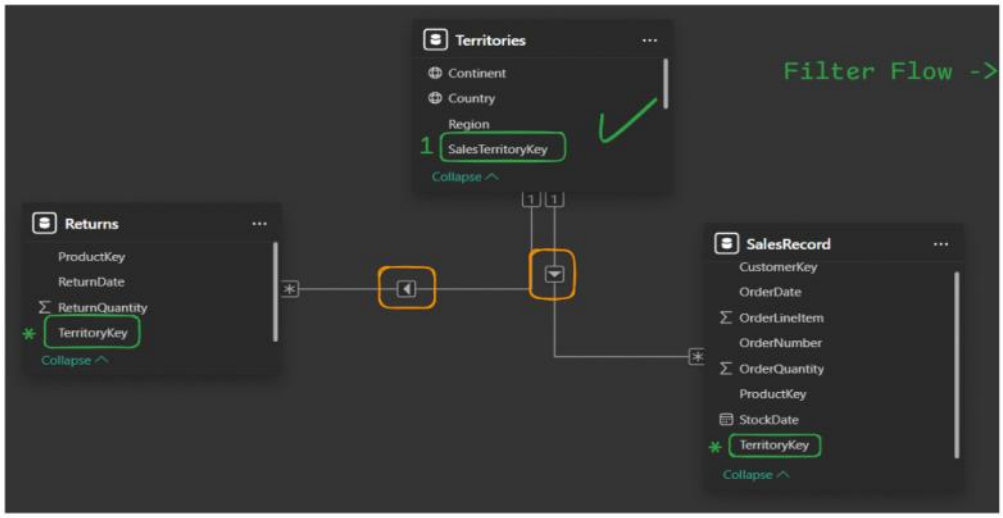
Power BI - End To End Project - 2

Bi-Directional Filter

Single >> Both

Hiding Foreign Key



Filter Flow -> Downstream

SalesTerritoryKey	Sum of OrderQuantity	Sum of ReturnQuantity
1	12513	270
2	40	
3	30	
4	17191	362
5	49	1
6	10894	238
7	7862	186
8	7950	163
9	17951	404
10	9694	204
Total	**84174**	**1828**

Dimension Table > SalesTerritoryKey [P.K]

SalesTerritoryKey	Region	Country	Continent
1	Northwest	United States	North America
2	Northeast	United States	North America
3	Central	United States	North America
4	Southwest	United States	North America
5	Southeast	United States	North America
6	Canada	Canada	North America
7	France	France	Europe
8	Germany	Germany	Europe
9	Australia	Australia	Pacific
10	United Kingdom	United Kingdom	Europe

Sales Record

TerritoryKey	Sum of OrderQuantity	Sum of ReturnQuantity
1	12513	1828
2	40	1828
3	30	1828
4	17191	1828
5	49	1828
6	10894	1828
7	7862	1828
8	7950	1828
9	17951	1828
10	9694	1828
Total	**84174**	**1828**

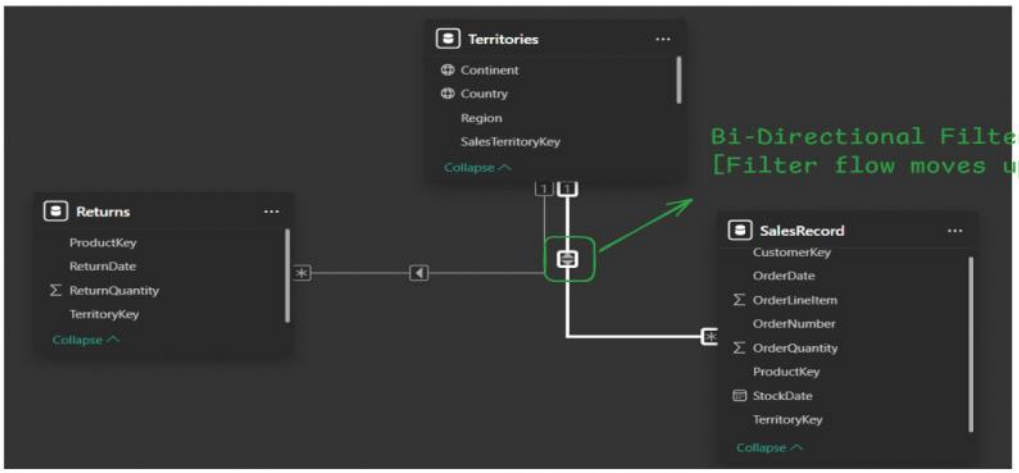
No-Relationship Exist Directly

Return Table

TerritoryKey	Sum of OrderQuantity	Sum of ReturnQuantity
1	84174	270
4	84174	362
5	84174	1
6	84174	238
7	84174	186
8	84174	163
9	84174	404
10	84174	204
Total	**84174**	**1828**

Loss of Information

2-3[territory are missing bcoz of no returns]

