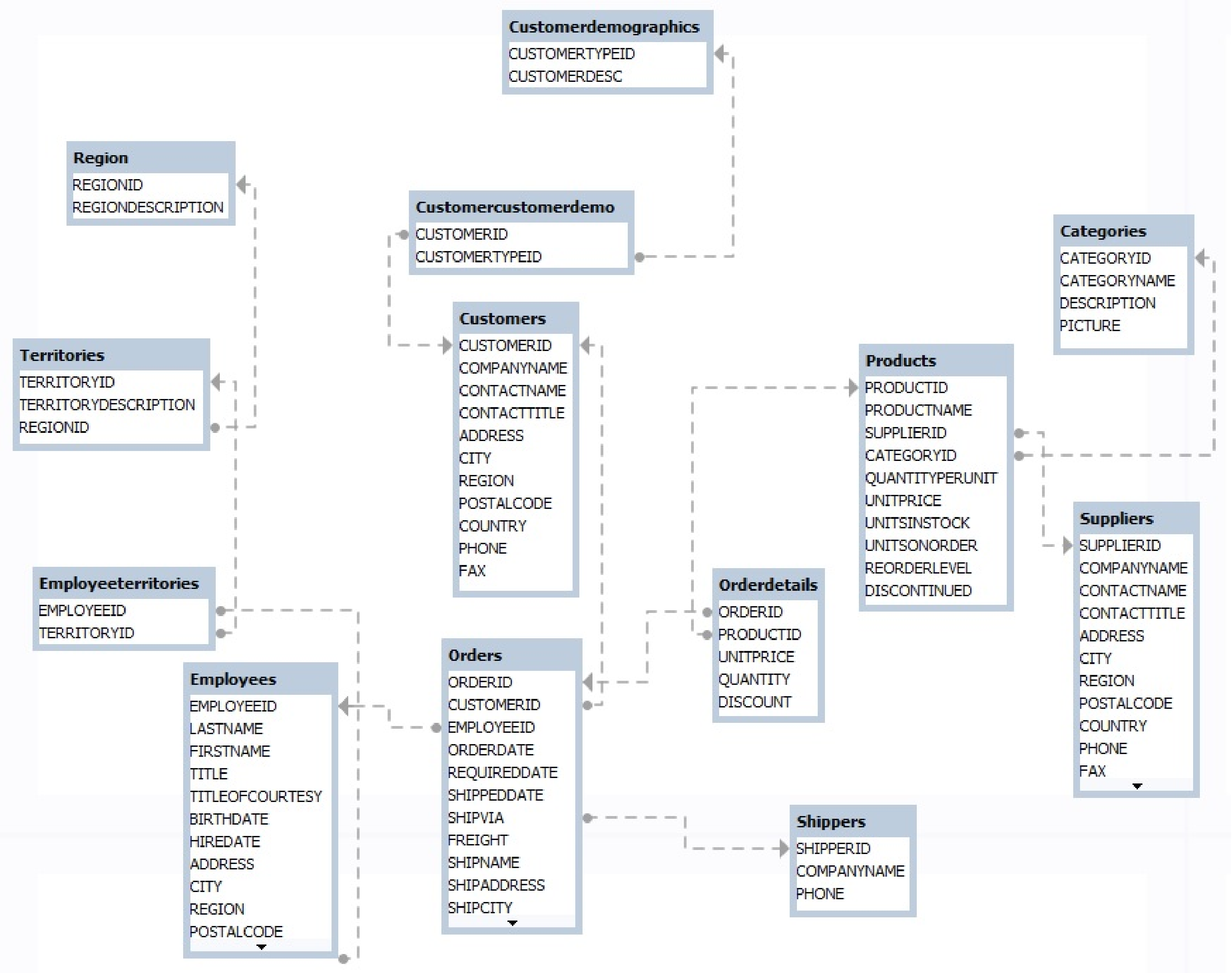
M03 - SQL

Live Lesson Challenge

SQL : Query Like You Mean It: Get Practicing!

Database: Northwind Company

The **Northwind database** is a classic sample database for learning SQL, originally created by Microsoft for training purposes. It represents a fictional company that imports and exports specialty foods. The database contains tables for employees, customers, orders, products, and categories, and it is great for practicing queries related to sales, customers, inventory, and shipping.



Challenge Tasks:

1. **Basic Queries and Filtering :** Retrieve and filter data from the database using simple queries and conditions.

- Retrieve the first 10 products from the `Products` table, ordered alphabetically by **product name**.
  - **SQL Tip:** Use `ORDER BY` for sorting and `LIMIT` for restricting the number of results.
- Find all **customers** who are located in the **country 'Germany'**.
  - **SQL Tip:** Use `WHERE` to filter based on the Country field in the `Customers` table.
- List all **orders** that were **shipped in '2016'**.
  - **SQL Tip:** Use `WHERE` to filter orders by the year, extracting the year from the `ShippedDate` column.

2. **Aggregations and Grouping :** Use aggregation functions like COUNT, SUM, AVG, etc., and group results appropriately.

- Find the total **number of products** in each **category**.
  - **SQL Tip:** Use `COUNT()` with `GROUP BY` to count products for each **category**, which is available in the `Categories` and `Products` tables.
- Calculate the **average unit price of products** in the **'Beverages' category**.
  - **SQL Tip:** Use `AVG()` with a `WHERE` clause to filter by `category`, grouping by `CategoryID`.
- Find the **total amount spent on all orders** (sum of the `OrderDetails` table) for **each customer**.
  - **SQL Tip:** Use `SUM()` to calculate the total spent and `GROUP BY` to aggregate by customer.

3. **Subqueries and CTEs:** Use subqueries and Common Table Expressions (CTEs) to simplify complex queries.

- Find the **customers** who have placed orders with a total **value greater than $1,000**.
  - **SQL Tip:** Use a subquery to calculate the **total value of each order** (by summing the `Quantity` and `UnitPrice` in the `OrderDetails` table) and then filter by orders **greater than $1,000**.
- Use a CTE to find the top 5 most popular products (by quantity sold) in the year 2016.
  - **SQL Tip:** Create a CTE that aggregates the total quantity sold for each product in `OrderDetails` during 2016, and then select the top 5 products based on this value.
