



University of Trieste
Data Management for Big Data Course
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Data Warehouse case study

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1 Introduction

1.1 TPC-H benchmark database

1.1.1 Database statistics

Lorem ipsum...

2 Export/import revenue value

Lorem ipsum...

3 Late delivery

It is asked to retrieve the number of orders where at least one “lineitem” has been received later than the committed date. The aggregation should

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be performed with the Month \rightarrow Year roll-up, and the (Customer's) Nation \rightarrow Region roll-up.
Lorem ipsum...

4 Returned item loss

It is asked to retrieve the *revenue loss* for customers who might be having problems with the parts that are shipped to them, where a *revenue lost* is defined as $\text{SUM}(\text{l_extendedprice} * (1 - \text{l_discount}))$ for all qualifying “lineitems”.

4.1 Naïve implementation

```
1  WITH lineitem_orders AS (  
2      SELECT  
3          o_orderkey,  
4          l_partkey,  
5          l_suppkey,  
6          o_orderdate,  
7          o_custkey,  
8          l_extendedprice,  
9          l_discount,  
10         l_returnflag,  
11         l_commitdate,  
12         l_receiptdate  
13     FROM lineitem JOIN orders ON (l_orderkey = o_orderkey)  
14 ),  
15 query3 AS (  
16     SELECT  
17         EXTRACT (YEAR FROM o_orderdate) AS _year,  
18         EXTRACT (QUARTER FROM o_orderdate) AS _quarter,  
19         EXTRACT (MONTH FROM o_orderdate) AS _month,  
20         c_name,  
21         SUM(l_extendedprice * (1 - l_discount)) AS returnloss  
22     FROM  
23         lineitem_orders  
24         JOIN customer ON o_custkey = c_custkey  
25     WHERE  
26         l_returnflag = 'R'
```

```
27      -- AND c_name = 'Customer#000129976'
28      -- AND EXTRACT (QUARTER FROM o_orderdate) = 1
29  GROUP BY
30      _year,
31      _quarter,
32      _month,
33      c_custkey,
34      c_name
35  )
36  SELECT * FROM query3;
```