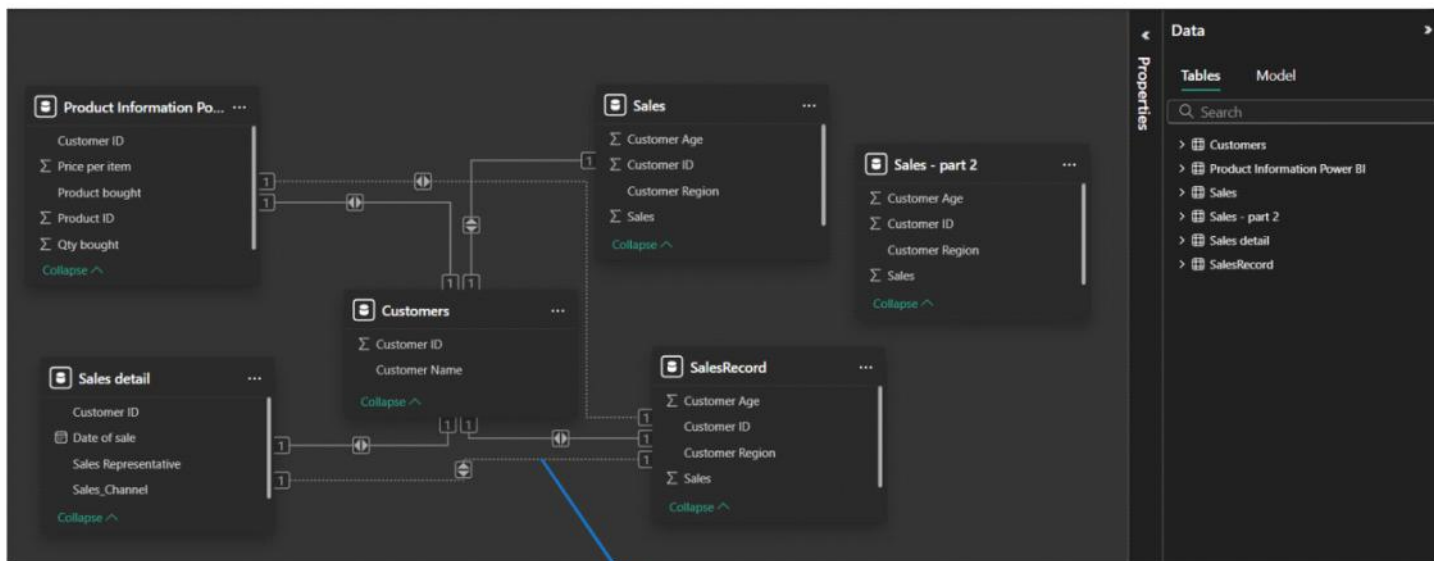
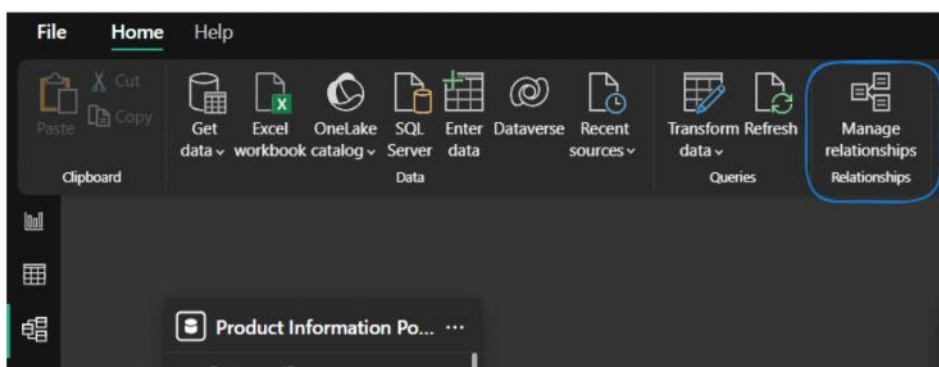


## Advanced Power Query and Data Modelling



Auto-Detected



**Manage relationships**

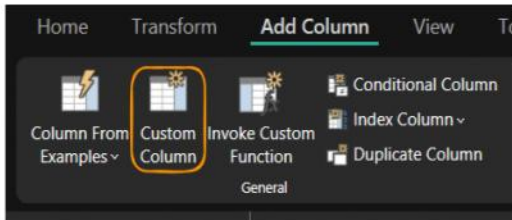
Buttons: + New relationship, Autodetect, Edit, Delete, Filter

From: table (column) ↑	Relationship	To: table (column)	Status
Σ Customers (Customer ID)	1 — 1	SalesRecord (Customer ID)	Active
Product Information Power BI ...	1 — 1	Σ Customers (Customer ID)	Active
Product Information Power BI ...	1 — 1	SalesRecord (Customer ID)	Inactive
Σ Sales (Customer ID)	1 — 1	Σ Customers (Customer ID)	Active
Sales detail (Customer ID)	1 — 1	Σ Customers (Customer ID)	Active
Sales detail (Customer ID)	1 — 1	SalesRecord (Customer ID)	Inactive

