**TP1**

**Exercice 1.3**

**ORDER\_ID CUSTOMER\_ID EMPLOYEE\_ID ORDER\_DAT REQUIRED\_ SHIPPED\_D SHIP\_VIA**

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**FREIGHT SHIP\_NAME**

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**SHIP\_ADDRESS SHIP\_CITY**

**------------------------------------------------------------ ---------------**

**SHIP\_REGION SHIP\_POSTA SHIP\_COUNTRY**

**--------------- ---------- ---------------**

**Jardim das rosas n. 32 Lisboa**

**1675 Portugal**

**1 - numbers of customers per country**

select count(\*) as nbPerson, country

from customers

group by country

select ship\_country, ship\_city, count(order\_id) from orders

**2 - numbers of orders per country**

select ship\_country,ship\_city,count(order\_id)

from orders

group by grouping sets((ship\_country,ship\_city),(ship\_country),())

order by ship\_country, ship\_city;

or :

select ship\_Country, ship\_City, count(order\_id)

from orders

group by rollup (ship\_country, ship\_city)

order by ship\_country, ship\_city

**3 - number of orders and quantity of items shipped (according to order details) for each pair of Customercountry and Supplier country. Order result by customer country first, then supplier country**

select c.country as c\_country,s.country as s\_country, count(Distinct o.order\_ID) as NBORDER, sum(od.quantity) as quantity

from customers c, suppliers s,orders o, order\_details od,products p

where c.customer\_ID=o.customer\_ID

AND o.order\_ID=od.order\_ID

AND od.product\_ID=p.product\_ID

AND p.supplier\_ID=s.supplier\_ID

group by (c.country, s.country)

order by c.country, s.country ;

**4 - number of orders and quantity for all the cube levels when we only consider Customer and Supplier geography, at the top and country levels only. (i.e., same as before but add totals over each kind of country,and grand total).**

select c.country as c\_country,s.country as s\_country, count(Distinct o.order\_ID) as NBORDER, sum(od.quantity) as quantity

from customers c, suppliers s,orders o, order\_details od,products p

where c.customer\_ID=o.customer\_ID

AND o.order\_ID=od.order\_ID

AND od.product\_ID=p.product\_ID

AND p.supplier\_ID=s.supplier\_ID

group by cube(c.country,s.country);

**5 - total price (Quantity\* UnitPrice) of orders with french suppliers, for each country, region and city. The country must be displayed whenever the region is, and likewise the region whenever the city is. No grand total should be displayed. Propose 2 solutions; each based on a different function to extend GROUP BY**

select o.ship\_Country, o.ship\_Region, o.ship\_City, sum(od.quantity \* od.unit\_Price) as price

from Order\_Details od, Orders o, Suppliers s, Products p

where od.order\_ID = o.order\_ID

and s.country = 'France'

and od.Product\_ID = p.Product\_ID

and p.supplier\_ID=s.supplier\_ID

group by o.ship\_Country, rollup(o.ship\_Region, o.ship\_City);

select o.ship\_country, o.ship\_region, o.ship\_city, sum(od.quantity \* od.unit\_price) as price

from orders o, order\_details od, suppliers s, products p

where o.order\_ID = od.order\_ID

and od.product\_ID = p.product\_ID

and s.supplier\_ID = p.supplier\_ID

and s.country = 'France'

group by o.ship\_country, rollup(o.ship\_region,o.ship\_city);

or

……

group by rollup (o.shipCountry, o.shipRegion, o.shipCity)

having grouping(o.shipCountry) = 0

**6 - modify your query from question 2 so that the string ’whole country’ is displayed instead of NULL on every row that aggregates all cities of a single country**

grouping = 0, 有值

grouping = 1, 没有值

select o.ship\_Country, o.ship\_City,

CASE WHEN (GROUPING(o.ship\_city)=1

and grouping(o.ship\_Country)=0)

THEN 'whole country'

