

# Homework Databases

Due: April 15, 2020

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## Problem 1:

Create the following database in MySQL using appropriate constraints such as foreign key restraints.

```
orders(ord_no, client_no, date_received, date_shipped)
```

```
orderDetails(ord_no, item_no, quantity, price)
```

```
client(client_no, clientName, address)
```

```
item(item_no, itemName, description)
```

Obviously, an order needs to have not only an `ord_no`, but also an existing client. Constraints are: `date_received` cannot be null, `date_shipped` as a default value of '9999-01-01' that will get updated when the order is shipped. Similarly, an `orderDetails` item needs to have an existing item in the table `item`. Notice that both `ord_no` and `item_no` in `orderDetails` need to be the primary key. I messed this up in a previous version.

(a) Populate the database with four clients, five items, twenty orders with on average two items ordered.

As we have seen, MySQL does not have materialized views.

(b) Create a view that shows the client name, the item name, the date the order was received for all orders that have not been shipped.

(c) Instead of a materialized view, we create a table that contains the name and the address of all clients who have gold standard, meaning that they ordered at least x dollars worth of items. You should pick x commensurate with the price of the items you invent.

Write triggers that update this table whenever an order is created (i.e. an insert into orders), updated (i.e. an update in orders or in `orderDetails`), or canceled (i.e. a delete into orders).

Run test runs to ascertain that this table is maintained correctly as clients receive or lose gold standard.

**Deliverables:** All the code that you needed to run this example. The contents of the tables from (a), (b), and the table defined in (c). Workbench screen captures are fine.

## Problem 2:

Download and install the MySQL tutorial sample database. You can find it at <https://www.mysqltutorial.org/mysql-sample-database.aspx>.

Using this database, write queries for:

1. The name of all clients that are also employees. (Test first and last name).
2. The total amount billed for all orders ordered by orderNumber.
3. The name of all clients that ordered something from the product line "planes"
4. The name of all clients from Finland.
5. Find the clients' names who ordered products in the price range of 90 to 100.
6. Find every order that was shipped between 01/01/2003 to 01/31/2003. (Hint: use a cast to date).
7. Find out how many orders have status "Resolved"
8. Find the number of clients who have an order with status "Cancelled".

**Deliverables:** For each query, show the code used in MySQL Workbench and the first 10 tuples of the result. Screenshots are OK.