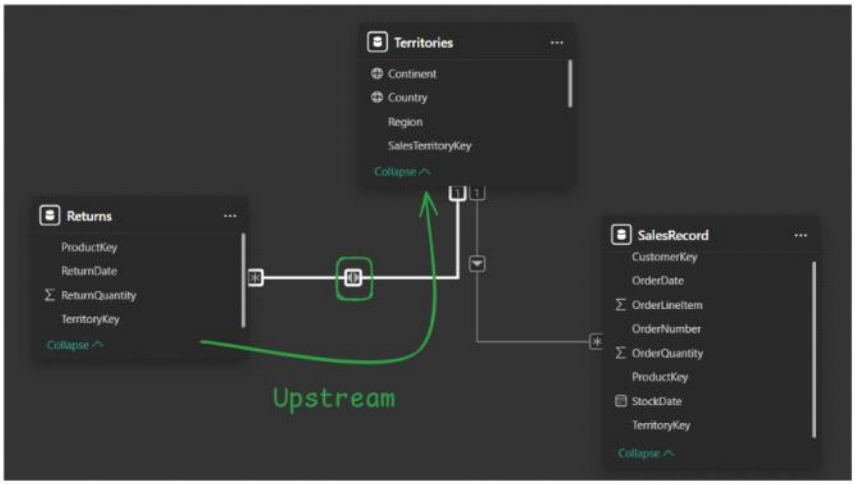


Bi-Directional Filter
[Filter flow moves upstream]

TerritoryKey	Sum of OrderQuantity	Sum of ReturnQuantity
1	12513	270
2	40	
3	30	
4	17191	362
5	49	1
6	10894	238
7	7862	186
8	7950	163
9	17951	404
10	9694	204
Total	**84174**	**1828**

SalesRecord

There are ambiguous paths between 'Territories' and 'Calendar': 'Territories'->'Returns'->'Calendar' and 'Territories'->'SalesRecord'->'Calendar'



TerritoryKey	Sum of OrderQuantity	Sum of ReturnQuantity
1	12513	270
4	17191	362
5	49	1
6	10894	238
7	7862	186
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Loss of Information

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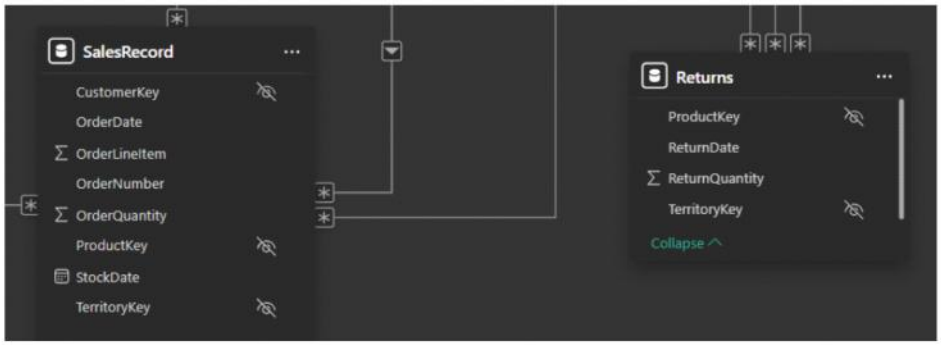
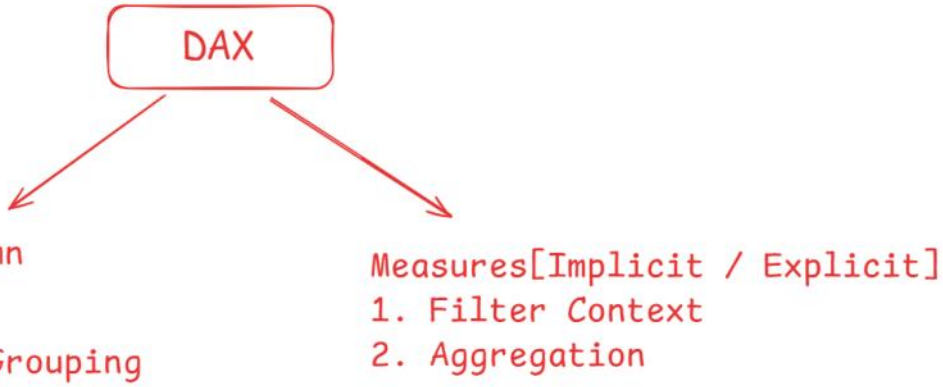
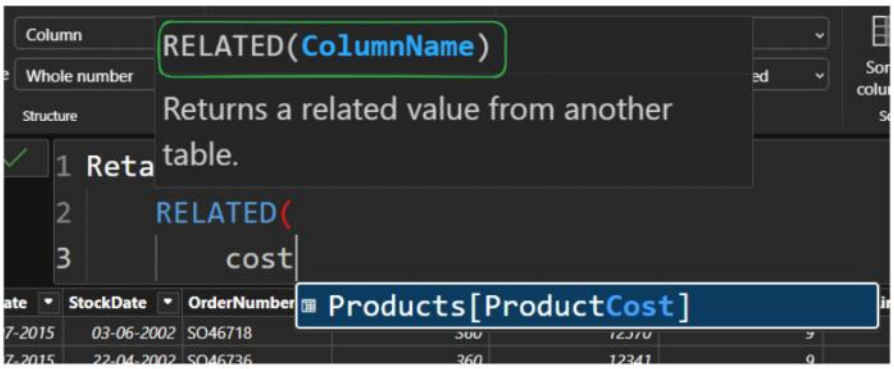


