

Advanced DAX Functions - p2

```
IsWeekend? =
    IF('Calendar Table'[DayName] = "Saturday" || 'Calendar Table'[DayName] = "Sunday",
        "Weekend" , "Weekday")
```

```
IsWeekend? =
    IF('Calendar Table'[DayName] IN {"Saturday" , "Sunday"},
        "Weekend" , "Weekday")
```

1 Short DayName = FORMAT('Calendar Table'[Date] , "DDD")

Date	Year	Month	Day	MonthName	ShortMonthName	DayName	Weekday	IsWeekend?	Short DayName
01 January 2024	2024		1	January	Jan	Monday		1	Weekday Mon
02 January 2024	2024		2	January	Jan	Tuesday		2	Weekday Tue
03 January 2024	2024		3	January	Jan	Wednesday		3	Weekday Wed
04 January 2024	2024		4	January	Jan	Thursday		4	Weekday Thu
05 January 2024	2024		5	January	Jan	Friday		5	Weekday Fri
06 January 2024	2024		6	January	Jan	Saturday		6	Weekend Sat
07 January 2024	2024		7	January	Jan	Sunday		7	Weekend Sun
08 January 2024	2024		8	January	Jan	Monday		1	Weekday Mon
09 January 2024	2024		9	January	Jan	Tuesday		2	Weekday Tue
10 January 2024	2024		10	January	Jan	Wednesday		3	Weekday Wed
11 January 2024	2024		11	January	Jan	Thursday		4	Weekday Thu
12 January 2024	2024		12	January	Jan	Friday		5	Weekday Fri
13 January 2024	2024		13	January	Jan	Saturday		6	Weekend Sat
14 January 2024	2024		14	January	Jan	Sunday		7	Weekend Sun

```
IsWeekend =
    IF(['Calendar Table'[Short DayName] = "Mon" ||
        'Calendar Table'[Short DayName] = "Tue" ||
        'Calendar Table'[Short DayName] = "Wed" ||
        'Calendar Table'[Short DayName] = "Thu" ||
        'Calendar Table'[Short DayName] = "Fri",
        "Weekday" , "Weekend")
```

```
IsWeekend =
    IF('Calendar Table'[Short DayName] IN {"Mon", "Tue", "Wed", "Thu", "Fri"},
        "Weekday" , "Weekend")
```

```
IsWeekend =
    IF(OR('Calendar Table'[Short DayName] = "Sat" , 'Calendar Table'[Short DayName] = "Sun"),
        "Weekend" , "Weekday")
```

```

IsWeekend =
    SWITCH(
        TRUE(),
        'Calendar Table'[Short DayName] = "Mon", "Weekday",
        'Calendar Table'[Short DayName] = "Tue", "Weekday",
        'Calendar Table'[Short DayName] = "Wed", "Weekday",
        'Calendar Table'[Short DayName] = "Thu", "Weekday",
        'Calendar Table'[Short DayName] = "Fri", "Weekday",
        "Weekend"
    )

```

1 Alternative Days =

2 SWITCH(

3 TRUE(),

4 'Calendar Table'[Short DayName] IN {"Mon", "Wed", "Fri"}, "MWF",

5 'Calendar Table'[Short DayName] IN {"Tue", "Thu", "Sat"}, "TTS",

6 "WeekOff")

Date	Year	Month	Day	MonthName	ShortMonthName	DayName	Weekday	IsWeekend?	Short DayName	IsWeekend	Alternative Days
01 January 2024	2024		1	January	Jan	Monday		1	Weekday	Mon	Weekday
02 January 2024	2024		2	January	Jan	Tuesday		2	Weekday	Tue	Weekday
03 January 2024	2024		3	January	Jan	Wednesday		3	Weekday	Wed	Weekday
04 January 2024	2024		4	January	Jan	Thursday		4	Weekday	Thu	Weekday
05 January 2024	2024		5	January	Jan	Friday		5	Weekday	Fri	Weekday
06 January 2024	2024		6	January	Jan	Saturday		6	Weekend	Sat	Weekend
07 January 2024	2024		7	January	Jan	Sunday		7	Weekend	Sun	Weekend
08 January 2024	2024		8	January	Jan	Monday		1	Weekday	Mon	Weekday
09 January 2024	2024		9	January	Jan	Tuesday		2	Weekday	Tue	Weekday
10 January 2024	2024		10	January	Jan	Wednesday		3	Weekday	Wed	Weekday

```

Alternative Days =
    SWITCH(
        TRUE(),
        'Calendar Table'[Weekday] IN {1,3,5}, "MWF",
        'Calendar Table'[Weekday] IN {2,4,6}, "TTS",
        "WeekOff")
    
```

DATEDIFF() , DATEADD()

we Must deliver the product within 2 days or 48 hours.

