**Pivot Function**

# Oracle

**Syntax**

**Select \* from Sales\_Data;**

**Select \***

**from (**

**Base Query**

**)**

**pivot**

**(**

**aggregate function**

**for column value in (‘Jan-21’, ‘’, ‘’)**

**)**

**Note: The base query should at least have 3 columns.**

1. **First column should be the unique identifier.**
2. **Second column should provide the list of categories.**
3. **Third column value should be loaded into each of the category mentioned in column 2.**

**-- With Clause is used to transform the NULL values into 0 for calculation of sum**

**-- amount for the each customer for 12 months.**

**with pivot\_data as**

**(select \***

**from**

**(**

**-- Base Query -- Provides Raw Data**

**select customer\_id as customer,**

**to\_char(sales\_date, 'Mon-YY') as sales\_order,**

**cast(replace(amount, '$', '') as int) as amount**

**from sales\_data**

**)**

**pivot**

**(**

**-- Here, SQL will do sum(amount) using aggregate function --**

**-- SQL will create multiple columns based on the value that returned**

**-- from sales\_date and what we have mentioned here for sales\_date.**

**-- Also, each of the below values are correspond to the base query's**

**-- sales\_date column**

**-- The aggregation of the amount is happening based on each customer.**

**sum(amount)**

**for sales\_date in ('Jan-21' as Jan\_21, 'Feb-21' as Feb\_21, 'Mar-21' as Mar\_21,**

**'Apr-21' as Apr\_21, 'May-21' as May\_21, 'Jun-21' as Jun\_21, 'Jul-21' as Jul\_21,**

**'Aug-21' as Aug\_21, 'Sep-21' as Sep\_21, 'Oct-21' as Oct\_21, 'Nov-21' as Nov\_21,**

**'Dec-21' as Dec\_21)**

**)**

**-- Union is used to merge the specific customer rows with the below Total row**

**UNION**

**select \***

**from**

**(**

**-- Here instead of customer\_id, its replaced by 'Total' because we need**

**-- the total amount irrespective of the customers.**

**select 'Total' as customer,**

**to\_char(sales\_date, 'Mon-YY') as sales\_order,**

**cast(replace(amount, '$', '') as int) as amount**

**from sales\_data**

**)**

**pivot**

**(**

**-- Here, SQL will do sum(amount) using aggregate function --**

**-- SQL will create multiple columns based on the value that returned**

**-- from sales\_date and what we have mentioned here for sales\_date.**

**-- Also, each of the below values are correspond to the base query's**

**-- sales\_date column**

**-- The aggregation of the amount is happening based on each customer.