SQL- Case Study

"Richard's Supply" is a company which deals with different food products. The company is associated with a pool of suppliers. Every Supplier supplies different types of food products to Richard's supply. This company also receives orders for food products from various customers. Each order may have multiple products mentioned along with the quantity. The company is maintaining the database for 2 years.

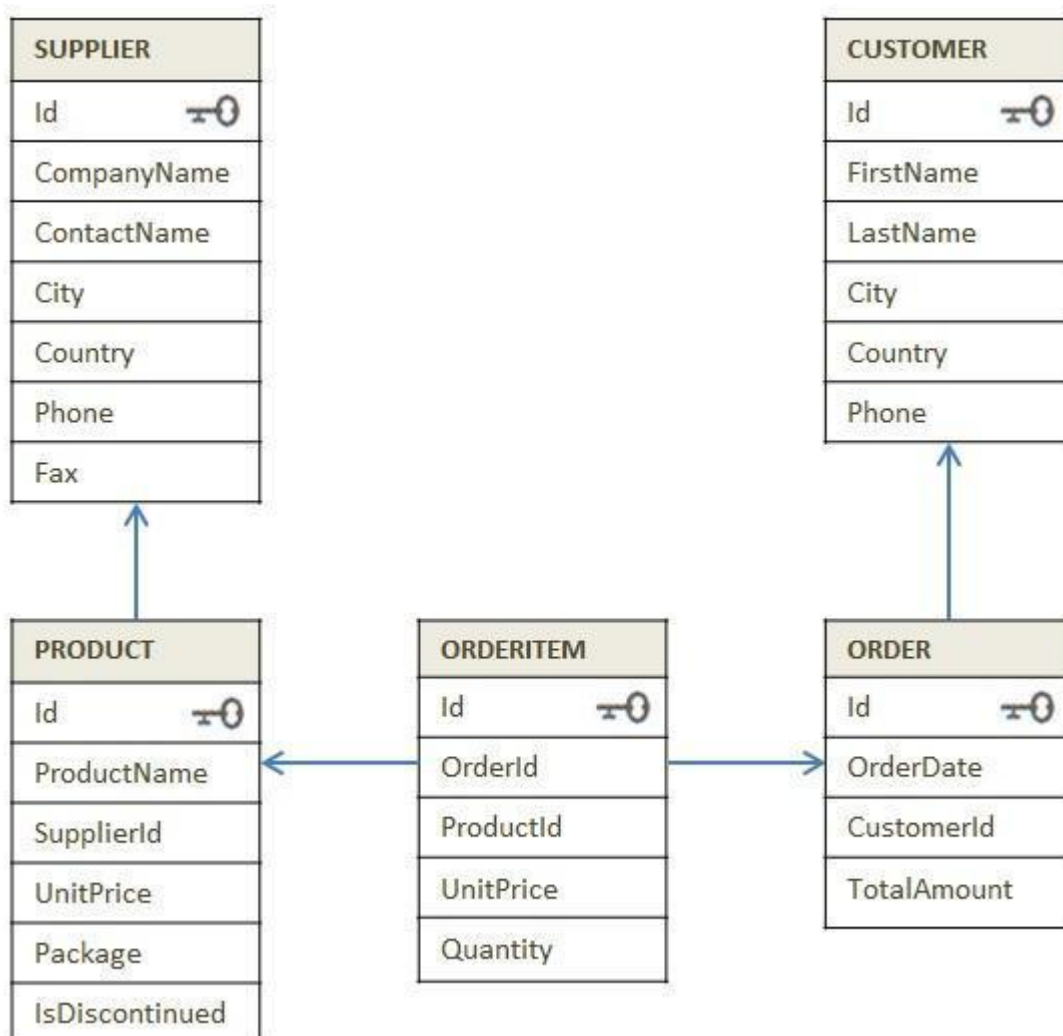Refer to the following Entity-Relationship diagram of the database.

SUPPLIER
- Id
- CompanyName
- ContactName
- City
- Country
- Phone
- Fax

CUSTOMER
- Id
- FirstName
- LastName
- City
- Country
- Phone

PRODUCT
- Id
- ProductName
- SupplierId
- UnitPrice
- Package
- IsDiscontinued

ORDERITEM
- Id
- OrderId
- ProductId
- UnitPrice
- Quantity

ORDER
- Id
- OrderDate
- CustomerId
- TotalAmount

Diagram: E-R Diagram of Supply_chain database

Try to get an insight into business through the dataset

Instruction: Execute the SQL files in the sequence given below.

1. 1_DDL_Case Study
2. 2_Data
3. 3_Data Constraints

Section A --> Know your data   **Time: 45 min**

1.   Read the data from all tables.

2.   Find the country-wise count of customers.

3.   Display the products that are not discontinued.

4.   Display the list of companies along with the product name that they are supplying.

5.   Display customer information about who stays in 'Mexico'

6.   Display the costliest item that is ordered by the customer.

7.   Display supplier ID who owns the highest number of products.

8.   Display month-wise and year-wise counts of the orders placed.

9.   Which country has the maximum number of suppliers?

10. Which customers did not place any orders?

Section B --> Know the business   **Time: 60 min.**

1.   Arrange the product ID, and product name based on high demand by the customer.

2.   Display the number of orders delivered every year.

3. Calculate year-wise total revenue.

4. Display the customer details whose order amount is maximum including his past orders.

5. Display the total amount ordered by each customer from high to low.

The sales and marketing department of this company wants to find out how frequently customers do business with them. (Answer Q 6 for the same)

6. Approach - List the current and previous order dates for each customer.

7. Find out the top 3 suppliers in terms of revenue generated by their products.

8. Display the latest order date (should not be the same as the first order date) of all the customers with customer details.

9. Display the product name and supplier name for each order

Section C --> Business Analysis   Time: 60 min.

1. Fetch the records to display the customer details who ordered more than 10 products in a single order

2. Display all the product details with the ordered quantity size as 1.

3. Display the companies that supply products whose cost is above 100.

4. Create a combined list to display customers and supplier lists as per the below format.

Type	ContactName	City	Country	Phone
Customer	Pirkko Koskitalo	Oulu	Finland	981-443655
Customer	Paula Parente	Resende	Brazil	(14) 555-8122
Customer	Karl Jablonski	Seattle	USA	(206) 555-4112
Customer	Matti Karttunen	Helsinki	Finland	90-224 8858
Customer	Zbyszek Piestrzeni...	Warszawa	Poland	(26) 642-7012
Supplier	Charlotte Cooper	London	UK	(171) 555-2222
Supplier	Shelley Burke	New Orleans	USA	(100) 555-4822

5. Display the customer list who belongs to the same city and country arranged in country wise.

Section D --> Challenge   **Time:60 Min.**

1. The company sells the product at different discounted rates. Refer actual product price in the product table and the selling price in the order item table. Write a query to find out the total amount saved in each order then display the orders from highest to lowest amount saved.

2. Mr. Kavin wants to become a supplier. He got the database of "Richard's Supply" for reference. Help him to pick:

   a. List a few products that he should choose based on demand.

   b. Who will be the competitors for him for the products suggested in the above questions?

3. Create a combined list to display customers' and suppliers' details considering the following criteria

   ● Both customer and supplier belong to the same country

   ● Customer who does not have a supplier in their country

   ● A supplier who does not have customers in their country

4. Every supplier supplies specific products to the customers. Create a view of suppliers and total sales made by their products and write a query on this view to find out the top 2 suppliers (using Windows function RANK() in each country by total sales done by the products.

5. Find out for which products, the UK is dependent on other countries for the supply. List the countries which are supplying these products in the same list.