ORDERDATETIME	DELIVERYDATETIME
19-05-2014 23:07:00	21-05-2014 11:19:59
25-11-2014 01:04:00	25-11-2014 07:56:06
13-10-2014 00:33:00	14-10-2014 15:46:41
14-08-2016 23:02:00	16-08-2016 17:27:35
28-08-2014 00:16:00	29-08-2014 15:53:17
17-06-2012 23:51:00	20-06-2012 23:46:07
15-05-2014 23:47:00	16-05-2014 09:08:01
26-09-2013 23:42:00	27-09-2013 02:26:05
12-03-2014 00:54:00	13-03-2014 17:57:38

Target Delivery Date =
Orderdate + 2.

TargetDeliveryDate - DeliveryDate

=0 or +ve : We have delivered the product on time or early

= -ve - delay in delivery

Target Delivery Date =

```
DATEADD(  
    'Vehicle Orders'[ORDERDATETIME].[Date], 2, DAY)
```

DATEDIFF(Date1, Date2, Interval)

Returns the number of units (unit specified in Interval) between the input two dates.

Date2 - Date1

TargetDeliveryDate - DeliveryDate

```
1 Delay in Delivery =  
2 DATEDIFF('Vehicle Orders'[DELIVERYDATETIME].[Date], 'Vehicle Orders'[Target Delivery Date].[Date], HOUR)
```

DUCTLINE	CITY	STATE	POSTALCODE	COUNTRY	TERRITORY	CONTACTLASTNAME	CONTACTFIRSTNAME	DEALSIZE	Target Delivery Date	Delay in Delivery
asic Cars	Madrid	NA	28034	Spain	EMEA	Freyre	Diego	Medium	21-05-2014 00:00:00	0
asic Cars	Madrid	NA	28034	Spain	EMEA	Freyre	Diego	Medium	27-11-2014 00:00:00	48
asic Cars	Madrid	NA	28034	Spain	EMEA	Freyre	Diego	Medium	15-10-2014 00:00:00	24
asic Cars	Madrid	NA	28034	Spain	EMEA	Freyre	Diego	Medium	16-08-2016 00:00:00	0
asic Cars	Madrid	NA	28034	Spain	EMEA	Freyre	Diego	Medium	30-08-2014 00:00:00	24
asic Cars	Madrid	NA	28034	Spain	EMEA	Freyre	Diego	Medium	10-06-2012 00:00:00	24

CALCULATE

- It helps to write complex measures by taking help of an existing measures.

CALCULATE(Expression , Filter)

Small/Medium/Large Deal Size Revenue - Total Revenue

Small Deal Size Revenue =
CALCULATE(
 [Total Revenue],
 'Vehicle Orders'[DEALSIZE] = "Small")

\$2.59M

Small Deal Size Revenue

Medium Deal Size Revenue =
CALCULATE(
 [Total Revenue],
 'Vehicle Orders'[DEALSIZE] = "Medium")

\$4.96M

Medium Deal Size Revenue

Large Deal Size Revenue =
CALCULATE(
 [Total Revenue],
 'Vehicle Orders'[DEALSIZE] = "Large")