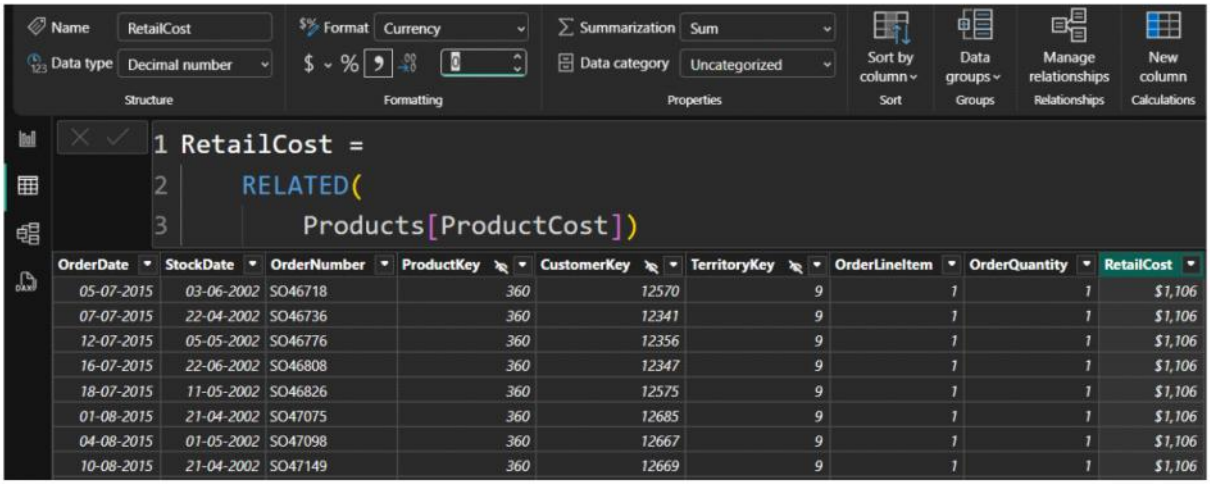
DAX [Data Analysis Expression]

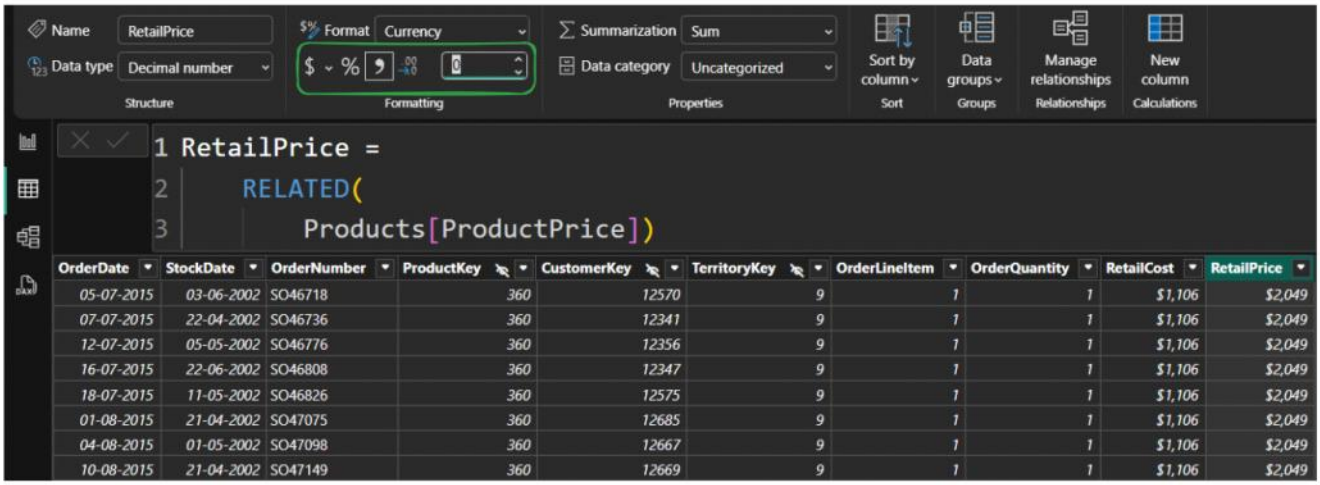


Related -> Lookup Function

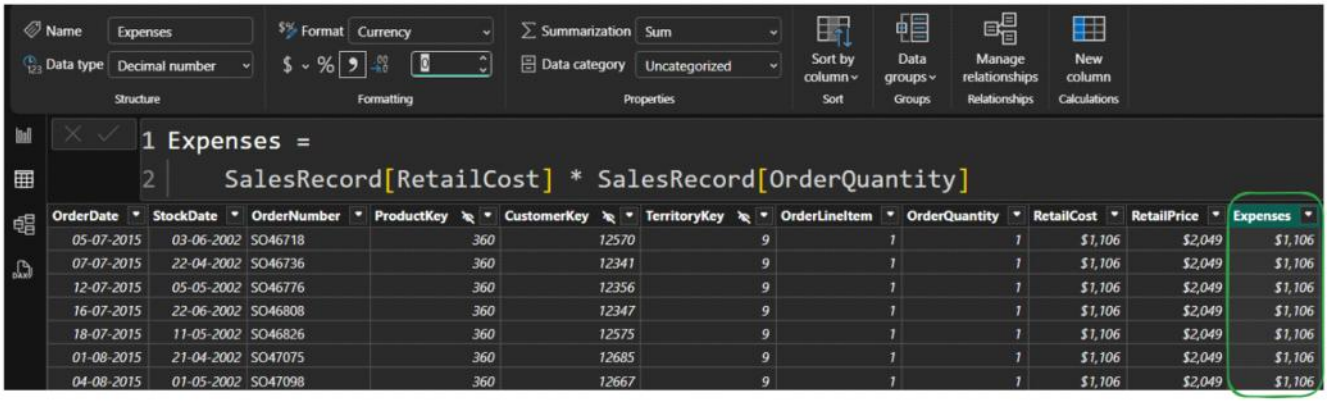
-> Bringing the column from another table
if the relationship exist.



