

Screencast 5-8

Window functions – preceding and following rows

Database - ADWF

Task 1

Rewrite the following query to calculate revenue from current and 10 previous orders by shipping date for each city of delivery and year.

```
select
    city,
    date_part('y', shipdate) as ship_year,
    shipdate,
    sum(subtotal) over yr_city as total_YTD
from sales.salesorderheader as sh
    join person.address as a
        on addressid=shiptoaddressid
window yr_city
    as ( partition by city,date_part('y', shipdate) order by shipdate)
order by
    city,
    date_part('y', shipdate),
    shipdate;
```

Corrected query:

```
select
    city,
    date_part('y', shipdate) as ship_year,
    shipdate,
    sum(subtotal) over yr_city as total_YTD
from sales.salesorderheader as sh
    join person.address as a
        on addressid=shiptoaddressid
window yr_city
    as ( partition by city,date_part('y', shipdate) order by shipdate rows between 10
preceding and current row)
order by
    city,
    date_part('y', shipdate),
    shipdate;
```

Task 2

Find month-to-month difference in number of orders month of due date,

Use LAG(expression, relative_position) OVER() or LEAD(expression, relative_position) OVER() function. You also can add the third argument to set a value which will be returned if the result cannot be calculated (e.g., when position argument points outside current partition).

Step 1:

Initial record set:

```
select pc.name,
       date_part('y', sh.duedate) as yr,
       date_part('mon', sh.duedate) as mon,
       count(distinct sh.salesorderid) as number_of_orders
from sales.salesorderheader as sh
     join sales.salesorderdetail as sd using (salesorderid)
     join production.product p using (productid)
     join production.productssubcategory ps using (productsubcategoryid)
     join production.productcategory pc using (productcategoryid)
group by 1, 2, 3
```

Step 2:

Calculate month to month difference:

```
select
    yr,
    mon,
    name as category,
    number_of_orders - lag(number_of_orders, 1) over(partition by name order by yr,
mon) as difference
from
    (select pc.name,
        date_part('y', sh.duedate) as yr,
        date_part('mon', sh.duedate) as mon,
        count(distinct sh.salesorderid) as number_of_orders
    from sales.salesorderheader as sh
         join sales.salesorderdetail as sd using (salesorderid)
         join production.product p using (productid)
         join production.productssubcategory ps using (productsubcategoryid)
         join production.productcategory pc using (productcategoryid)
    group by 1, 2, 3) as data
order by 3, 1, 2
```