Qty bought	Price per item
Valid 100%	Valid 100%
Error 0%	Error 0%
Empty 0%	Empty 0%
20 distinct, 20 unique	10 distinct, 5 unique
62	4.99
29	1.99
55	12.49
81	19.99
42	23.95
35	4.99
3	275.00
2	125.00
7	1.29
16	15.99
76	1.99
28	8.99
57	19.99
64	8.99
14	1.29
15	19.99
11	4.99
96	4.99
94	19.99
67	1.29

Qty bought	Price per item
Valid 100%	Valid 100%
Error 0%	Error 0%
Empty 0%	Empty 0%
20 distinct, 20 unique	10 distinct, 5 unique
62	4.99
29	1.99
55	12.49
81	19.99
42	23.95
35	4.99
3	275.00
2	125.00
7	1.29
16	15.99
76	1.99
28	8.99
57	19.99
64	8.99
14	1.29
15	19.99
11	4.99
96	4.99
94	19.99
67	1.29

Qty bought	Price per item	Sales Amount
Valid 100%	Valid 100%	Valid 100%
Error 0%	Error 0%	Error 0%
Empty 0%	Empty 0%	Empty 0%
20 distinct, 20 unique	10 distinct, 5 unique	20 distinct, 20 unique
62	4.99	309.38
29	1.99	115.42
55	12.49	2,060.85
81	19.99	6,476.76
42	23.95	5,029.50
35	4.99	1,047.90
3	275.00	5,775.00
2	125.00	2,000.00
7	1.29	81.27



### Custom Column

Add a column that is computed from the other columns.

New column name  
Sales Amount

Custom column formula ⓘ  
= [Qty bought] \* [Price per item]

Available columns  
Customer ID  
Product ID  
Product bought  
Qty bought  
Price per item

<< Insert

Learn about Power Query formulas

✓ No syntax errors have been detected.

OK Cancel

Qty bought	Price per item	Sales Amount
Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%
20 distinct, 20 unique	10 distinct, 5 unique	20 distinct, 20 unique
62	4.99	309.38
29	1.99	57.71
55	12.49	686.95
81	19.99	1,619.19
42	23.95	1,005.90
35	4.99	174.65

**PROPERTIES**  
Name  
Product Information Power BI

**APPLIED STEPS**  
Source  
Promoted Headers  
Changed Type  
Removed Columns  
Filtered Rows  
Added Custom  
Changed Type1

### Add Index Column

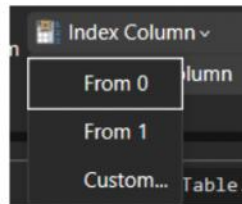
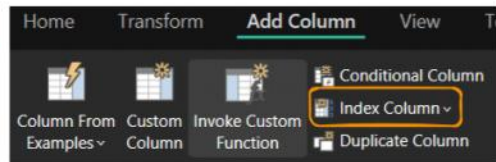
Add an index column with a specified starting index and increment.

Starting Index  
1001

Increment  
1

OK Cancel

Index	Index.1	Index.2
Valid 100%	Valid 100%	Valid 100%
Error 0%	Error 0%	Error 0%
Empty 0%	Empty 0%	Empty 0%
20 distinct, 20 unique	20 distinct, 20 unique	20 distinct, 20 unique
0	1	1001
1	2	1002
2	3	1003
3	4	1004
4	5	1005
5	6	1006
6	7	1007
7	8	1008
8	9	1009
9	10	1010



### Conditional Columns :

Qty >= 50 : "Bulk Order"  
 Qty >= 30 : 'Medium Order'  
 Else Qty<30 : 'Regular Order'

#### Add Conditional Column

Add a conditional column that is computed from the other columns or values.

New column name:

Column Name	Operator	Value	Output
If Qty bought	is greater than or...	50	Bulk Order
Else If Qty bought	is greater than or...	30	Medium Order
Else			Regular Order

Buttons: Add Clause, OK, Cancel

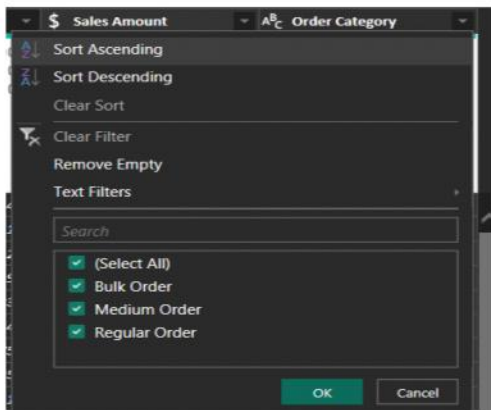
Qty bought	Price per item	Sales Amount	Order Category
Valid 100%	Valid 100%	Valid 100%	Valid 100%
Error 0%	Error 0%	Error 0%	Error 0%
Empty 0%	Empty 0%	Empty 0%	Empty 0%
20 distinct, 20 unique	10 distinct, 5 unique	20 distinct, 20 unique	3 distinct, 0 unique
62	4.99	309.38	Bulk Order
29	1.99	57.71	Regular Order
55	12.49	686.95	Bulk Order
81	19.99	1,619.19	Bulk Order
42	23.95	1,005.90	Medium Order
35	4.99	174.65	Medium Order
3	275.00	825.00	Regular Order
2	125.00	250.00	Regular Order