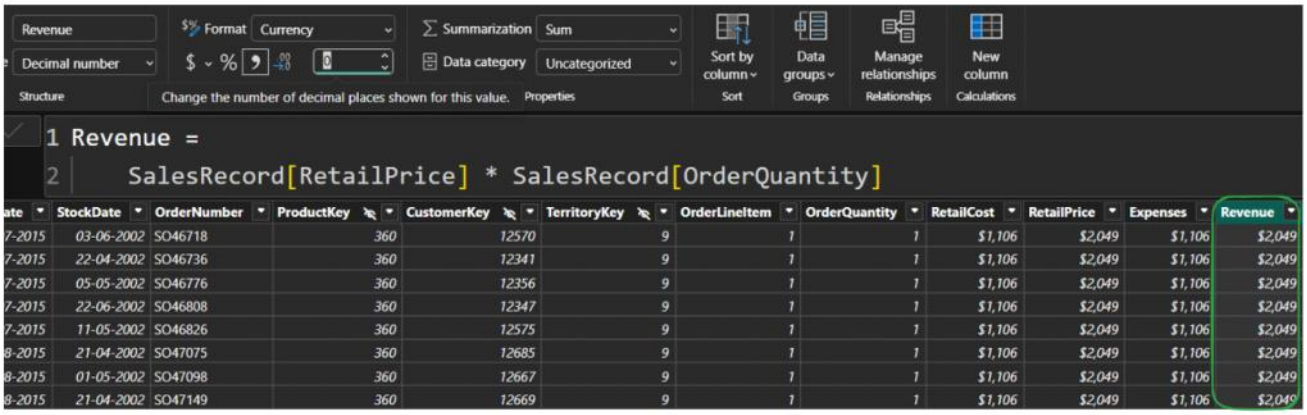




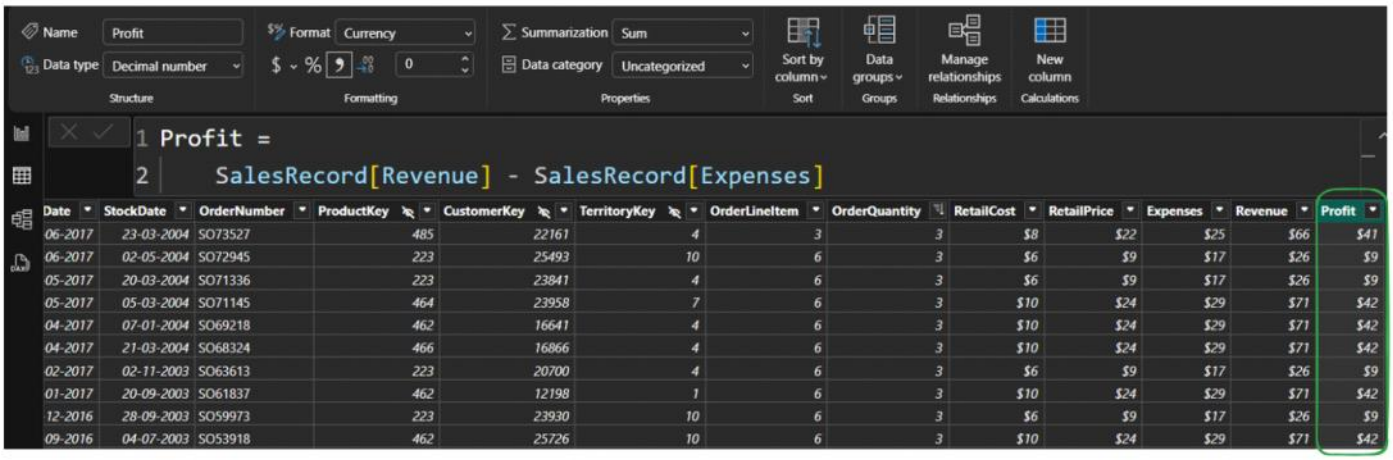
OrderDate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity	RetailCost	RetailPrice
05-07-2015	03-06-2002	SO46718	360	12570	9	1	1	$1,106	$2,049
07-07-2015	22-04-2002	SO46736	360	12341	9	1	1	$1,106	$2,049
12-07-2015	05-05-2002	SO46776	360	12356	9	1	1	$1,106	$2,049
16-07-2015	22-06-2002	SO46808	360	12347	9	1	1	$1,106	$2,049
18-07-2015	11-05-2002	SO46826	360	12575	9	1	1	$1,106	$2,049
01-08-2015	21-04-2002	SO47075	360	12685	9	1	1	$1,106	$2,049
04-08-2015	01-05-2002	SO47098	360	12667	9	1	1	$1,106	$2,049
10-08-2015	21-04-2002	SO47149	360	12669	9	1	1	$1,106	$2,049