\$738.76K

Large Deal Size Revenue

\$8.29M

Total Revenue

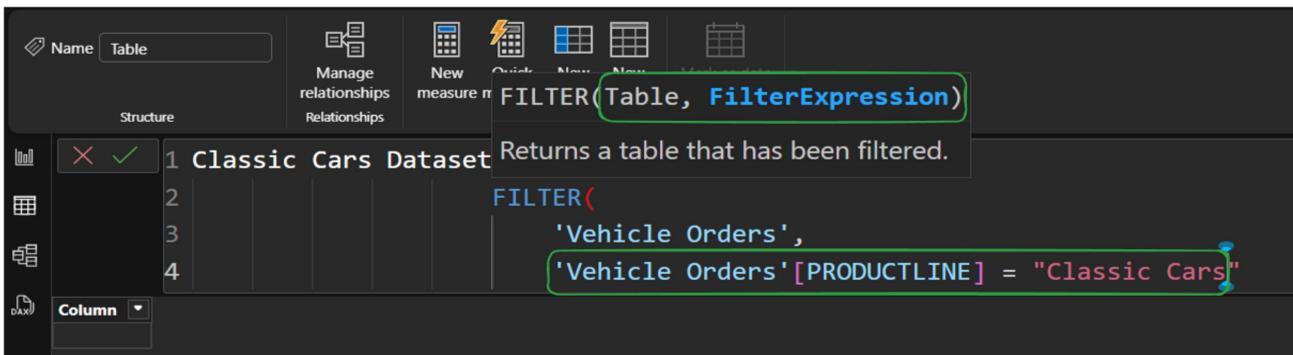
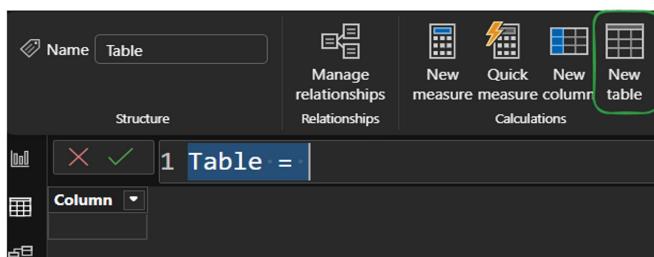
```
Classic Cars - Medium DealSize Revenue =
CALCULATE(
    [Total Revenue],
    'Vehicle Orders'[DEALSIZE] = "Medium",
    'Vehicle Orders'[PRODUCTLINE] = "Classic Cars")
```

```
Classic Cars - Medium DealSize Revenue =
CALCULATE(
    [Medium Deal Size Revenue],
    'Vehicle Orders'[PRODUCTLINE] = "Classic Cars")
```

\$1.85M

Classic Cars - Medium DealS...

FILTER



1 Classic Cars Dataset =													
ORDERNUMBER	QUANTITYORDERED	PRICEEACH	ORDERLINENUMBER	ORDERDATETIME	DELIVERYDATETIME	STATUS	PRODUCTLINE	CITY	STATE	POSTALCODE	COUNT	Sort ascending	
10203	20	₹ 100	8	19-05-2014 23:07:00	21-05-2014 11:19:59	Shipped	Classic Cars	Madrid	NA	28034	Spain	Sort descending	
10153	20	₹ 100	11	25-11-2014 01:04:00	25-11-2014 07:56:00	Shipped	Classic Cars	Madrid	NA	28034	Spain	Clear sort	
10104	34	₹ 100	1	13-10-2014 00:33:00	14-10-2014 15:46:41	Shipped	Classic Cars	Madrid	NA	28034	Spain	Clear filter	
10153	42	₹ 100	12	14-08-2016 23:02:00	16-08-2016 17:27:35	Shipped	Classic Cars	Madrid	NA	28034	Spain	Clear all filters	
10212	39	₹ 100	16	28-08-2014 00:16:00	29-08-2014 15:53:17	Shipped	Classic Cars	Madrid	NA	28034	Spain	Text filters	
10203	47	₹ 100	5	12-03-2014 00:54:00	13-03-2014 17:57:38	Shipped	Classic Cars	Madrid	NA	28034	Spain	>	
10212	33	₹ 100	15	07-05-2014 01:19:00	09-05-2014 18:31:03	Shipped	Classic Cars	Madrid	NA	28034	Spain	Search	
10212	29	₹ 100	10	09-05-2016 00:47:00	09-05-2016 02:47:22	Shipped	Classic Cars	Madrid	NA	28034	Spain	(Select all)	
10212	38	₹ 100	6	24-05-2013 00:33:00	26-05-2013 02:35:03	Shipped	Classic Cars	Madrid	NA	28034	Spain	Classic Cars	
10212	41	₹ 100	9	12-09-2012 01:12:00	15-09-2012 00:02:15	Shipped	Classic Cars	Madrid	NA	28034	Spain	OK	
10104	24	₹ 100	8	04-11-2013 00:58:00	04-11-2013 17:34:58	Shipped	Classic Cars	Madrid	NA	28034	Spain	Cancel	
10246	40	₹ 100	4	13-09-2013 00:39:00	14-09-2013 10:38:05	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10412	41	₹ 100	4	21-10-2013 00:56:00	23-10-2013 16:51:09	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10212	40	₹ 100	7	06-10-2012 00:36:00	06-10-2012 19:04:53	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10311	43	₹ 100	10	17-03-2012 00:42:00	19-03-2012 08:16:40	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10379	29	₹ 100	5	14-08-2015 23:10:00	17-08-2015 17:15:38	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10104	23	₹ 100	13	07-01-2017 22:29:00	10-01-2017 02:11:06	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10212	40	₹ 100	11	15-08-2012 23:40:00	16-08-2012 13:55:01	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10383	47	₹ 100	6	07-04-2015 00:29:00	09-04-2015 05:43:57	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10394	22	₹ 100	5	22-02-2015 00:40:00	23-02-2015 10:45:01	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10203	32	₹ 100	10	03-04-2015 00:10:00	04-04-2015 12:16:26	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10355	23	₹ 100	7	31-12-2014 01:51:00	31-12-2014 07:57:53	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10212	45	₹ 100	8	23-07-2014 01:42:00	25-07-2014 04:39:30	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10311	32	₹ 100	11	23-11-2014 23:33:00	25-11-2014 03:08:55	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10104	38	₹ 100	3	14-09-2015 00:16:00	14-09-2015 19:45:10	Shipped	Classic Cars	Madrid	NA	28034	Spain		
10383	26	₹ 100	1	28-10-2012 00:05:00	01-11-2012 11:20:50	Shipped	Classic Cars	Madrid	NA	28034	Spain		

