

Information Systems Management: focus on SQL.

Duration 3h, by group

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This evaluation is to be done by groups of 3 students, possibly 4, but with a *penalty* in this case.

1 Introduction

All this evaluation is based on the Southwave database. Basically, this database is about a company named "Southwave Traders". It memorizes all the transactions that occur between the company i.e. Southwave Traders and its customers as well as the purchase transactions between Southwave and its suppliers.

This database is composed of 11 main tables:

- Products: all the Southwave Traders products
- Suppliers: who supply products to Southwave Traders.
- Categories: list of product categories.
- Customers: buyers of Southwave Traders products.
- CustomerDemographics: customer categories.
- Employees: people who work for Southwave Traders.
- Territories: each employee is responsible for a territory (basically a city) which belongs to a region.
- Regions: logical division of the continent (north, south...).
- Shippers: companies who ship product order from Southwave Traders to its customers.
- Orders: information about each placed order (customer who placed the order, employee who handled the order, shipment date,...).
- Order Details: transaction details of each order such as products, unit price, quantity, applied discount (0.05 means 5% discount).

Figure 1 gives links between these tables. The next section gives some exercises to answer about this database. All the answer have to be written in an office document (MS Word or LibreOffice) and send to couchot@femto-st.fr.

Name:

Last Name:

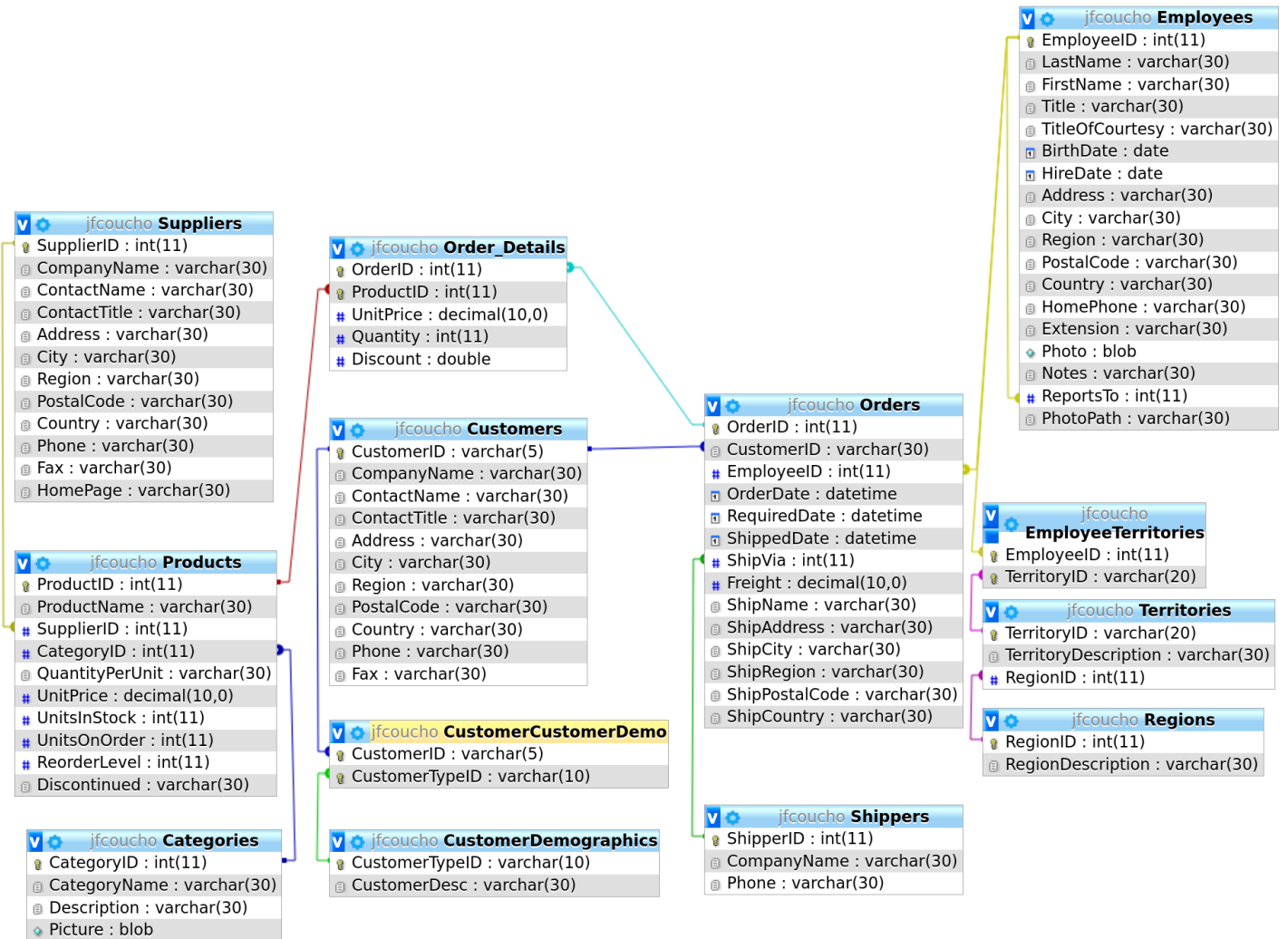


Figure 1: Relational Scheme

2 Exercises

Exercise 2.1. Starting with the Southwave database.

The objective is to build the database from a given query and next to work with such a database with an online SQLITE interpreter.

1. Get the sql query named southwave.txt to create and fill the Southwave database.
2. Build the southwave.sql script by renaming the downloaded file.
3. On the <https://sqliteonline.com/>, import the aforementioned script.

Exercise 2.2. Simple queries.

1. Display all the customer countries order by lexicographic order.
2. Display all the employees (id, first name, last name) who have successfully performed an order
3. Display all the suppliers (id, company Name) who manufactured products that have been sold at least once
4. Display all the product that are no longer available.
5. Display the 5 most expensive products.
6. Display all the products (id, name, units on order , units in stock) where stock is lower than the quantity on order.

Exercise 2.3. Other Queries.

1. Display all products whose price is above the average one.
2. Display for each category the number of orders.
3. Display the 5 pairs (supplier country, category) which are most frequently associated to products in the database.
4. Display all the distinct countries where there are customers, but no suppliers.

Exercise 2.4. Financial Calculation.

1. For each order detail, display the paid prize according to the quantity requested, the product unit price and the discount achieved.
2. For each order, display the sales price.
3. Fore each country, display the total amount spent by its resident customers.

3 Build your own queries

Exercise 3.1. Interesting queries

Propose your own questions (at least 10) and query answers to extract relevant information from this database. Points will be awarded for interesting questions and their resolution.