OrderDate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity	RetailCost	RetailPrice	Expenses
05-07-2015	03-06-2002	SO46718	360	12570	9	1	1	$1,106	$2,049	$1,106
07-07-2015	22-04-2002	SO46736	360	12341	9	1	1	$1,106	$2,049	$1,106
12-07-2015	05-05-2002	SO46776	360	12356	9	1	1	$1,106	$2,049	$1,106
16-07-2015	22-06-2002	SO46808	360	12347	9	1	1	$1,106	$2,049	$1,106
18-07-2015	11-05-2002	SO46826	360	12575	9	1	1	$1,106	$2,049	$1,106
01-08-2015	21-04-2002	SO47075	360	12685	9	1	1	$1,106	$2,049	$1,106
04-08-2015	01-05-2002	SO47098	360	12667	9	1	1	$1,106	$2,049	$1,106



ate	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity	RetailCost	RetailPrice	Expenses	Revenue
7-2015	03-06-2002	SO46718	360	12570	9	1	1	$1,106	$2,049	$1,106	$2,049
7-2015	22-04-2002	SO46736	360	12341	9	1	1	$1,106	$2,049	$1,106	$2,049
7-2015	05-05-2002	SO46776	360	12356	9	1	1	$1,106	$2,049	$1,106	$2,049
7-2015	22-06-2002	SO46808	360	12347	9	1	1	$1,106	$2,049	$1,106	$2,049
7-2015	11-05-2002	SO46826	360	12575	9	1	1	$1,106	$2,049	$1,106	$2,049
8-2015	21-04-2002	SO47075	360	12685	9	1	1	$1,106	$2,049	$1,106	$2,049
8-2015	01-05-2002	SO47098	360	12667	9	1	1	$1,106	$2,049	$1,106	$2,049
8-2015	21-04-2002	SO47149	360	12669	9	1	1	$1,106	$2,049	$1,106	$2,049



Date	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity	RetailCost	RetailPrice	Expenses	Revenue	Profit
06-2017	23-03-2004	SO73527	485	22161	4	3	3	$8	$22	$25	$66	$41
06-2017	02-05-2004	SO72945	223	25493	10	6	3	$6	$9	$17	$26	$9
05-2017	20-03-2004	SO71336	223	23841	4	6	3	$6	$9	$17	$26	$9
05-2017	05-03-2004	SO71145	464	23958	7	6	3	$10	$24	$29	$71	$42
04-2017	07-01-2004	SO69218	462	16641	4	6	3	$10	$24	$29	$71	$42
04-2017	21-03-2004	SO68324	466	16866	4	6	3	$10	$24	$29	$71	$42
02-2017	02-11-2003	SO63613	223	20700	4	6	3	$6	$9	$17	$26	$9
01-2017	20-09-2003	SO61837	462	12198	1	6	3	$10	$24	$29	$71	$42
12-2016	28-09-2003	SO59973	223	23930	10	6	3	$6	$9	$17	$26	$9
09-2016	04-07-2003	SO53918	462	25726	10	6	3	$10	$24	$29	$71	$42

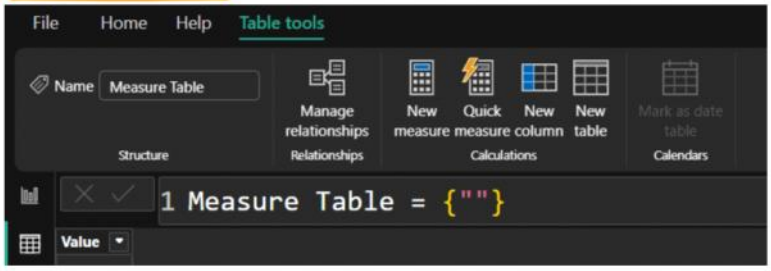
RetailCost	RetailPrice	Expenses	Revenue	Profit
$8	$22	$25	$66	$41
$6	$9	$17	$26	$9
$6	$9	$17	$26	$9
$10	$24	$29	$71	$42
$10	$24	$29	$71	$42
$10	$24	$29	$71	$42
$6	$9	$17	$26	$9
$10	$24	$29	$71	$42
$6	$9	$17	$26	$9
$10	$24	$29	$71	$42
$3	$8	$9	$24	$15
$2	$5	$6	$15	$9
$2	$5	$6	$15	$9
$3	$8	$9	$24	$15
$3	$8	$9	$24	$15
$4	$10	$11	$30	$19
$10	$24	$29	$71	$42
$10	$24	$29	$71	$42

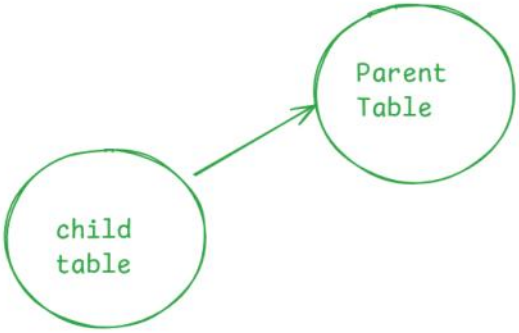
All this column that we have added using calculated columns is not actual a good idea , as this columns are numerical types not useful for filtering/grouping.