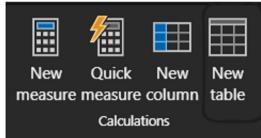
Summarize Table

It will create a summary from your original table.

```
SUMMARIZE(Table,
[GroupBy_ColumnName1], ...,
[Name1], [Expression1], ...)
```

Creates a summary the input table

grouped by the specified columns.



```
1 SUMMARIZE Table =
2
3
4
5
6
```

```
SUMMARIZE(
    'Vehicle Orders',
    'Vehicle Orders'[PRODUCTLINE],
    "Total Sales",
    [Total Revenue])
```

PRODUCTLINE	Total Sales
Motorcycles	\$9,71,086.29
Classic Cars	\$29,68,546.4
Trucks and Buses	\$9,47,355.18
Vintage Cars	\$16,44,212.05
Planes	\$8,77,942.21
Ships	\$6,77,940.4
Trains	\$2,03,804.26

PRODUCTLINE	Total Revenue
Classic Cars	\$29,68,546.4
Motorcycles	\$9,71,086.29
Planes	\$8,77,942.21
Ships	\$6,77,940.4
Trains	\$2,03,804.26
Trucks and Buses	\$9,47,355.18
Vintage Cars	\$16,44,212.05
Total	\$82,90,886.79

```
1 SUMMARIZE Table =
2
3
4
5
6
7
```

```
SUMMARIZE(
    'Vehicle Orders',
    'Vehicle Orders'[PRODUCTLINE],
    'Vehicle Orders'[DEALSIZE],
    "Total Sales",
    [Total Revenue])
```

PRODUCTLINE	Total Sales	DEALSIZE
Motorcycles	\$3,20,573.57	Small
Classic Cars	\$6,73,864.38	Small
Trucks and Buses	\$2,46,278.69	Small
Vintage Cars	\$5,99,560.24	Small
Planes	\$3,59,469.26	Small
Ships	\$2,87,002.16	Small
Trains	\$1,03,643.9	Small
Motorcycles	\$5,58,912.72	Medium
Classic Cars	\$18,45,151.86	Medium
Trucks and Buses	\$6,65,276.49	Medium
Vintage Cars	\$9,33,451.81	Medium
Planes	\$4,72,345.2	Medium
Ships	\$3,90,938.24	Medium
Trains	\$95,660.36	Medium
Motorcycles	\$91,600	Large
Classic Cars	\$4,49,530.16	Large
Trucks and Buses	\$35,800	Large
Vintage Cars	\$1,11,200	Large
Planes	\$46,127.75	Large
Trains	\$4,500	Large

Dealsize > ProductLine

```

1 SUMMARIZE Table =
2     SUMMARIZE(
3         'Vehicle Orders',
4         'Vehicle Orders'[PRODUCTLINE],
5         'Vehicle Orders'[DEALSIZE],
6         'Vehicle Orders'[COUNTRY],
7         "Total Sales",
8         [Total Revenue])