#### PROPERTIES

Name: Product Information Power BI

#### APPLIED STEPS

- Source
- Promoted Headers
- Changed Type
- Removed Columns
- Filtered Rows
- Added Custom
- Changed Type1
- Added Conditional Column
- Changed Type2



Primary Key [Unique + Not Null]

Customer ID	Customer Name
1	Elvin Catron
2	Gustano Primm
3	Lacresha Whitty
4	Octavio Ricci
5	Iacinda Moffett
6	Betty scruggs
7	Era Gassner
8	Laticia Crimi
9	Alberta Fabela
10	Taylor Pogue
11	Grisede Mariscal
12	Sylvester Willbourn
13	Ricky Cheshire
14	Karisa Oquwndo
15	Debbie Orone
16	Loralee Widell
17	Season Viers
18	Iuan Luker
19	Shan texeria
20	Yee Bordeaux

Foreign Key

Customer ID	Customer Region	Customer Age	Sales
1	North	49	309.38
2	North	10	57.71
3	North	47	686.95
4	South	11	1,619.19
5	East	17	1,005.90
6	East	23	174.65
7	East	21	825.00
8	East	27	250.00
9	East	44	9.03
10	East	10	255.84
11	North	29	151.24
12	South	29	251.72
13	South	42	1,139.43
14	North	12	575.36
15	North	45	18.06
16	North	30	299.85
17	North	35	54.89
18	West	50	479.04
19	West	42	1,879.06
20	West	44	86.43

Customer Name



Merge Queries ▾

Merge Queries

Merge Queries as New

Merge

Select a table and matching columns to create a merged table.

Sales

Customer ID	Customer Region	Customer Age	Sales
1	North	49	309.38
2	North	10	57.71
3	North	47	686.95
4	South	11	1,619.19
5	East	17	1,005.90

Customers

Customer ID	Customer Name
1	Elvin Catron
2	Gustano Primm
3	Lacresha Whitty
4	Octavio Ricci
5	Jacinda Moffett

Join Kind

Left Outer (all from first, matching from second) ▾

☐ Use fuzzy matching to perform the merge

Fuzzy matching options

✓ The selection matches 20 of 20 rows from the first table.

OK

Cancel

Customer ID	Customer Region	Customer Age	Sales	Customers
<div><div><div>Valid100%</div><div>Error0%</div><div>Empty0%</div></div><div><div></div><div></div><div></div></div><div>20 distinct, 20 unique</div></div>	<div><div><div>Valid100%</div><div>Error0%</div><div>Empty0%</div></div><div><div></div><div></div><div></div></div><div>4 distinct, 0 unique</div></div>	<div><div><div>Valid100%</div><div>Error0%</div><div>Empty0%</div></div><div><div></div><div></div><div></div></div><div>16 distinct, 12 unique</div></div>	<div><div><div>Valid100%</div><div>Error0%</div><div>Empty0%</div></div><div><div></div><div></div><div></div></div><div>20 distinct, 20 unique</div></div>	<div><div><div>Valid100%</div><div>Error0%</div><div>Empty0%</div></div><div><div></div><div></div><div></div></div><div></div></div>
1	North	49	309.38	Table
2	North	10	57.71	Table
3	North	47	686.95	Table
4	South	11	1,619.19	Table
5	East	17	1,005.90	Table
6	East	23	174.65	Table
7	East	21	825.00	Table
8	East	27	250.00	Table
9	East	44	9.03	Table
10	East	10	255.84	Table
11	North	29	151.24	Table
12	South	29	251.72	Table
13	South	42	1,139.43	Table
14	North	12	575.36	Table
15	North	45	18.06	Table
16	North	30	299.85	Table
17	North	35	54.85	Table
18	West	50	479.04	Table
19	West	42	1,879.06	Table
20	West	44	86.43	Table

☒ Expand
 ☐ Aggregate

☒ (Select All Columns)