**

**sum(amount)**

**for sales\_date in ('Jan-21' as Jan\_21, 'Feb-21' as Feb\_21, 'Mar-21' as Mar\_21,**

**'Apr-21' as Apr\_21, 'May-21' as May\_21, 'Jun-21' as Jun\_21, 'Jul-21' as Jul\_21,**

**'Aug-21' as Aug\_21, 'Sep-21' as Sep\_21, 'Oct-21' as Oct\_21, 'Nov-21' as Nov\_21,**

**'Dec-21' as Dec\_21)**

**),**

**final\_data as**

**(select customer\_id,**

**-- Actual code which transforms Null into 0**

**NVL(Jan\_21, 0) as Jan\_21,**

**NVL(Feb\_21, 0) as Feb\_21,**

**NVL(Mar\_21, 0) as Mar\_21,**

**NVL(Apr\_21, 0) as Apr\_21,**

**NVL(May\_21, 0) as May\_21,**

**NVL(Jun\_21, 0) as Jun\_21,**

**NVL(Jul\_21, 0) as Jul\_21,**

**NVL(Aug\_21, 0) as Aug\_21,**

**NVL(Sep\_21, 0) as Sep\_21,**

**NVL(Oct\_21, 0) as Oct\_21,**

**NVL(Nov\_21, 0) as Nov\_21,**

**NVL(Dec\_21, 0) as Dec\_21**

**from pivot\_data)**

**select customer,**

**case when Jan\_21 < 0 then '(' || Jan\_21 \* -1 ||')$' else Jan\_21 || '$' end as "Jan\_21",**

**case when Feb\_21 < 0 then '(' || Feb\_21 \* -1 ||')$' else Feb\_21 || '$' end as "Feb\_21",**

**case when Mar\_21 < 0 then '(' || Mar\_21 \* -1 ||')$' else Mar\_21 || '$' end as "Mar\_21",**

**case when Apr\_21 < 0 then '(' || Apr\_21 \* -1 ||')$' else Apr\_21 || '$' end as "Apr\_21",**

**case when May\_21 < 0 then '(' || May\_21 \* -1 ||')$' else May\_21 || '$' end as "May\_21",**

**case when Jun\_21 < 0 then '(' || Jun\_21 \* -1 ||')$' else Jun\_21 || '$' end as "Jun\_21",**

**case when Jul\_21 < 0 then '(' || Jul\_21 \* -1 ||')$' else Jul\_21 || '$' end as "Jul\_21",**

**case when Aug\_21 < 0 then '(' || Aug\_21 \* -1 ||')$' else Aug\_21 || '$' end as "Aug\_21",**

**case when Sep\_21 < 0 then '(' || Sep\_21 \* -1 ||')$' else Sep\_21 || '$' end as "Sep\_21",**

**case when Oct\_21 < 0 then '(' || Oct\_21 \* -1 ||')$' else Oct\_21 || '$' end as "Oct\_21",**

**case when Nov\_21 < 0 then '(' || Nov\_21 \* -1 ||')$' else Nov\_21 || '$' end as "Nov\_21",**

**case when Dec\_21 < 0 then '(' || Dec\_21 \* -1 ||')$' else Dec\_21 || '$' end as "Dec\_21",**

**case when customer = 'Total' then ''**

**else case when (Jan\_21+Feb\_21+Mar\_21+Apr\_21+May\_21+Jun\_21+Jul\_21+Aug\_21+Sep\_21+Oct\_21+Nov\_21+Dec\_21) < 0**

**then '(' || (Jan\_21+Feb\_21+Mar\_21+Apr\_21+May\_21+Jun\_21+Jul\_21+Aug\_21+Sep\_21+Oct\_21+Nov\_21+Dec\_21) \* -1 || ')$'**

