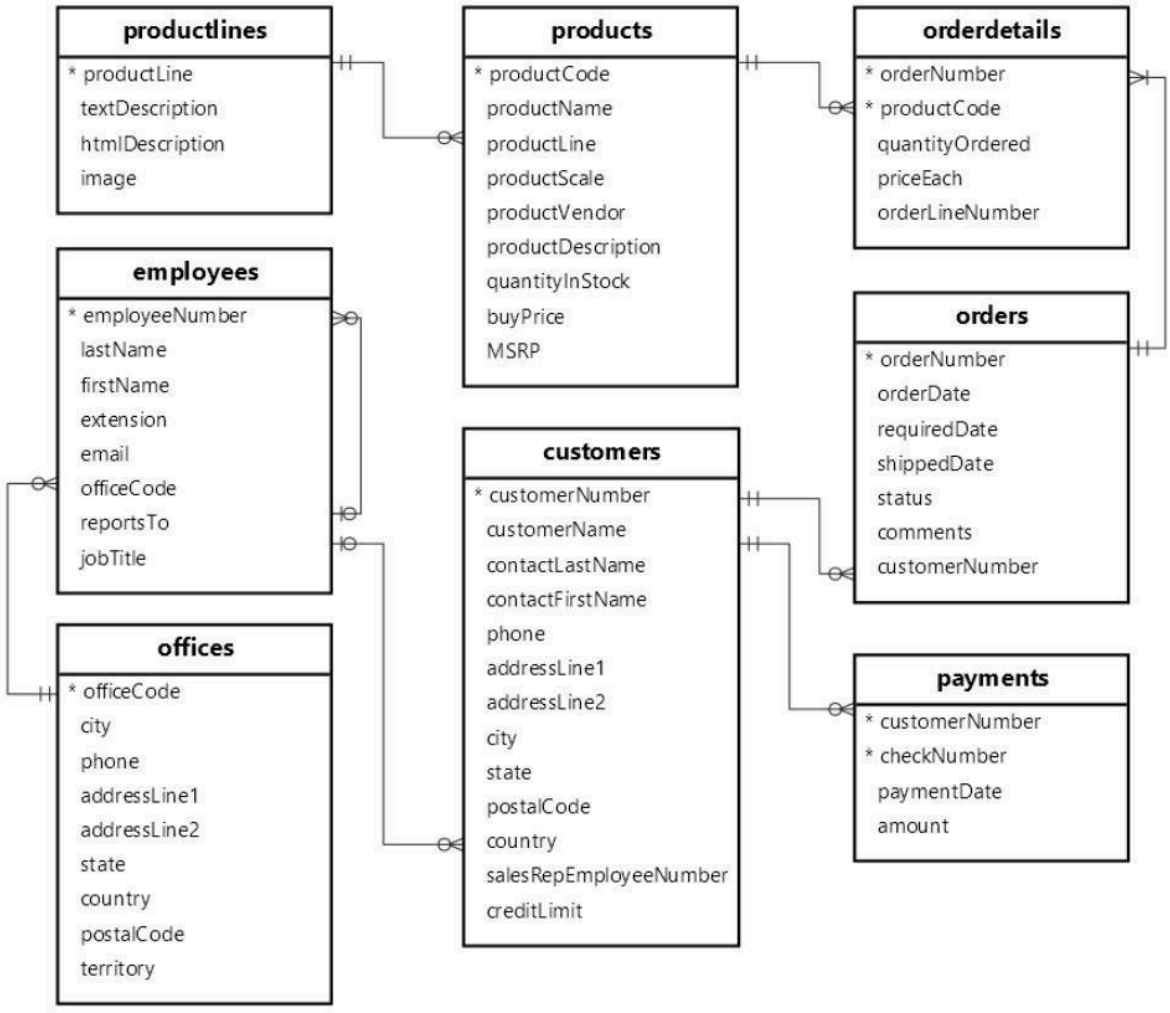
CS4.301: Data and Applications (Monsoon 2024)

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. List down customers' names and their total order amount, i.e the total amount worth of items purchased by them.
2. Find the top five products that have generated the highest total sales. List down the names of the products and their corresponding generated 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, use CURDATE and INTERVAL)
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. You only need to show the order number, order date, shipped date, customer name, and employee number.
6. Show each employee’s ID and name, paired with the specific customers assigned to them. Only display employees who have been assigned customers, and customers who have employees assigned to them.

7. Retrieve the names of the 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. Display the name of the customers, the order number, the date of payment, and the amount paid.
9. List the names of the products which are supplied by multiple vendors.
10. Find the customer name and the total ordered amount, for the customer with the highest purchased amount, calculated from all the orders they have placed.
11. List the names, their credit limits, and the total ordered amount for all customers whose total orders surpass 1% of their designated credit limits.
12. Identify employees who do not manage or oversee any other employees. Display their employee numbers, first names, and second names.
13. List all customers who have made payments exceeding the average payment. Show the customer name and the payment amount only.
14. Extract the customer name, postal code, and city for all customers who live in a postal code where an office is also located.
15. List down the names of the customers who have made any payments after any of their orders were shipped.
16. Display the names of the 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.**