First SQL exercise

A database for non-graded lists to prepare for the subseqent SQL graded tests is an instance of the TPC-H benchmark used for testing the performance of decision support systems. These are synthetic (randomly generated) data but they have a rich structure (a database of orders and parts). The arrows in the diagram (see above in SKOS) illustrate foreign keys: they come out of the primary key and point to the attribute that refers to that key (they are directed in the opposite direction than we would expect). All attributes in the database are preceded by the first letter of the table name and an underscore (e.g. P_PARTKEY in PART or O_ORDERKEY in ORDERS).

Benchmark description

Database dump

For each of the following tasks, write the appropriate SQL commands (work together in the group).

Ex. 1 List the identifiers and names of customers from the `customer` table with phone numbers starting with `'34-83'`.

Ex. 2 List all tuples from the `customer` table that relate to customers from the United States (according to `nation`), with a `c_acctbal` greater than 9000, and that belong to the `'BUILDING'` segment. Sort the results by customer name.

Ex. 3 List the names of Asian suppliers who supply parts made of brushed brass (`p_type` ends with the words `'BRUSHED BRASS'`) in sets (`p_size`) of 50 pieces.

Ex. 4

- Add a tuple to the `lineitem` table with the value of `l_orderkey` referring to a non-existent order number in the `orders` table.
- Try to add a foreign key constraint to the `lineitem` table referring to the order number (`o_orderkey`) in the `orders` table, with `ON UPDATE` set to `CASCADE`. Did it succeed? Why?
- Change the previously added value to an existing one and add the specified constraint.
- Change the order number in `orders` and check if the references to that number in `lineitem` were cascaded.