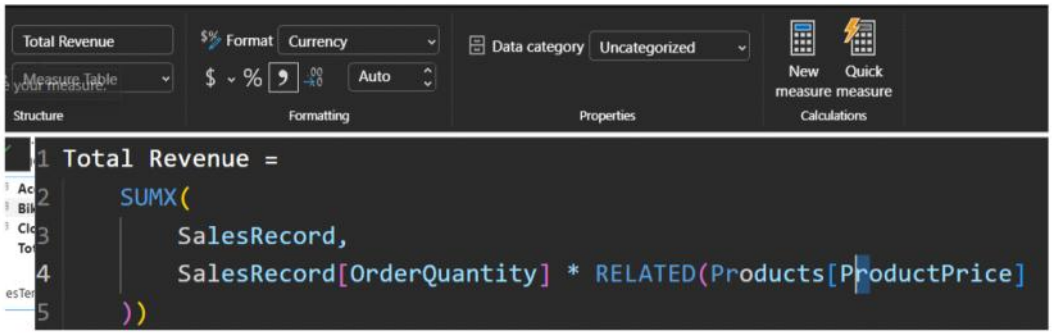
Also the number of records added are roughly
60k * 5 columns ~ 300k [3 Lakh].
High computational & Less Efficient .
Better to go with Measures.

Let's try to reduce the C.C and store every single measures in Measure Table.

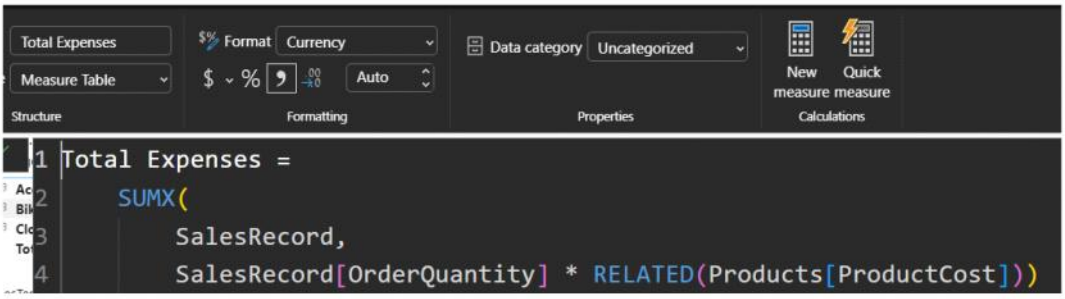
Measure Table

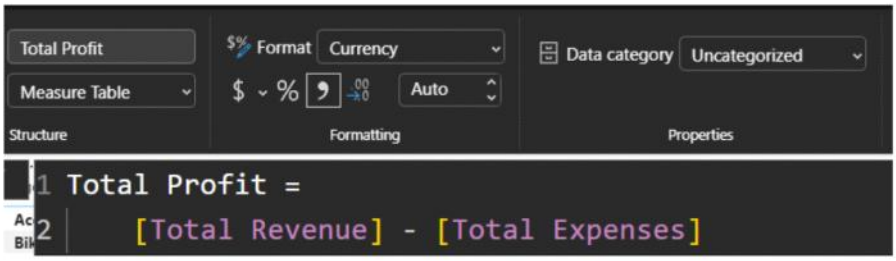




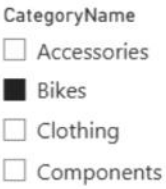


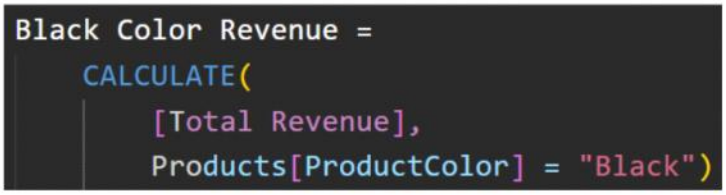
$24.91M
Total Revenue





ProductColor	Total Revenue	Sum of OrderQuantity
Black	$76,81,997.28	5062
Red	$48,73,778.22	1912
Yellow	$45,40,599.97	3130
Silver	$44,06,958.92	2562
Blue	$21,39,160.71	1263
Total	**$2,36,42,495.10**	**13929**