☒ Customer ID

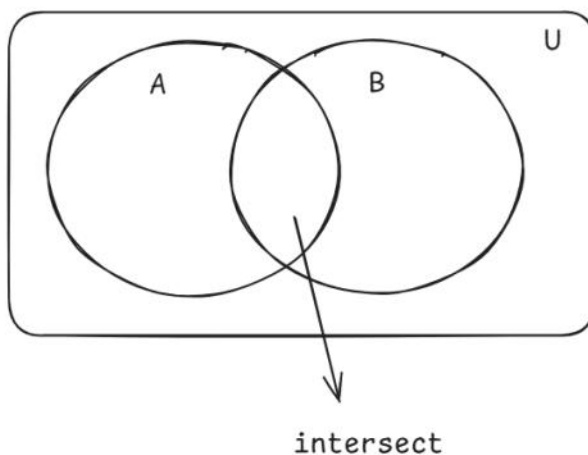
☒ Customer Name

☒ Use original column name as prefix

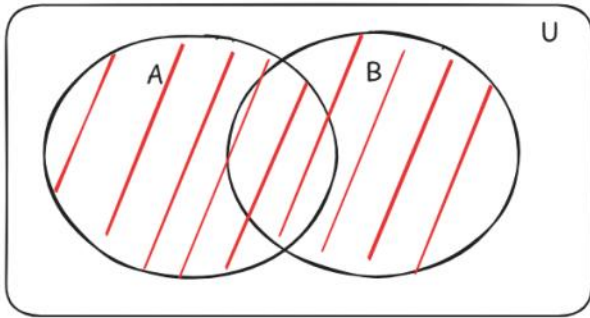
OK
 Cancel

123 Customer ID	A <sup>B</sup> <sub>C</sub> Customer Region	123 Customer Age	\$ Sales	A <sup>B</sup> <sub>C</sub> Customers.Customer Name
Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%
20 distinct, 20 unique	4 distinct, 0 unique	16 distinct, 12 unique	20 distinct, 20 unique	20 distinct, 20 unique
1	North	49	309.38	Elvin Catron
2	North	10	57.71	Gustano Primm
3	North	47	686.95	Lacresha Whitty
4	South	11	1,619.19	Octavio Ricci
5	East	17	1,005.90	Jacinda Moffett
6	East	23	174.65	Betty scruggs
7	East	21	825.00	Era Gassner
8	East	27	250.00	Laticia Crimi
9	East	44	9.03	Alberta Fabela
10	East	10	255.84	Taylor Pogue
11	North	29	151.24	Grisede Mariscal
12	South	29	251.72	Sylvester Willbourn
13	South	42	1,139.43	Ricky Cheshire
14	North	12	575.36	Karisa Oquwndo
15	North	45	18.06	Debbie Orone
16	North	30	299.85	Loralee Widell
17	North	35	54.89	Season Viers
18	West	50	479.04	Juan Luker
19	West	42	1,879.06	Shan texeria
20	West	44	86.43	Yee Bordeau

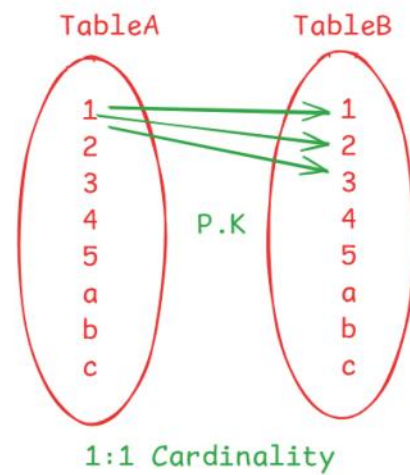
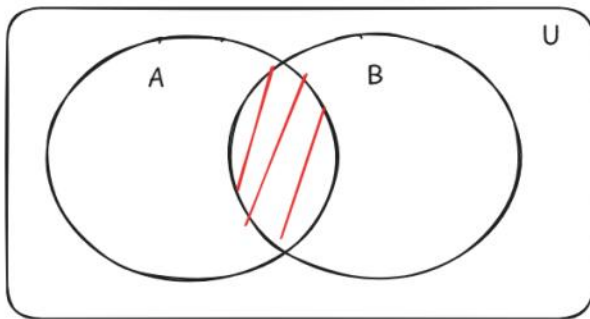
## Joins



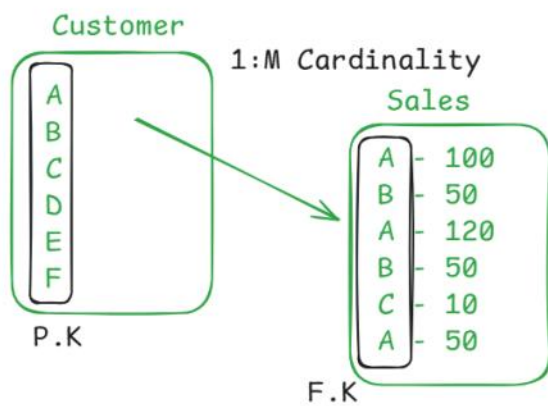
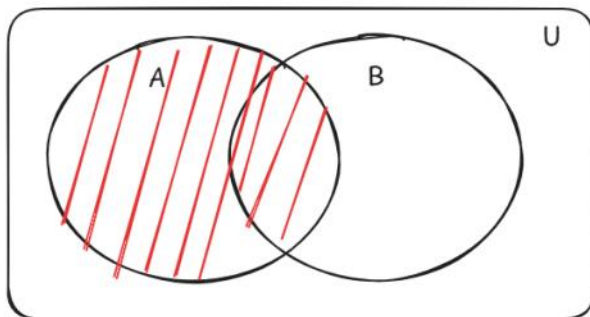
## Full JOIN