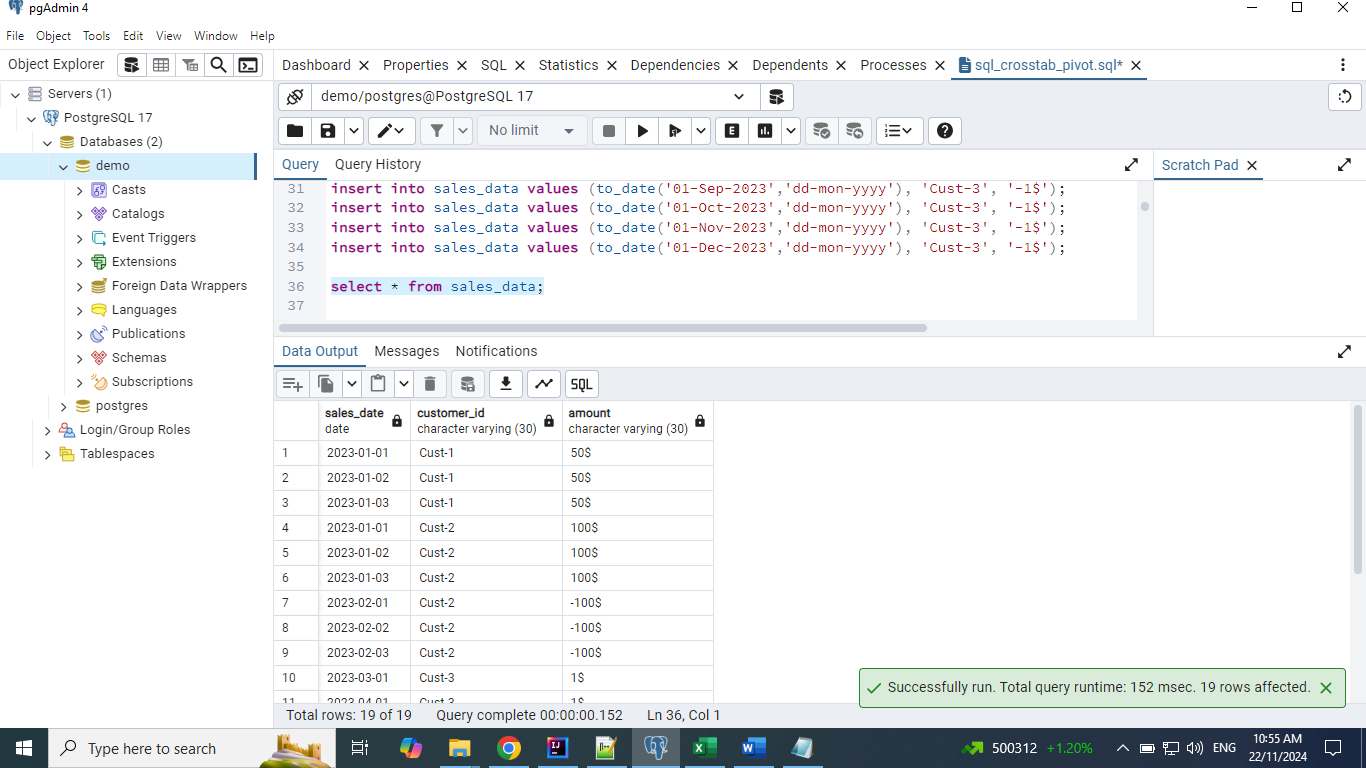
**else (Jan\_21+Feb\_21+Mar\_21+Apr\_21+May\_21+Jun\_21+Jul\_21+Aug\_21+Sep\_21+Oct\_21+Nov\_21+Dec\_21)||'$'**