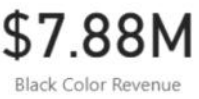
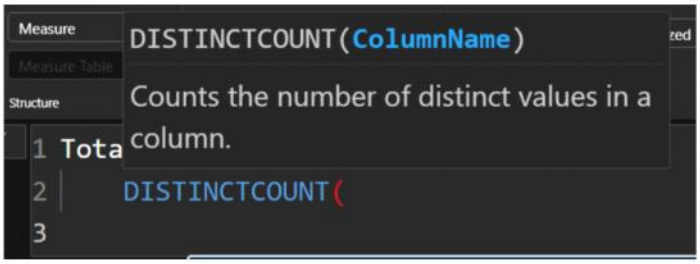
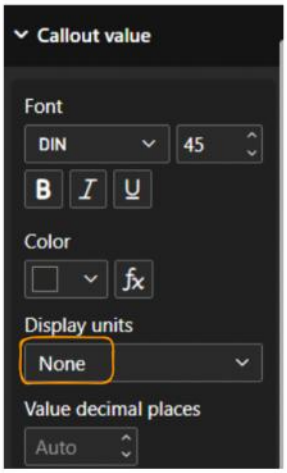
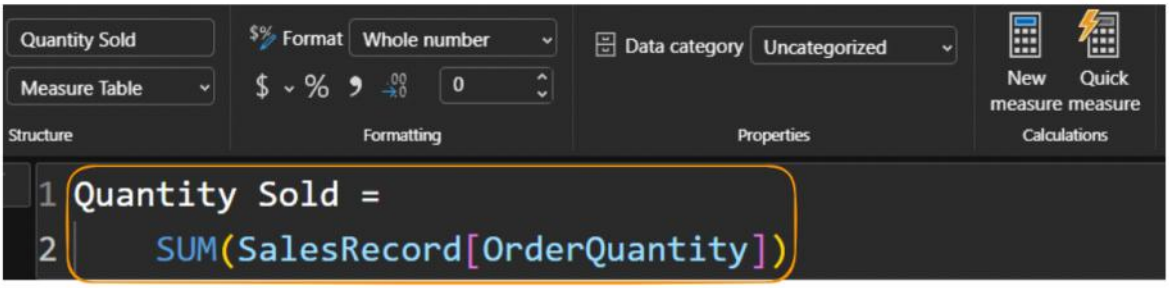
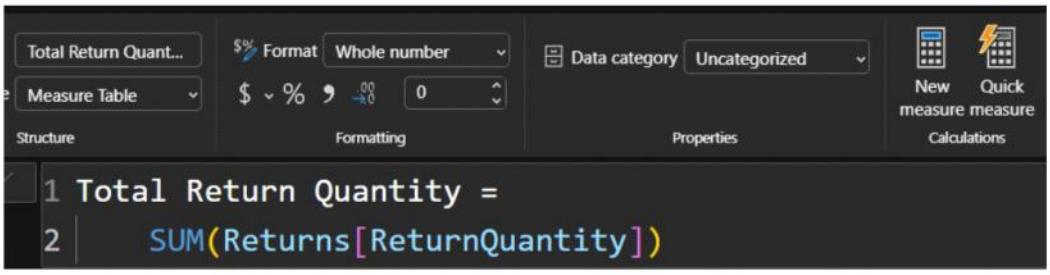


Table: SalesRecord (56,046 rows) Column: OrderNumber (25,164 distinct values)









Weekend Order / Weekday Orders

```
DayName = FORMAT(
    'Calendar'[Date],
    "DDDD")
```

Date	Year	Quarter	Month	Day	DayName
01-07-2016	2016	3	7	1	Friday
02-07-2016	2016	3	7	2	Saturday
03-07-2016	2016	3	7	3	Sunday
04-07-2016	2016	3	7	4	Monday
05-07-2016	2016	3	7	5	Tuesday
06-07-2016	2016	3	7	6	Wednesday
07-07-2016	2016	3	7	7	Thursday
08-07-2016	2016	3	7	8	Friday
09-07-2016	2016	3	7	9	Saturday
10-07-2016	2016	3	7	10	Sunday

```
IsWeekend =
SWITCH(
    TRUE(),
    'Calendar'[DayName] IN {"Saturday","Sunday"} , "Weekend",
    "Weekday")
```

Date	Year	Quarter	Month	Day	DayName	IsWeekend
01-07-2016	2016	3	7	1	Friday	Weekday
02-07-2016	2016	3	7	2	Saturday	Weekend
03-07-2016	2016	3	7	3	Sunday	Weekend
04-07-2016	2016	3	7	4	Monday	Weekday
05-07-2016	2016	3	7	5	Tuesday	Weekday
06-07-2016	2016	3	7	6	Wednesday	Weekday
07-07-2016	2016	3	7	7	Thursday	Weekday
08-07-2016	2016	3	7	8	Friday	Weekday
09-07-2016	2016	3	7	9	Saturday	Weekend
10-07-2016	2016	3	7	10	Sunday	Weekend

```
IsWeekend? =
SWITCH(
    'Calendar'[DayName],
    "Monday" , "Weekday",
    "Tuesday" , "Weekday",
    "Wednesday" , "Weekday",
    "Thursday" , "Weekday",
    "Friday" , "Weekday",
    "Saturday" , "Weekend",
    "Sunday" , "Weekend")
```

Date	Year	Quarter	Month	Day	DayName	IsWeekend	IsWeekend?
01-07-2016	2016	3	7	1	Friday	Weekday	Weekday
02-07-2016	2016	3	7	2	Saturday	Weekend	Weekend
03-07-2016	2016	3	7	3	Sunday	Weekend	Weekend
04-07-2016	2016	3	7	4	Monday	Weekday	Weekday
05-07-2016	2016	3	7	5	Tuesday	Weekday	Weekday
06-07-2016	2016	3	7	6	Wednesday	Weekday	Weekday
07-07-2016	2016	3	7	7	Thursday	Weekday	Weekday
08-07-2016	2016	3	7	8	Friday	Weekday	Weekday
09-07-2016	2016	3	7	9	Saturday	Weekend	Weekend
10-07-2016	2016	3	7	10	Sunday	Weekend	Weekend