## Inner Join



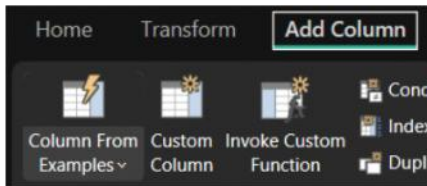
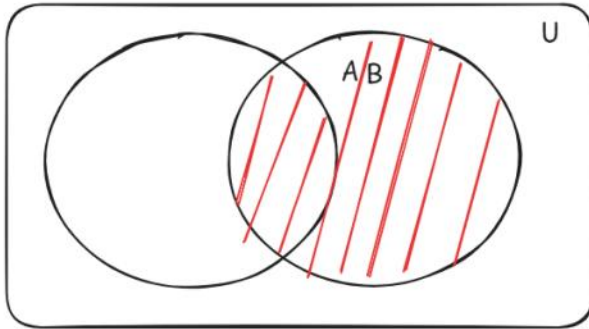
## Left Join



A - 270 [Sum]  
 B - 100 [Sum]  
 C - 10 [Sum]  
 D - null  
 E - null  
 F - null

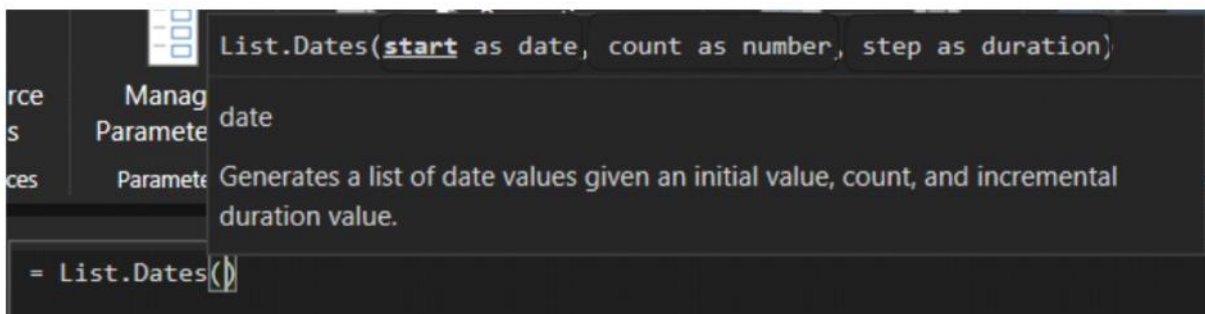
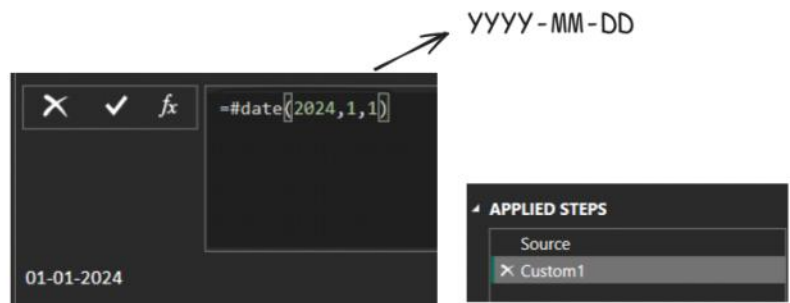
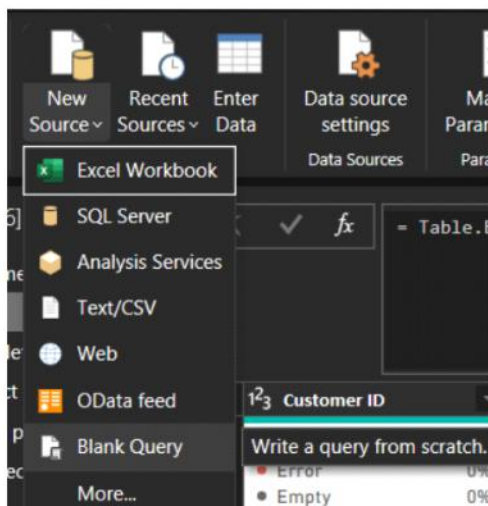


Right Join



Rolling Calendar

Invoke Custom Functions



```
= List.Dates(
    Source,
    Number.From(DateTime.LocalNow()) - Number.From(Source),
    #duration(1,0,0,0)
)
```