ELSE o.ship\_city END, count(\*) as total

from orders o

group by rollup(o.ship\_Country,o.ship\_city);

comment : “whole country”when the “grouping” is shipcountry and shiping city otherwise(grouping = co,ci,or())

commands :

mengzi.zhao@a-140395 ~ $ ssh mengzi.zhao@tp-ssh1.dep-informatique.u-psud.fr

mengzi.zhao@a-140395 ~ $ pwd

mengzi.zhao@a-140395 ~ $ sqlplus

user\_name=C##shortlogin\_a

password=shortlogin\_a

Download the document :

wget <https://www.lri.fr/~groz/documents/m2dk/Oracle_NW.sql>

With usr and pw:

wget --user m2dk2017 --password SY/ktjRZ https://www.lri.fr/~groz/documents/m2dk/base-northwind.sql

To import the document : @Oracle\_NW

Ex1.1

@Oracle\_NW

EX 1.2

事实数据表不应该包含描述性的信息，也不应该包含除数字度量字段及使事实与维度表中对应项的相关索引字段之外的任何数据。

fact table : OrderDetails

Territoires 不是 有description不行

recusive dimension : employee

outrigger :

A table that is joined to other dimension tables in a star schema.

An outrigger can be used to snowflake a dimension

outrigger：与星型模式中的其他维度表相连接的表。

product 是 以order为中心形成的星状图的outrigger

Ex 1.4

1 - number of orders per country and city on one column, together with total number of orders for the country, and maximal number of orders over the cities in this country on other columns.

select ship\_Country, ship\_City,

sum(count(\*)) over (Partition by ship\_country) as NB\_OR\_COUNTRY,

sum(count(\*)) over (Partition by ship\_city) as NB\_OR\_CITY,

max(count(\*)) over (Partition by ship\_country) as NBMAX\_OR\_CITY

from orders

group by ship\_country, ship\_city

order by ship\_country, ship\_city;

2. cities ranked within countries by number of orders, displaying number of orders and rank. There should not be any gaps in the ranks even in presence of ties.

select ship\_Country, ship\_City,

sum(count(\*)) over (Partition by ship\_city) as NB\_OR\_CITY,

rank() over (Partition by ship\_country Order by count(\*) desc) as NBMAX\_OR\_CITY

from orders

group by ship\_country, ship\_city

order by ship\_country, ship\_city;

3. add to query 2 the percentage of the total number of orders reached by each city within a country.

select ship\_Country, ship\_City,

sum(count(\*)) over (Partition by ship\_city) as NB\_OR\_CITY,

sum(count(\*)) over (Partition by ship\_country) as NB\_OR\_CNY,

(sum(count(\*)) over (Partition by ship\_city)/sum(count(\*)) over (Partition by ship\_country))

as percentage

from orders

group by ship\_country, ship\_city

order by ship\_country, ship\_city;

select ship\_Country, ship\_City,

sum(count(\*)) over (Partition by ship\_city) as NB\_OR\_CITY,

sum(count(\*)) over (Partition by ship\_country) as NB\_OR\_CNY,

RATIO\_TO\_REPORT(count(\*)) OVER (Partition by ship\_country) As percentage

from orders

group by ship\_country, ship\_city

order by ship\_country, ship\_city;

老师黑板上的

Desc\_RANK() over(Partition By ship\_country order by count(\*)) Rank RATIO.TO\_REPORT(count(\*)) over(Partition by ship.country) as PE

4.

WITH TEMP AS(

select order\_ID,sum(unit\_price \* quantity) as price,LAG(sum(unit\_price \* quantity)) OVER (ORDER BY order\_ID) as lastprice

from Order\_Details od

group by order\_ID

)

select order\_ID,lastprice

from TEMP

where CAST(price AS FLOAT)/lastprice <1.1;

5.

with temp As (Select EXTRACT(year from o.order\_Date ) as year,

p.product\_name as product\_name,

sum(od.quantity) as qty,

max(sum(od.quantity)) OVER (PARTITION BY EXTRACT(year from o.order\_Date)) as mxqt

FROM Orders o, Order\_Details od, products p

where o.order\_ID=od.order\_ID and

od.product\_ID=p.product\_ID

group by EXTRACT(year FROM o.order\_Date), product\_name)

select year, product\_name, qty

from temp

where qty = mxqt;

mxqt : max quantity ????

