Data Warehousing

Politecnico di Torino

Food delivery

Conceptual design
Logical design

Primary keys are underlined.

DELIVERIES (RId, NId, DId, paymentMethod, transport, timeSlot, revenue, #deliveries, #kilometers, time)

Restaurant (RId, LId, orderType, name, categ1, categ2, ..., categ10)
Location (LId, city, province, region)
Date(DId, date, month, 2-months, trimester, 4-months, 6-months, year, workingDay)
Neighborhood(NId, neighborhood, LId)

Alternative solution

DELIVERIES (RId, LId, DId, paymentMethod, transport, timeSlot, revenue, #deliveries, #kilometers, time)

Restaurant (RId, LId, orderType, name, categ1, categ2, ..., categ10)
Location (LId, city, province, region, neighborhood)
Date(DId, date, month, 2-months, trimester, 4-months, 6-months, year, workingDay)

Queries

Query A

Consider the orders with type “Partner order”. Separately for mean of transport and trimester, analyze: the average delivery time, the average number of deliveries per time slot (the average number of deliveries made in an hour), assign a rank to the trimesters based on decreasing number of kilometers run on average in a minute, separately by mean of transport.

SELECT transport, trimester,
    SUM(#time)/SUM(#deliveries),
    SUM(#deliveries)/COUNT(DISTINCT timeSlot)
    RANK() OVER (ORDER BY SUM(#kilometers)/SUM(#time) DESC PARTITION BY transport)
FROM Time T, Deliveries D, Restaurant Rs
WHERE d.rid = rs.rid and d.did = t.did
    AND orderType=`Partner order`
GROUP BY transport, trimester
Query B

Consider the restaurants which have “pizza” among the associated categories. Carry out the analysis separately for payment method, delivery city and month.
Analyze: the cumulative monthly revenue from the beginning of each trimester, the average revenue per delivery, the percentage of revenue with respect to the total revenue considering all the payment methods.

```sql
SELECT paymentM, dCity, month, trimester
    SUM(SUM(revenue)) OVER(PARTITION BY trimester, paymentM, dCity ORDER BY month ROWS UNBOUNDED PRECEDING)
    SUM(revenue)/SUM(#deliveries)
    100*SUM(revenue)/SUM(SUM(revenue)) OVER(PARTITION BY month, dCity)
FROM Time T, Deliveries D, Restaurant R, Location L
WHERE d.did = t.did and d.rid = rs.rid and d.lid = l.lid
    and r.pizza=true
GROUP BY month, trimester, paymentMethod, deliveryCity
```