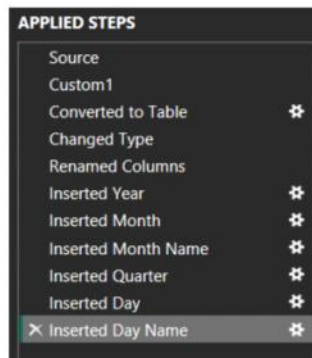
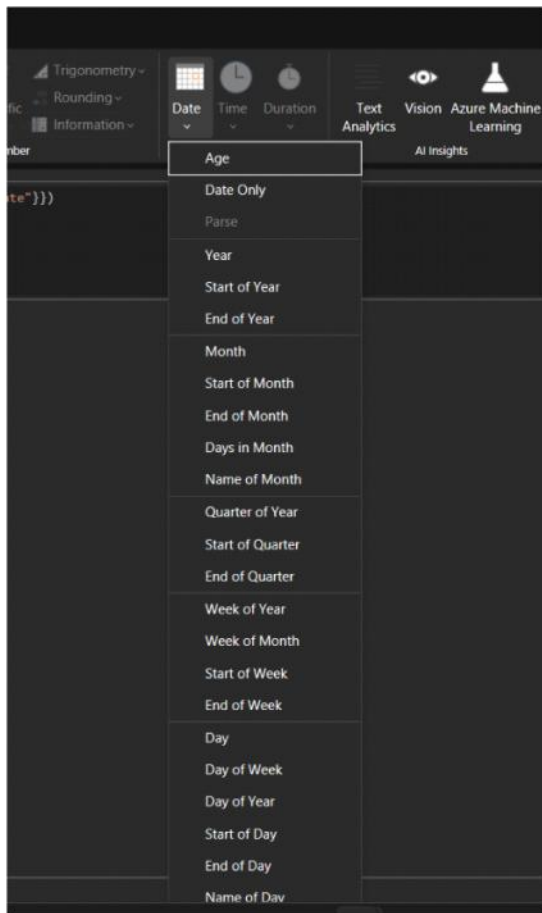
	List
703	03-12-2025
704	04-12-2025
705	05-12-2025
706	06-12-2025
707	07-12-2025
708	08-12-2025
709	09-12-2025
710	10-12-2025
711	11-12-2025
712	12-12-2025
713	13-12-2025
714	14-12-2025
715	15-12-2025
716	16-12-2025
717	17-12-2025
718	18-12-2025
719	19-12-2025

Home	Transform	Add Column	View	Tools	Help	List Tools
To Table Convert	Keep Items Remove Items Manage Items	Remove Duplicates Reverse Items	Sort Statistics Numeric List			

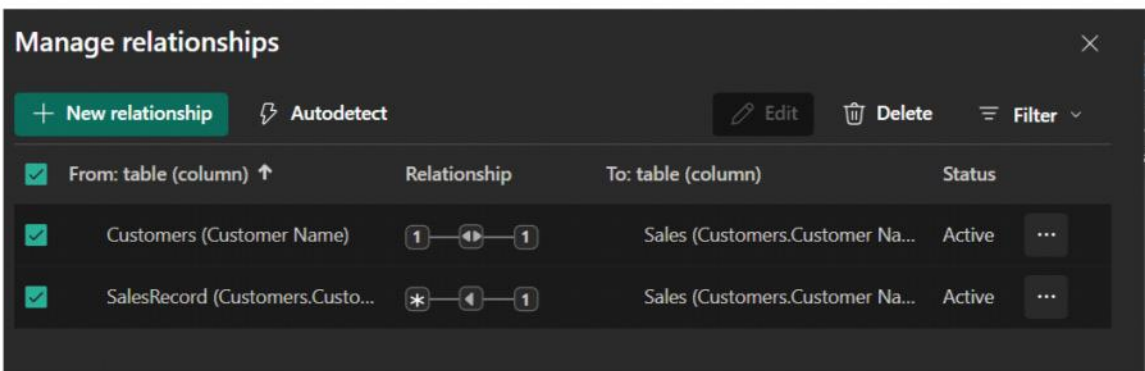
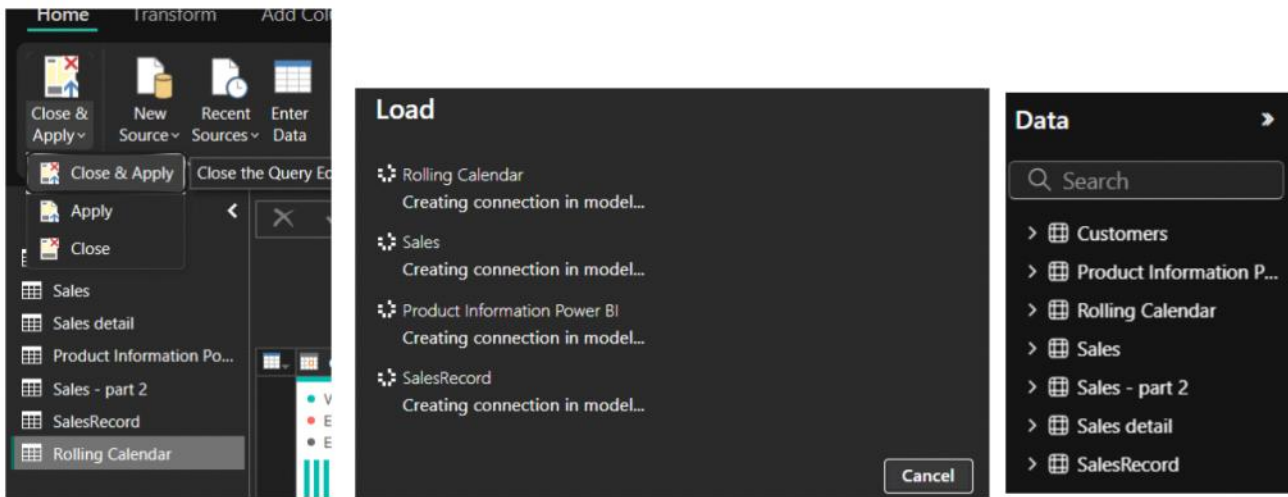
	List
1075	03-12-2025
1076	04-12-2025
1077	05-12-2025
1078	06-12-2025
1079	07-12-2025
1080	08-12-2025
1081	09-12-2025
1082	10-12-2025
1083	11-12-2025
1084	12-12-2025
1085	13-12-2025
1086	14-12-2025
1087	15-12-2025
1088	16-12-2025
1089	17-12-2025
1090	18-12-2025
1091	19-12-2025

