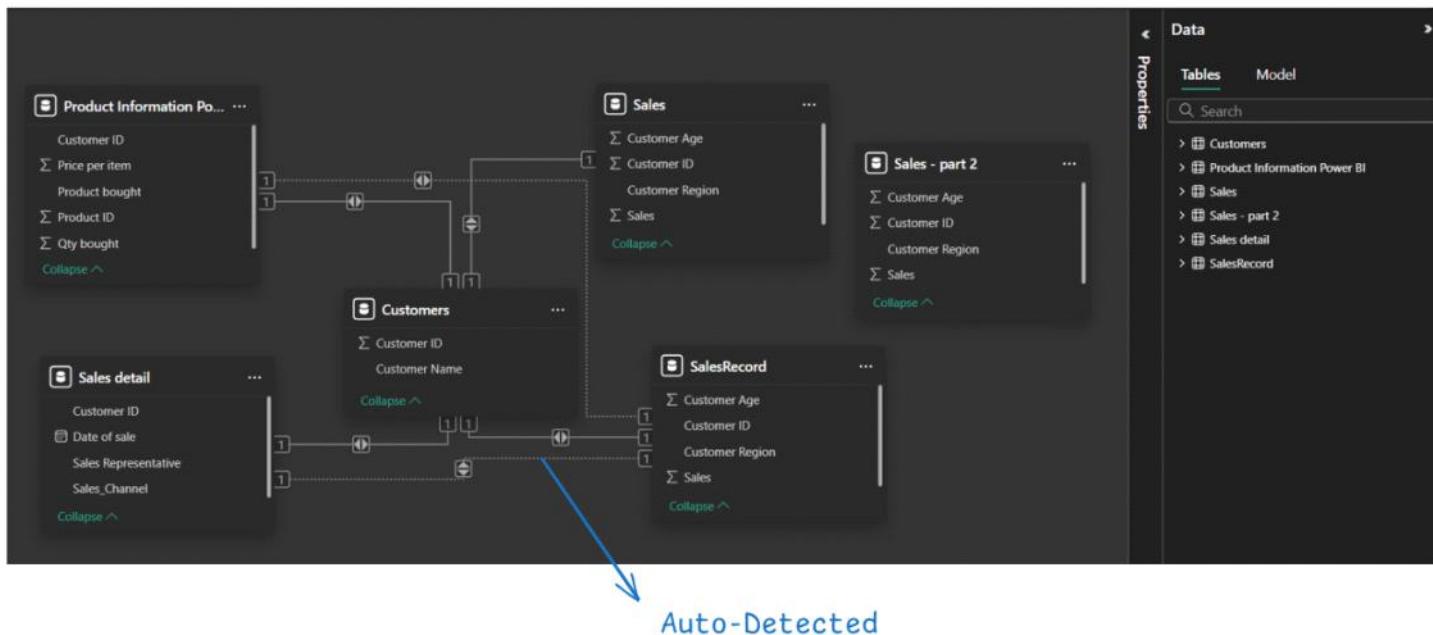
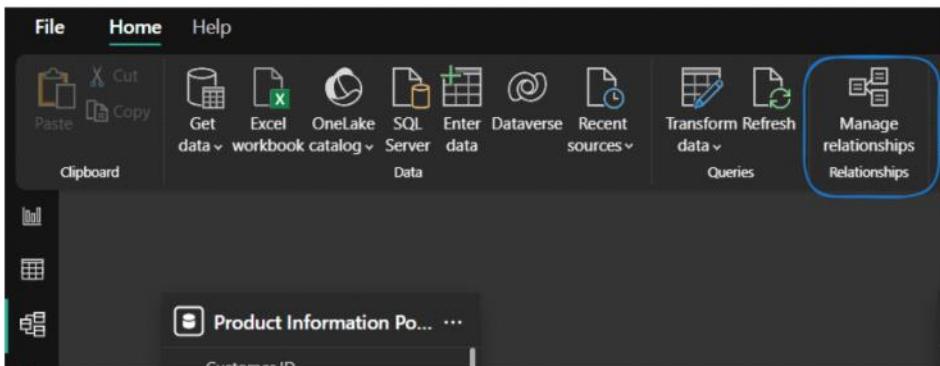


Advanced Power Query and Data Modelling



Auto-Detected



Manage relationships				
+ New relationship		Autodetect	Edit	Delete
From: table (column)	Relationship	To: table (column)	Status	
Customers (Customer ID)	1 → 1	SalesRecord (Customer ID)	Active	...
Product Information Power BI ...	1 → 1	Customers (Customer ID)	Active	...
Product Information Power BI ...	1 → 1	SalesRecord (Customer ID)	Inactive	...
Sales (Customer ID)	1 → 1	Customers (Customer ID)	Active	...
Sales detail (Customer ID)	1 → 1	Customers (Customer ID)	Active	...
Sales detail (Customer ID)	1 → 1	SalesRecord (Customer ID)	Inactive	...