**end**

**end as Total**

**from final\_data;**

# Postgres SQL



## Notes

**1. In PostgresSQL, we don't have pivot function.**

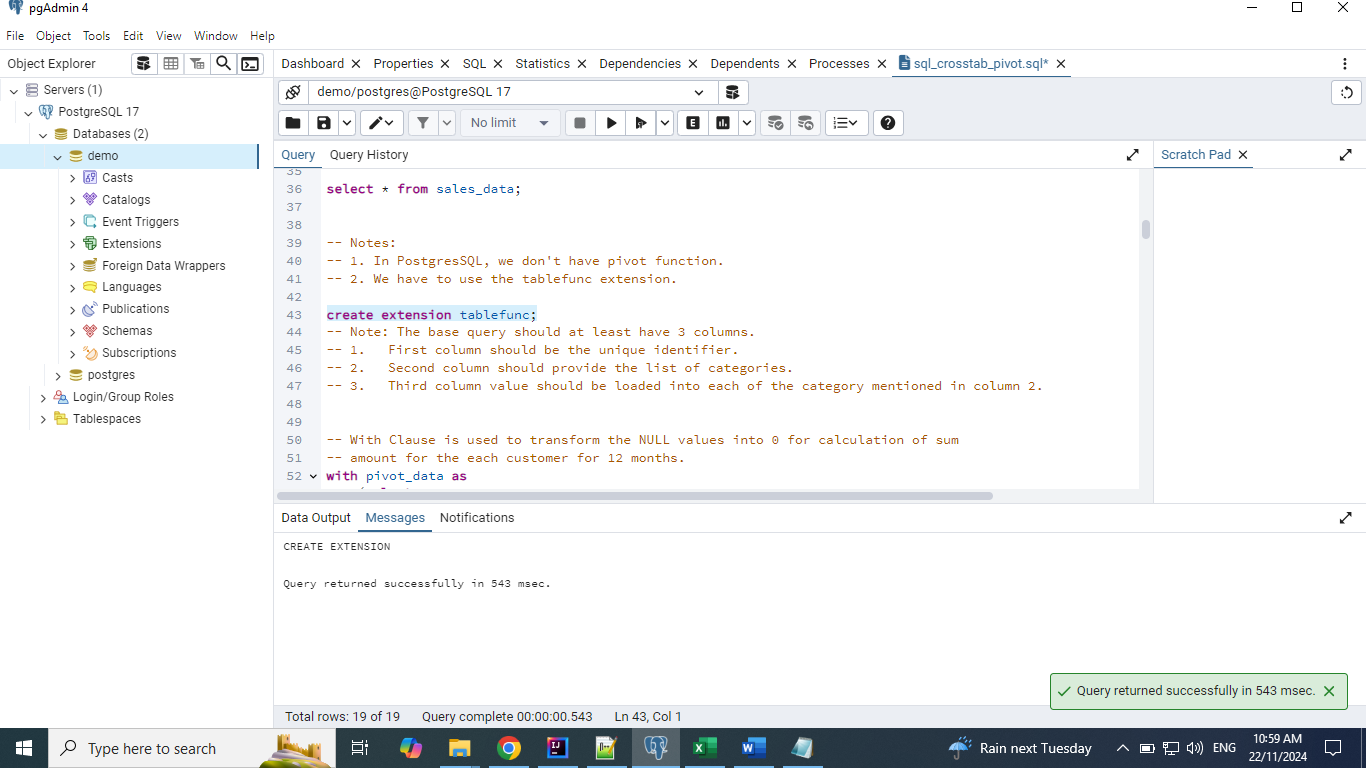
**2. We have to use the tablefunc extension.**

**3. Crosstab function takes 2 arguments.**

**1. First argument is base query**

**2. Second argument is list of values**

**create extension tablefunc;**



**with pivot\_data as**

**(select \***

**from crosstab('select customer\_id as customer,**

**to\_char(sales\_date, ''Mon-YY'') as sales\_order,**

**sum(cast(replace(amount, ''$'', '''') as int)) as amount**

**from sales\_data**

**group by customer\_id, to\_char(sales\_date, ''Mon-YY'')**

**order by 1',**

**'values (''Jan-23''),(''Feb-23''),(''Mar-23''),(''Apr-23''),(''May-23''),(''Jun-23''),**

**(''Jul-23''),(''Aug-23''),(''Sep-23''),(''Oct-23''),(''Nov-23''),(''Dec-23'')')**

**as (customer varchar, Jan\_23 bigint, Feb\_23 bigint, Mar\_23 bigint, Apr\_23 bigint, May\_23 bigint, Jun\_23 bigint,**

**Jul\_23 bigint, Aug\_23 bigint, Sep\_23 bigint, Oct\_23 bigint, Nov\_23 bigint, Dec\_23 bigint)**

**union**

**select \***

**from crosstab('select ''Total'' as customer,**

**to\_char(sales\_date, ''Mon-YY'') as sales\_order,**

**sum(cast(replace(amount, ''$'', '''') as int)) as amount**

**from sales\_data**

**group by to\_char(sales\_date, ''Mon-YY'')**

**order by 1',**

**'values (''Jan-23''),(''Feb-23''),(''Mar-23''),(''Apr-23''),(''May-23''),(''Jun-23''),**

**(''Jul-23''),(''Aug-23''),(''Sep-23''),(''Oct-23''),(''Nov-23''),(''Dec-23'')')**

**as (customer varchar, Jan\_23 bigint, Feb\_23 bigint, Mar\_23 bigint, Apr\_23 bigint, May\_23 bigint, Jun\_23 bigint,**

