

Relational Databases Modeling and Design

Part 1: Introduction to Databases

Practical Work 3: Data Definition Language

Nga Nguyen

We use the following relational database:

Customer(id, name, address, zipcode)

Order(id, odate, *id_customer*)

Order_item(id, *id_order*, num_item, *id_product*, quantity)

Product(id, label, stock, price)

1. Write a SQL script **order_tables.sql** to create tables for this relational database
2. Start Oracle Database Express Edition (Linux or Windows)
 - /etc/init.d/oracle-xe restart
 - sqlplus mon_login@xe
3. Connect as system
4. Create a test user :
 - CREATE USER un_login IDENTIFIED BY mot_de_passe;
 - GRANT CONNECT, RESOURCE TO un_login;
5. Run the order_tables.sql script
6. Insert some data in the Customer table:

```
insert into Customer values (5, 'Jean Dupont', '1 avenue du parc Cergy', 95011);
insert into Customer values (2, ' Philippe Martin', '35 Champs Elysées Paris', 75008) ;
```

Verify the contain of the table by: `select * from customer ;`
7. Verify the primary key constraint by adding a customer with existing identifier :

```
insert into Customer values (2, 'François Lambert', '1 avenue du parc Cergy', 95011);
```
8. Complete your script by adding the following constraints :
 - Primary keys
 - Foreign keys :
 - Do not allow the deletion of a customer or a product if it is referenced by an order or an order item
 - Delete all items from an order when the order is removed.
 - Set the default value of order date to system date
 - Set the default value of stock to 0
 - Set the default value of quantity to 1
 - Make information such as name, num_item, label and price not null. Is it necessary for order date, stock and quantity?
 - Price and stock values must be ≥ 0
 - A quantity must be an integer and ≥ 1
 - The name, address and zip code can be omitted
 - The num_item is unique by order

9. Executes these insertions

```
INSERT INTO Client VALUES (1,'Dupond', 'Pierre', '35 rue St Honoré Fontainebleau', 77300) ;
INSERT INTO Client VALUES (2, 'Dupond', 'François', '35 rue St Honoré Fontainebleau', 77300) ;
INSERT INTO produit VALUES (1, 'Evian 2lx6', 4000, 2.99);
INSERT INTO produit VALUES (2, 'Lu Cracotte Framboise', 800, 3.99);
INSERT INTO produit VALUES (3, 'Nectar de Mangue', 4000, 2);
INSERT INTO produit VALUES (4, 'Contrex', 0, 2);
```

10. Try these requests, and comment

1 Add to the Customer table the following data:

5, Smith, John, 1 Avenue Cergy Park, 95011

2, Martin, Philip, 35 Champs Elysees Paris, 75008

4, Martin, Philip, 35 Champs Elysees Paris, 75008

2 Add the number one customer number 2, the date is August 30, 2008 order.

3 Add the number two customer order number 5.

4 Add in the table command_line the following lines:

1, 1, 1, 1, 5

2, 1, 1, 2, 53

3, 5, 2, 1, 7

5 Edit the ZIP code of 35 rue St Honoré 77305 by Fontainebleau.

6 Remove product whose label contains the word "Cracotte."