```

PRODUCTLINE	Total Sales	DEALSIZE	COUNTRY
Classic Cars	\$69,607.37	Medium	Germany
Trucks and Buses	\$8,100	Medium	Germany
Vintage Cars	\$8,111.91	Medium	Germany
Planes	\$11,871.14	Medium	Germany
Ships	\$3,400	Medium	Germany
Classic Cars	\$75,208.37	Medium	Switzerland
Classic Cars	\$9,400	Medium	Ireland
Trucks and Buses	\$3,700	Medium	Ireland
Planes	\$6,700	Medium	Ireland
Motorcycles	\$128,100.98	Small	USA
Classic Cars	\$20,939.2	Small	USA
Trucks and Buses	\$1,06,152.32	Small	USA
Vintage Cars	\$1,98,162.5	Small	USA

```

SUMMARY Table =
    SUMMARIZE(
        'Vehicle Orders',
        'Vehicle Orders'[PRODUCTLINE],
        'Vehicle Orders'[DEALSIZE],
        'Vehicle Orders'[COUNTRY],
        "Total Sales",
        SUM('Vehicle Orders'[Sales Value]))

```

COUNTRY	Total Revenue
Australia	\$5,21,598.46
Large	\$30,100
Classic Cars	\$8,300
Motorcycles	\$9,500
Trucks and Buses	\$4,900
Vintage Cars	\$7,400
Medium	\$3,05,856.96
Classic Cars	\$97,118.15
Motorcycles	\$32,498.15
Planes	\$42,446.95
Ships	\$3,070.4
Trucks and Buses	\$39,344.44
Vintage Cars	\$91,378.87
Small	\$1,85,641.5
Classic Cars	\$48,162.36
Motorcycles	\$31,727.42
Planes	\$27,240.24

R P Py E + Q ...

...

Rows

- > Layout and style presets
- > Grid
- > Blank rows
- > Values
- > Column headers
- > Row headers
- > Column subtotals
- > Row subtotals
- > Column grand total
- > Row grand total

Columns

- +Add data

Values

- Total Revenue
- +Add data

ADD Columns

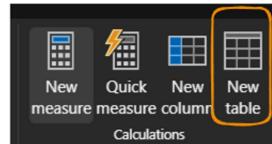
```

ADDCOLUMNS(Table, Name1, Expression1,
...)

```

Returns a table with new columns specified by the DAX expressions.

ADDCOLUMNS(



Add Columns Example =

```

1 ADDCOLUMNS(
    'Vehicle Orders',
    "Order Value" , 'Vehicle Orders'[QUANTITYORDERED] * 'Vehicle Orders'[PRICEEACH],
    "Order Year" , YEAR('Vehicle Orders'[ORDERDATETIME]),
    "Order Month", FORMAT('Vehicle Orders'[ORDERDATETIME], "MMMM")
)

```

COUNTRY	TERITORY	CONTACTLASTNAME	CONTACTFIRSTNAME	DEALSIZE	Target Delivery Date	Delay in Delivery	Sales Value	Order Value	Order Year	Order Month
Spain	EMEA	Freyre	Diego	Medium	21-05-2014 00:00:00	0	\$2,000	\$2,000	2014	May
Spain	EMEA	Freyre	Diego	Medium	27-11-2014 00:00:00	48	\$2,000	\$2,000	2014	November
Spain	EMEA	Freyre	Diego	Medium	15-10-2014 00:00:00	24	\$3,400	\$3,400	2014	October
Spain	EMEA	Freyre	Diego	Medium	16-08-2016 00:00:00	0	\$4,200	\$4,200	2016	August
Spain	EMEA	Freyre	Diego	Medium	30-08-2014 00:00:00	24	\$3,900	\$3,900	2014	August
Spain	EMEA	Freyre	Diego	Medium	19-06-2012 00:00:00	-24	\$4,100	\$4,100	2012	June
Spain	EMEA	Freyre	Diego	Medium	17-05-2014 00:00:00	24	\$4,600	\$4,600	2014	May
Spain	EMEA	Freyre	Diego	Medium	28-09-2013 00:00:00	24	\$5,400	\$5,400	2013	September
Spain	EMEA	Freyre	Diego	Medium	14-03-2014 00:00:00	24	\$4,700	\$4,700	2014	March
Spain	EMEA	Freyre	Diego	Medium	09-05-2014 00:00:00	0	\$3,300	\$3,300	2014	May
Spain	EMEA	Freyre	Diego	Medium	11-05-2016 00:00:00	48	\$2,900	\$2,900	2016	May
Spain	EMEA	Freyre	Diego	Medium	04-06-2012 00:00:00	-24	\$3,600	\$3,600	2012	June
Spain	EMEA	Freyre	Diego	Medium	15-09-2013 00:00:00	0	\$4,000	\$4,000	2013	September
Spain	EMEA	Freyre	Diego	Medium	26-05-2013 00:00:00	0	\$3,800	\$3,800	2013	May
Spain	EMEA	Freyre	Diego	Medium	30-03-2013 00:00:00	48	\$3,900	\$3,900	2013	March
Spain	EMEA	Freyre	Diego	Medium	14-09-2012 00:00:00	-24	\$4,100	\$4,100	2012	September
Spain	EMEA	Freyre	Diego	Medium	06-11-2013 00:00:00	48	\$2,400	\$2,400	2013	November