Weekend/Weekday Qty Sold

```
Weekend Qty Sold =
    CALCULATE(
        [Quantity Sold],
        'Calendar'[IsWeekend] = "Weekend")
```

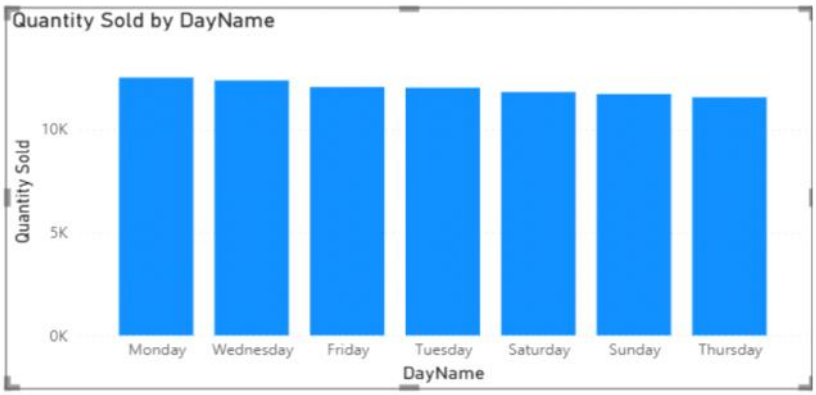
24K

Weekend Qty Sold

```
Weekday Qty Sold =
    CALCULATE(
        [Quantity Sold],
        'Calendar'[IsWeekend] = "Weekday")
```

61K

Weekday Qty Sold

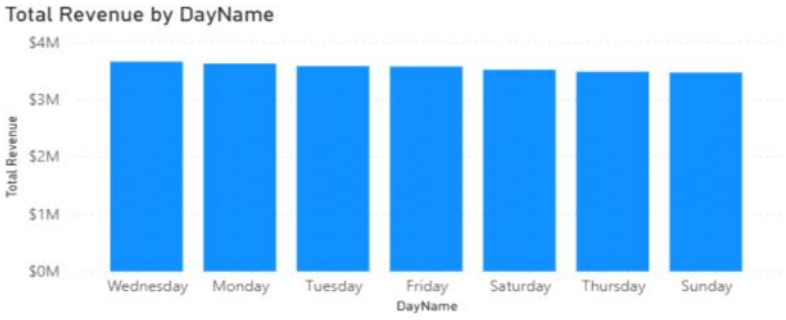



```
Weekday Revenue =
    CALCULATE(
        [Total Revenue],
        'Calendar'[IsWeekend] = "Weekday")
```

```
Weekend Revenue =
    CALCULATE(
        [Total Revenue],
        'Calendar'[IsWeekend] = "Weekend")
```

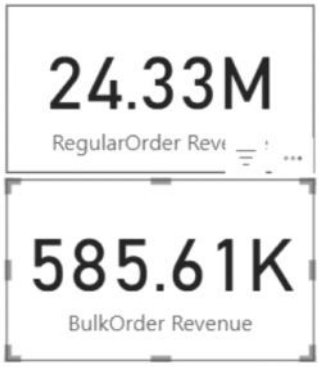
$6.99M
Weekend Revenue

17.93M
Weekday Revenue




```
Order Type =
    SWITCH(
        TRUE(),
        SalesRecord[OrderQuantity] > 1 , "Bulk Order",
        "Regular Order"
)
```

	StockDate	OrderNumber	ProductKey	CustomerKey	TerritoryKey	OrderLineItem	OrderQuantity	Order Type
15	03-06-2002	SO46718	360	12570	9	1	1	Regular Orde
15	22-04-2002	SO46736	360	12341	9	1	1	Regular Orde
15	05-05-2002	SO46776	360	12356	9	1	1	Regular Orde
15	22-06-2002	SO46808	360	12347	9	1	1	Regular Orde
15	11-05-2002	SO46826	360	12575	9	1	1	Regular Orde
15	21-04-2002	SO47075	360	12685	9	1	1	Regular Orde
15	01-05-2002	SO47098	360	12667	9	1	1	Regular Orde
15	21-04-2002	SO47149	360	12669	9	1	1	Regular Orde
15	04-06-2002	SO47212	360	12580	9	1	1	Regular Orde
15	29-06-2002	SO47302	360	12670	9	1	1	Regular Orde
15	12-08-2002	SO47328	360	12681	9	1	1	Regular Orde
15	13-08-2002	SO47346	360	12585	9	1	1	Regular Orde
15	12-06-2002	SO47744	360	12989	9	1	1	Regular Orde
15	28-07-2002	SO47745	360	12998	9	1	1	Regular Order
15	22-08-2002	SO47753	360	13020	9	1	1	Regular Order
15	17-06-2002	SO47769	360	12703	9	1	1	Regular Order
15	06-09-2002	SO47857	360	13024	9	1	1	Regular Order
15	14-07-2002	SO47867	360	12991	9	1	1	Regular Order

```
RegularOrder Revenue =
    CALCULATE(
        [Total Revenue],
        SalesRecord[Order Type] = "Regular Order")
```

```
BulkOrder Revenue =
    CALCULATE(
        [Total Revenue],
        SalesRecord[Order Type] = "Bulk Order")
```