25-12-2022

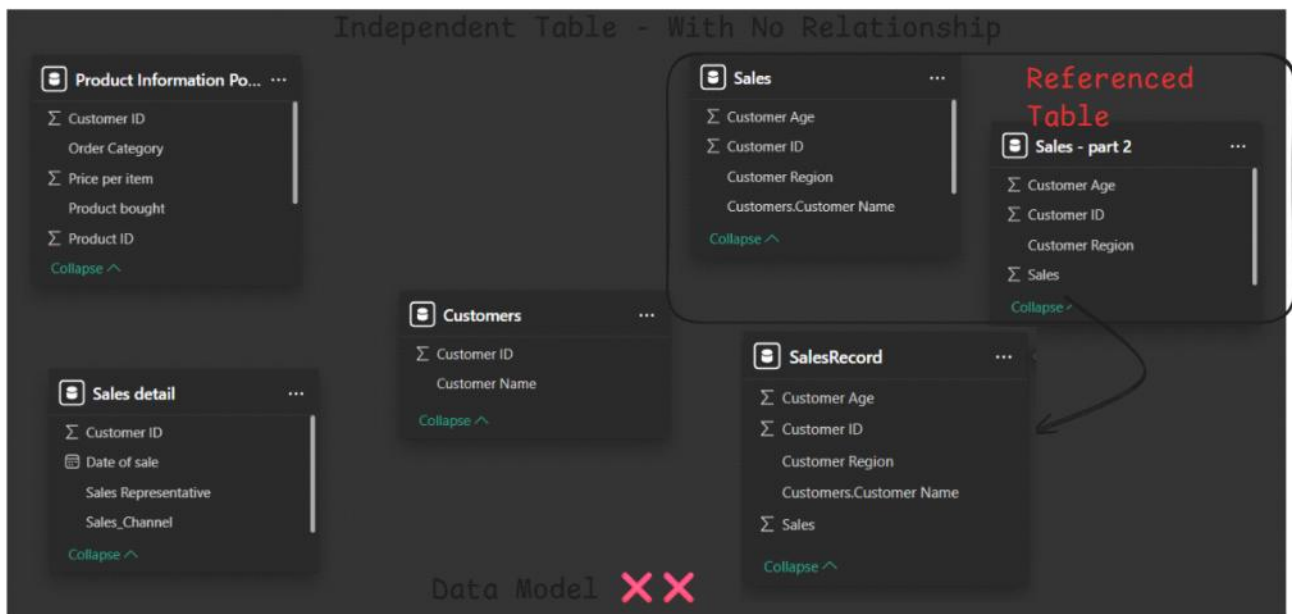
Source



Order Date	Year	Month	Month Name	Quarter	Day	Day Name
<div> <div>Valid</div> <div>Error</div> <div>Empty</div> </div> <div>100%</div> <div>0%</div> <div>0%</div>	<div> <div>Valid</div> <div>Error</div> <div>Empty</div> </div> <div>100%</div> <div>0%</div> <div>0%</div>	<div> <div>Valid</div> <div>Error</div> <div>Empty</div> </div> <div>100%</div> <div>0%</div> <div>0%</div>	<div> <div>Valid</div> <div>Error</div> <div>Empty</div> </div> <div>100%</div> <div>0%</div> <div>0%</div>	<div> <div>Valid</div> <div>Error</div> <div>Empty</div> </div> <div>100%</div> <div>0%</div> <div>0%</div>	<div> <div>Valid</div> <div>Error</div> <div>Empty</div> </div> <div>100%</div> <div>0%</div> <div>0%</div>	<div> <div>Valid</div> <div>Error</div> <div>Empty</div> </div> <div>100%</div> <div>0%</div> <div>0%</div>
1000 distinct, 1000 unique	4 distinct, 0 unique	12 distinct, 0 unique	12 distinct, 0 unique	4 distinct, 0 unique	31 distinct, 0 unique	7 distinct, 0 unique
25-12-2022	2022	12	December		4	25 Sunday
26-12-2022	2022	12	December		4	26 Monday
27-12-2022	2022	12	December		4	27 Tuesday
28-12-2022	2022	12	December		4	28 Wednesday
29-12-2022	2022	12	December		4	29 Thursday
30-12-2022	2022	12	December		4	30 Friday
31-12-2022	2022	12	December		4	31 Saturday
01-01-2023	2023	1	January		1	1 Sunday
02-01-2023	2023	1	January		1	2 Monday
03-01-2023	2023	1	January		1	3 Tuesday
04-01-2023	2023	1	January		1	4 Wednesday
05-01-2023	2023	1	January		1	5 Thursday
06-01-2023	2023	1	January		1	6 Friday
07-01-2023	2023	1	January		1	7 Saturday
08-01-2023	2023	1	January		1	8 Sunday
09-01-2023	2023	1	January		1	9 Monday



What is a Data Model?



Not Needed, So Hide them all

Customers

- Customer ID
- Customer Name
- Collapse ^

Product Information Power BI

