Table of Contents

These queries will use set operations to look at which products were ordered in different months. To keep the output down to something we can understand more easily I will limit this to Houseware products(catg_id = 'HW') and to items purchased in the last three months of 2015.

1. Demos for Housewares

Demo 01:   Query to show the relevant orders

```
select OH.order_id, PR.prod_id, catg_id, prod_name
, cast( order_date as date) as order_date
from OrderEntry.orderHeaders  OH
join OrderEntry.orderDetails  OD on OH.order_id = OD.order_id
join Product.products PR on OD.prod_id = PR.prod_id
where catg_id = 'HW'
and month ( order_date) in (10,11,12) and year (order_date) = 2015
order by order_date;
+----------+---------+---------+----------------+------------+
| order_id | prod_id | catg_id | prod_name      | order_date |
+----------+---------+---------+----------------+------------+
|      107 |    1110 | HW      | Pancake griddle | 2015-10-02 |
|      108 |    1080 | HW      | Cornpopper     | 2015-10-02 |
|      110 |    1090 | HW      | Gas grill      | 2015-10-12 |
|      112 |    1110 | HW      | Pancake griddle | 2015-11-08 |
|      113 |    1080 | HW      | Cornpopper     | 2015-11-08 |
|      115 |    1100 | HW      | Blender        | 2015-11-08 |
|      115 |    1000 | HW      | Hand Mixer     | 2015-11-08 |
|      115 |    1080 | HW      | Cornpopper     | 2015-11-08 |
|      408 |    1071 | HW      | Iron           | 2015-11-20 |
|      119 |    1070 | HW      | Iron           | 2015-11-28 |
|      127 |    1080 | HW      | Cornpopper     | 2015-12-15 |
|      127 |    1100 | HW      | Blender        | 2015-12-15 |
|      127 |    1110 | HW      | Pancake griddle | 2015-12-15 |
|      126 |    1100 | HW      | Blender        | 2015-12-15 |
|      130 |    1090 | HW      | Gas grill      | 2015-12-30 |
+----------+---------+---------+----------------+------------+
15 rows in set (0.00 sec)
```

I could use this query as the basis for the rest of the demos but it is rather long; I could put it in a subquery in the From clause and make the rest of the query simpler to read. In this case since I want to use it several time, I am going to create it as a view. I will also add a calculated column for the month since I will use that in the demos.

Demo 02:   The view definition.

```
Create view orderData as

select OH.order_id, PR.prod_id, catg_id, prod_name
, cast( order_date as date) as order_date
, month ( order_date) as order_month
from OrderEntry.orderHeaders  OH
join OrderEntry.orderDetails  OD on OH.order_id = OD.order_id
join Product.products PR on OD.prod_id = PR.prod_id
where catg_id = 'HW'
and month ( order_date) in (10,11,12) and year (order_date) = 2015;
```

Demo 03:   Union for items purchased in either November or December

```
select prod_id, catg_id, prod_name
from orderData
where order_month = 11
UNION
select  prod_id, catg_id, prod_name
from orderData
where order_month = 12;
+--------+--------+----------------+
| prod_id | catg_id | prod_name     |
+--------+--------+----------------+
|    1000 | HW      | Hand Mixer      |
|    1070 | HW      | Iron            |
|    1071 | HW      | Iron            |
|    1080 | HW      | Cornpopper      |
|    1100 | HW      | Blender         |
|    1110 | HW      | Pancake griddle |
|    1090 | HW      | Gas grill       |
+--------+--------+----------------+
```

Demo 04:   We could do this with two subqueries. Note this is testing the prod_id in the subqueries.

```
select Distinct prod_id, catg_id, prod_name
from orderData
where prod_id in (
    select prod_id
    from orderData
    where order_month = 11
    )
OR  prod_id in (
    select prod_id
    from orderData
    where order_month = 12
    );
+---------+---------+----------------+
| prod_id | catg_id | prod_name      |
+---------+---------+----------------+
|    1000 | HW      | Hand Mixer      |
|    1070 | HW      | Iron            |
|    1071 | HW      | Iron            |
|    1080 | HW      | Cornpopper      |
|    1090 | HW      | Gas grill       |
|    1100 | HW      | Blender         |
|    1110 | HW      | Pancake griddle |
+---------+---------+----------------+
```

Demo 05:   Union for items purchased in both November and December

```
select Distinct prod_id, catg_id, prod_name
from orderData
where prod_id in (
    select prod_id
    from orderData
    where order_month = 11
    )
AND  prod_id in (
    select prod_id
    from orderData
    where order_month = 12
    )
;
```

```
+---------+---------+-----------------+
| prod_id | catg_id | prod_name       |
+---------+---------+-----------------+
|    1080 | HW      | Cornpopper      |
|    1100 | HW      | Blender         |
|    1110 | HW      | Pancake griddle |
+---------+---------+-----------------+
```

Demo 06:   Items purchased in each of the three months

```
select Distinct prod_id, catg_id, prod_name
from orderData
where prod_id in (
    select prod_id
    from orderData
    where order_month = 10
    )
AND  prod_id in (
    select prod_id
    from orderData
    where order_month = 11
    )
AND  prod_id in (
    select prod_id
    from orderData
    where order_month = 12
    );
+---------+---------+-----------------+
| prod_id | catg_id | prod_name       |
+---------+---------+-----------------+
|    1080 | HW      | Cornpopper      |
|    1110 | HW      | Pancake griddle |
+---------+---------+-----------------+
```

Demo 07:   Items ordered in Nov but not in Oct and not in Dec

```
select Distinct prod_id, catg_id, prod_name
from orderData
where prod_id in (
    select prod_id
    from orderData
    where order_month = 11
    )
AND  prod_id not in(
    select prod_id
    from orderData
    where order_month = 10
    )
AND  prod_id not in (
    select prod_id
    from orderData
    where order_month = 12
    );
+---------+---------+------------+
| prod_id | catg_id | prod_name  |
+---------+---------+------------+
|    1000 | HW      | Hand Mixer |
|    1070 | HW      | Iron       |
|    1071 | HW      | Iron       |
+---------+---------+------------+
```

Demo 08:   Items ordered in Nov but (not in both Oct and Dec)

```
select Distinct prod_id, catg_id, prod_name
from orderData
where prod_id in (
    select prod_id
    from orderData
    where order_month = 11
    )
and prod_id not in(
    select prod_id
    from orderData
    where prod_id in(
        select prod_id
        from orderData
        where order_month = 12
        )
    and prod_id in (
    select prod_id
    from orderData
    where prod_id in(
        select prod_id
        from orderData
        where order_month = 10
        )
    )
    );
+---------+---------+------------+
| prod_id | catg_id | prod_name  |
+---------+---------+------------+
|    1000 | HW      | Hand Mixer |
|    1070 | HW      | Iron       |
|    1071 | HW      | Iron       |
|    1100 | HW      | Blender    |
+---------+---------+------------+
```

Demo 09: