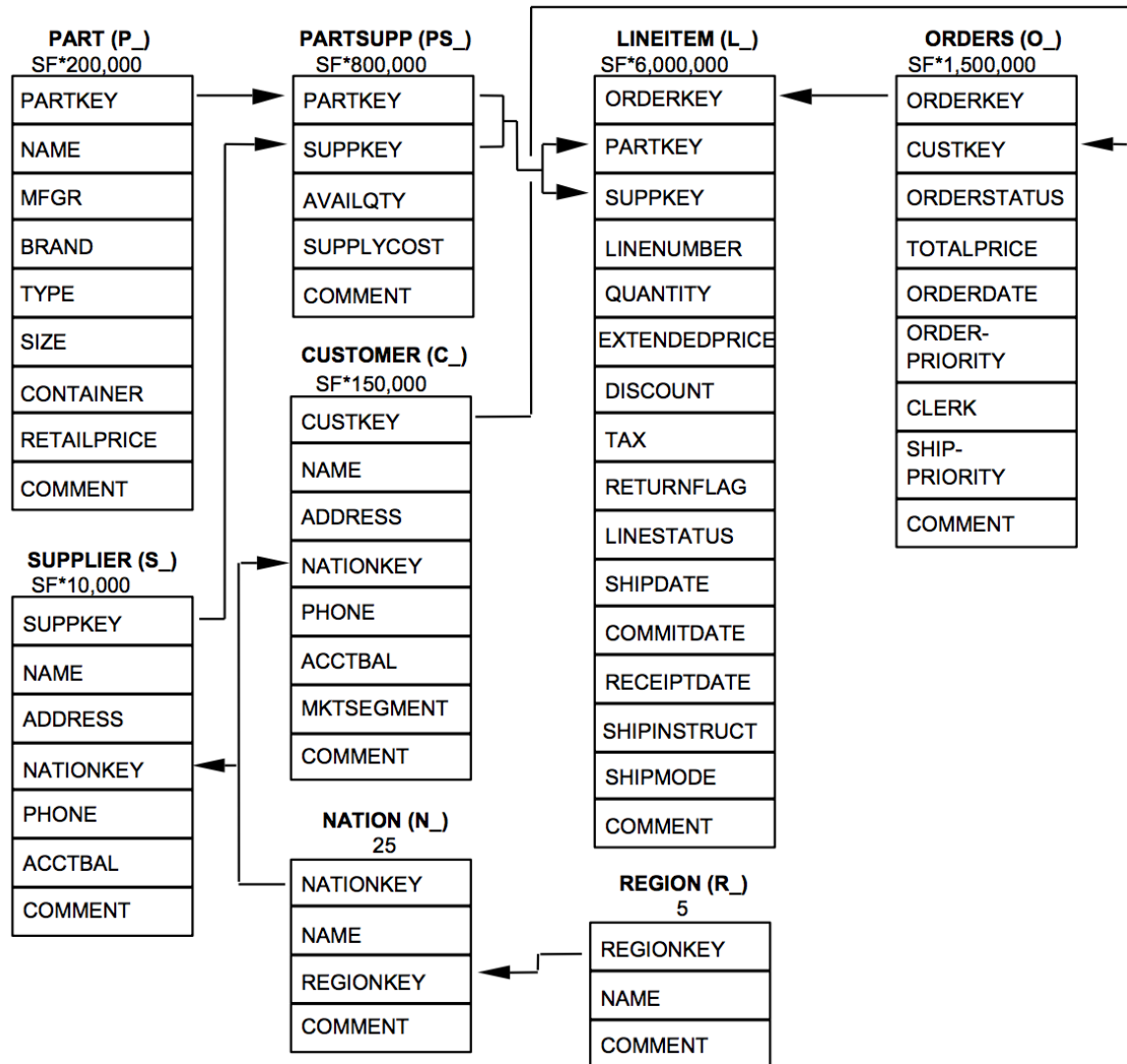


## Practice Quiz 04 Solution



### Legend:

- The parentheses following each table name contain the prefix of the column names for that table;
- The arrows point in the direction of the one-to-many relationships between tables;
- The number/formula below each table name represents the cardinality (number of rows) of the table. Some are factored by SF, the Scale Factor, to obtain the chosen database size. The cardinality for the LINEITEM table is approximate (see Clause 4.2.5).

Write the SQL Statements for the following questions.

1. List the **distinct order dates**.
2. Produce the **Cartesian product** of Customer and Supplier (be cautious!).
3. Show a single list containing all **nation names** and all **region names**.
4. List **part keys** that are **not supplied** by anyone.
5. Find **supplier keys** that appear **both** in Partsupp and in Lineitem.
6. Show **customer name** and **order key** for every order.
7. List orders where the **order total price exceeds the customer's account balance**.
8. List **distinct supplier names** from 'CANADA' who shipped anything **after 1995-01-01**.
9. List all customers from nation 'BRAZIL'.
10. Write an SQL query using **NATURAL JOIN** to display each customer's name along with their nation name.

Solution:

1. List the **distinct order dates**.

```
SELECT DISTINCT o_orderdate
FROM Orders;
```

2. Produce the **Cartesian product** of Customer and Supplier (be cautious!).

```
SELECT *
FROM Customer, Supplier;
```

3. Show a single list containing all **nation names** and all **region names**.

```
SELECT n_name AS name FROM Nation
UNION
SELECT r_name AS name FROM Region;
```

4. List **part keys** that are **not supplied** by anyone.

```
SELECT p_partkey
FROM Part
EXCEPT
SELECT ps_partkey
FROM Partsupp;
```

5. Find **supplier keys** that appear **both** in Partsupp and in Lineitem.

```
SELECT ps_suppkey FROM Partsupp
INTERSECT
SELECT l_suppkey FROM Lineitem;
```

6. Show **customer name** and **order key** for every order.

```
SELECT C.c_name, O.o_orderkey
FROM Customer C
JOIN Orders O ON C.c_custkey = O.o_custkey;
```

7. List orders where the **order total price exceeds the customer's account balance**.

```
SELECT O.o_orderkey, O.o_totalprice, C.c_name, C.c_acctbal
FROM Orders O
JOIN Customer C ON O.o_custkey = C.c_custkey
AND O.o_totalprice > C.c_acctbal;
```

8. List **distinct supplier names** from '**CANADA**' who shipped anything **after 1995-01-01**.

```
SELECT DISTINCT S.s_name
FROM Supplier S
JOIN Nation N ON S.s_nationkey = N.n_nationkey
JOIN Lineitem L ON S.s_suppkey = L.l_suppkey
WHERE N.n_name = 'CANADA'
AND L.l_shipdate > DATE '1995-01-01';
```

9. List all customers from nation '**BRAZIL**'.

```
SELECT C.*
FROM Customer C
JOIN Nation N ON C.c_nationkey = N.n_nationkey
WHERE N.n_name = 'BRAZIL';
```

10. Write an SQL query using **NATURAL JOIN** to display each customer's name along with their nation name.

```
SELECT c_name, n_name
FROM Customer NATURAL JOIN Nation;
```