WITH TEMP(u) AS(

select 0 from DUAL

UNION ALL

select u+1 from TEMP

where u < 60

)

select u from TEMP

LAB EXAM

YOU NEED REPLACE THE SHIP\_COUNTRY INTO EMPLOEE\_ID

AND THE TABLE NAME NEED TO CHANGE :)

--Q1

select employee\_ID as empl\_id,ship\_city,count(\*) as nborder

from orders

group by cube(employee\_ID,ship\_city)

order by employee\_ID,ship\_city

--Q2

select employee\_ID,ship\_city,count(\*) as nborder,

case when grouping(employee\_ID)=1 and grouping(ship\_city)=1

then 'global'

when grouping(employee\_ID)=1

then 'city'

when grouping(ship\_city)=1

then 'employee'

else

'city-employee'

end summary\_level

from orders

group by cube(employee\_ID,ship\_city)

order by employee\_ID,ship\_city;

--bonus:

with tmp as(select employee\_ID,ship\_city,count(\*) as nborder,

case when grouping(employee\_ID)=1 and grouping(ship\_city)=1

then 'global'

when grouping(employee\_ID)=1

then 'city'

when grouping(ship\_city)=1

then 'country'

else

'country-city'

end summary\_level

from orders

group by cube(employee\_ID,ship\_city)

order by employee\_ID,ship\_city)

select employee\_ID,ship\_city,nborder,summary\_level

from tmp

where (nborder>4 and summary\_level='country-city')

or summary\_level='global' or summary\_level='city' or summary\_level='country'

--Q3

select o.ship\_country as country,o.order\_ID as order\_ID,

sum(od.unit\_price\*od.quantity\*(1-od.discount)) as price,

rank() over (partition by o.ship\_country order by sum(od.unit\_price\*od.quantity\*(1-od.discount)) desc) as rank

from orders o, order\_details od

where o.order\_ID=od.order\_ID

group by o.ship\_country,o.order\_ID, o.order\_date

order by o.ship\_country, o.order\_Date

4

WITH t( id , u) aS

(

SELECT 0,1 FROM DUAL

UNION ALL

SELECT id+1,u+(power(-1,(id+1))/((2\*id+3)\*power(3,(id+1)))) from t

where id<60

)

SELECT u FROM t

where id=20;

TP2

1 -

egrep '^aa' /usr/share/dict/words

egrep '^a{2}' /usr/share/dict/words

2 -

egrep 'hard' /usr/share/dict/words | wc -l

3 -

连续6个字母不为元音和标点的单词

egrep '[^[=a=][=e=][=i=][=o=][=u=][=y=][:punct:]]{6}' /usr/share/dict/words

4 -

egrep '([ [:alpha:]])\1\1' /usr/share/dict/words

egrep '([a-zA-Z])\1\1' /usr/share/dict/words

Ex 1.2

Which pattern do you think that regular expression "b[--a]b" will match? Check it!

b[--a]b :

以b开始，以b结束

[--a]

从-号的ascii码：45

到”-”

a的ascii码：98

之间的所有字符 包括减号和a

Ex 1.3

CREATE TABLE codesPostaux(

insee varchar2(6),

nom\_commune varchar2(50),

zip varchar2(50),

LIBELLE varchar2(50),

dum1 varchar2(50)

);

nano control.txt

LOAD DATA INFILE 'codes\_postaux.csv'

TRUNCATE

INTO TABLE codesPostaux

FIELDS TERMINATED BY ';'

(insee,nom\_commune,zip, LIBELLE,dum1)

nano bad.txt

nano log.txt

sqlldr userid=C##xxxxx/xxxxx control=control.txt log=log.txt bad=bad.txt \direct=y errors=0 skip=1

Name Null? Type

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INSEE VARCHAR2(6)

NOM\_COMMUNE VARCHAR2(50)

ZIP VARCHAR2(50)

LIBELLE VARCHAR2(50)

DUM1 VARCHAR2(50)

2 -

select INSEE, nom\_commune from codesPostaux

where nom\_commune like '%VIGNOBLE%';

second way:

select insee,nom\_commune

from CODEPOSTAUX

where REGEXP\_LIKE (nom\_commune,'VIGNOBLE');

3 -

select nom\_commune

from CODESPOSTAUX

where REGEXP\_LIKE (nom\_commune,' S(AIN)?T ')

or REGEXP\_LIKE (nom\_commune,'^S(AIN)?T');

4 -

Update CODEPOSTAUX

set nom\_commune=REGEXP\_REPLACE (nom\_commune,'2A','20');