Var & Return

→ Uses to create a new column. [Calculated Columns]

- Create a discount Price Variable based on the PRODUCT LINE.

- Motor Cycle - 10% Discount
- Classic Cars - 15 % Discount
- Other Product - 20% Discount.

1 -> increase 10% = $100\% + 10\% = 110\% - 1.1$

1 -> increase 5% = $100\% + 5\% = 105\% - 1.05$

1 -> decrease 5% = $100\% - 5\% = 95\% - 0.95$

1 -> decrease 15% = $100\% - 15\% = 85\% - 0.85$

$$100 * 0.85 = \$85$$

```

1 Discounted Price =
2 VAR BasePrice = 'Vehicle Orders'[PRICEEACH]
3 VAR Discount =
4 IF('Vehicle Orders'[PRODUCTLINE] = "Motorcycles", 0.90,
5   IF('Vehicle Orders'[PRODUCTLINE] = "Classic Cars", 0.85, 0.80))
6 )
7 Return BasePrice * Discount
8

```

Discounted Price
\$85
\$85
\$85
\$85
\$85
\$80
\$80
\$80
\$85
\$85
\$85
\$80
\$85
\$85
\$85
\$80
\$85
\$85
\$85
\$85

BasePrice

PRICEEACH	ORDERLINENUMBER	ORDERDATETIME	DELIVERYDATETIME	STATUS	PRODUCTLINE
\$100	8	19-05-2014 23:07:00	21-05-2014 11:19:59	Shipped	Classic Cars
\$100	11	25-11-2014 01:04:00	25-11-2014 07:56:06	Shipped	Classic Cars
\$100	1	13-10-2014 00:33:00	14-10-2014 15:46:41	Shipped	Classic Cars
\$100	12	14-08-2016 23:02:00	16-08-2016 17:27:35	Shipped	Classic Cars
\$100	16	28-08-2014 00:16:00	29-08-2014 15:53:17	Shipped	Classic Cars
\$100	9	17-06-2012 23:51:00	20-06-2012 23:46:07	Shipped	Trucks and Buses
\$100	5	15-05-2014 23:47:00	16-05-2014 09:08:01	Shipped	Trucks and Buses
\$100	5	26-09-2013 23:42:00	27-09-2013 02:26:05	Shipped	Trucks and Buses
\$100	5	12-03-2014 00:54:00	13-03-2014 17:57:38	Shipped	Classic Cars

```

Discounted Price =
VAR BasePrice = 'Vehicle Orders'[PRICEEACH]
VAR Discount =
SWITCH(
    TRUE(),
    'Vehicle Orders'[PRODUCTLINE] = "Motorcycles", 0.9,
    'Vehicle Orders'[PRODUCTLINE] = "Classic Cars", 0.85,
    0.8)
Return BasePrice * Discount

```

BasePrice - discounted Price

(base-discount)/base

$(100 - 85)/100 = 0.85$

$$\frac{1 - (\text{base} - \text{discount})}{\text{base}} * 100 = X\%$$

Related Function

- It brings the column from another table using RELATED() function, but the only thing that you need to remember is what?
- Both table should have some relationship exist, then only it will work.