**Jul\_23 bigint, Aug\_23 bigint, Sep\_23 bigint, Oct\_23 bigint, Nov\_23 bigint, Dec\_23 bigint)**

**order by 1),**

**final\_data as**

**(select customer,**

**-- Actual code which transforms Null into 0**

**coalesce(Jan\_23, 0) as Jan\_23,**

**coalesce(Feb\_23, 0) as Feb\_23,**

**coalesce(Mar\_23, 0) as Mar\_23,**

**coalesce(Apr\_23, 0) as Apr\_23,**

**coalesce(May\_23, 0) as May\_23,**

**coalesce(Jun\_23, 0) as Jun\_23,**

**coalesce(Jul\_23, 0) as Jul\_23,**

**coalesce(Aug\_23, 0) as Aug\_23,**

**coalesce(Sep\_23, 0) as Sep\_23,**

**coalesce(Oct\_23, 0) as Oct\_23,**

**coalesce(Nov\_23, 0) as Nov\_23,**

**coalesce(Dec\_23, 0) as Dec\_23**

**from pivot\_data)**

**select customer,**

**case when Jan\_23 < 0 then '(' || Jan\_23 \* -1 ||')$' else Jan\_23 || '$' end as "Jan\_23",**

**case when Feb\_23 < 0 then '(' || Feb\_23 \* -1 ||')$' else Feb\_23 || '$' end as "Feb\_23",**

**case when Mar\_23 < 0 then '(' || Mar\_23 \* -1 ||')$' else Mar\_23 || '$' end as "Mar\_23",**

**case when Apr\_23 < 0 then '(' || Apr\_23 \* -1 ||')$' else Apr\_23 || '$' end as "Apr\_23",**

**case when May\_23 < 0 then '(' || May\_23 \* -1 ||')$' else May\_23 || '$' end as "May\_23",**

**case when Jun\_23 < 0 then '(' || Jun\_23 \* -1 ||')$' else Jun\_23 || '$' end as "Jun\_23",**

**case when Jul\_23 < 0 then '(' || Jul\_23 \* -1 ||')$' else Jul\_23 || '$' end as "Jul\_23",**

**case when Aug\_23 < 0 then '(' || Aug\_23 \* -1 ||')$' else Aug\_23 || '$' end as "Aug\_23",**

**case when Sep\_23 < 0 then '(' || Sep\_23 \* -1 ||')$' else Sep\_23 || '$' end as "Sep\_23",**

**case when Oct\_23 < 0 then '(' || Oct\_23 \* -1 ||')$' else Oct\_23 || '$' end as "Oct\_23",**

**case when Nov\_23 < 0 then '(' || Nov\_23 \* -1 ||')$' else Nov\_23 || '$' end as "Nov\_23",**

**case when Dec\_23 < 0 then '(' || Dec\_23 \* -1 ||')$' else Dec\_23 || '$' end as "Dec\_23",**

**case when customer = 'Total' then ''**

**else case when (Jan\_23+Feb\_23+Mar\_23+Apr\_23+May\_23+Jun\_23+Jul\_23+Aug\_23+Sep\_23+Oct\_23+Nov\_23+Dec\_23) < 0**

**then '(' || (Jan\_23+Feb\_23+Mar\_23+Apr\_23+May\_23+Jun\_23+Jul\_23+Aug\_23+Sep\_23+Oct\_23+Nov\_23+Dec\_23) \* -1 || ')$'**

**else (Jan\_23+Feb\_23+Mar\_23+Apr\_23+May\_23+Jun\_23+Jul\_23+Aug\_23+Sep\_23+Oct\_23+Nov\_23+Dec\_23)||'$'**

**end**

**end as Total**

**from final\_data;**