- Customer ID
- Order Category
- Price per item
- Product bought
- Product ID
- Collapse ^

Sales detail

- Customer ID
- Date of sale
- Sales Representative
- Sales\_Channel
- Collapse ^

SalesRecord

- Customer Age
- Customer ID
- Customer Region
- Customers.Customer Name
- Sales
- Collapse ^

Sales

- Customer Age
- Customer ID
- Customer Region
- Sales
- Collapse ^

This field or table is hidden in report view. Select to make it visible.

Customer Name	Sum of Qty bought
Alberta Fabela	854
Betty scruggs	854
Debbie Orone	854
Elvin Catron	854
Era Gassner	854
Grisede Mariscal	854
Gustano Primm	854
Jacinda Moffett	854
Juan Luker	854
Karisa Oquwndo	854
Lacresha Whitty	854
Laticia Crimi	854
Loralee Widell	854
Octavio Ricci	854
Ricky Cheshire	854
Season Viers	854
Shan texeria	854
Sylvester Willbourn	854
Taylor Pogue	854
Yee Bordeau	854
Total	854

### New relationship

Select tables and columns that are related.

**From table**

Customers

Customer ID	Customer Name
1	Elvin Catron
2	Gustano Primm
3	Lacresha Whit...

**To table**

Product Information Power BI

Customer ID	Order Category	Product bought	Product ID	Qty bought
1	Bulk Order	Pen Set	1	62
2	Regular Order	Binder	2	29
3	Bulk Order	Pen Set	1	55

**Cardinality**

One to one (1:1)

**Cross-filter direction**

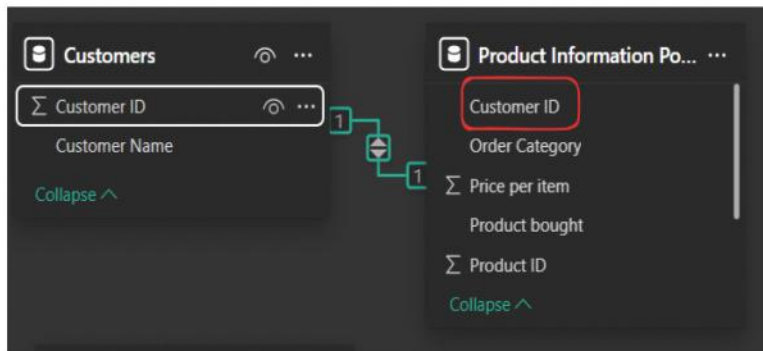
Both

☒ Make this relationship active

☐ Assume referential integrity

Save Cancel





Customer Name	Sum of Qty bought
Alberta Fabela	7
Betty scruggs	35
Debbie Orone	14
Elvin Catron	62
Era Gassner	3
Grisede Mariscal	76
Gustano Primm	29
Jacinda Moffett	42
Juan Luker	96
Karisa Oquwndo	64
Lacresha Whitty	55
Laticia Crimi	2
Loralee Widell	15
Octavio Ricci	81
Ricky Cheshire	57
Season Viers	11
Shan texeria	94
Sylvester Willbourn	28
Taylor Pogue	16
Yee Bordeau	67
<b>Total</b>	<b>854</b>