Qty bought	Price per item
Valid	100%
Error	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

Home Transform **Add Column** View Tools Help

Column From Examples Custom Column Invoke Custom Function Conditional Column Index Column Duplicate Column Format Extract Parse Statistics Add Standard Scientific Trigonometry Rounding Date Time Duration From Date & Time

Queries [6]

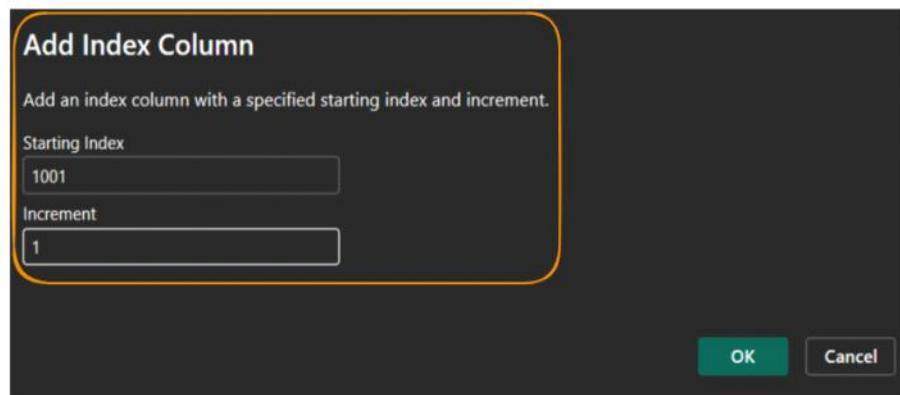
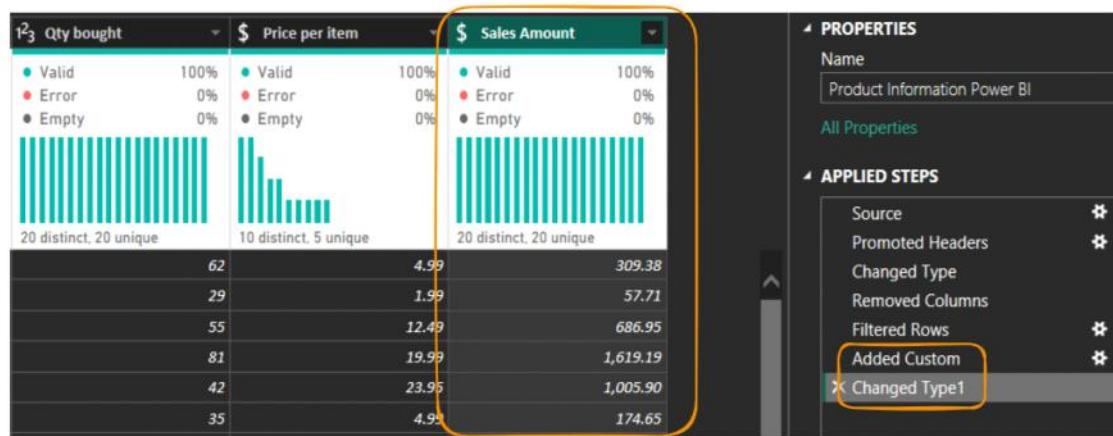
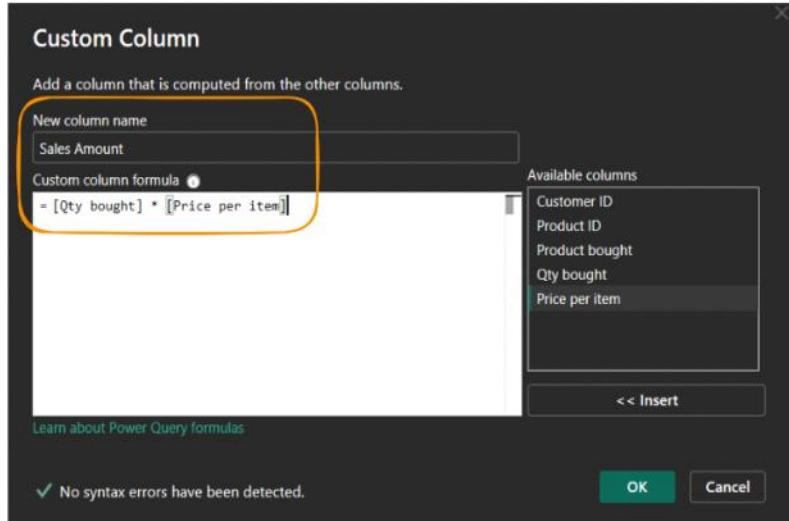
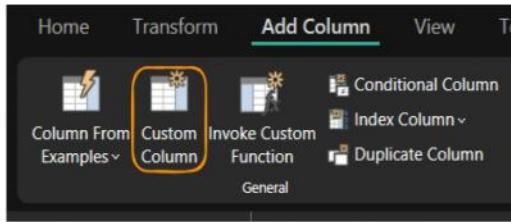
Customer ID Product ID Product b

Multiply Create a new column that multiplies the values in the

Customer ID	Product ID	Product b
1	1	Pen Set
2	2	Binder
3	3	Pen Set
4	4	Binder
5	5	Pen Set
6	6	Pencil

Qty bought Price per item Sales Amount

Qty bought	Price per item	Sales Amount
Valid	100%	100%
Error	0%	0%
Empty	0%	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



1²₃ Index 1²₃ Index.1 1²₃ 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
0			
1			1002
2		2	
3		3	1003
4		4	1004
5		5	1005
6		6	1006
7		7	1007
8		8	1008
9		9	1009
10		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: Order Category

If: Qty bought is greater than or equal to 50 Then: Bulk Order

Else If: Qty bought is greater than or equal to 30 Then: Medium Order

Else: Regular Order

OK Cancel

1²₃ Qty bought \$ Price per item \$ Sales Amount ABC 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

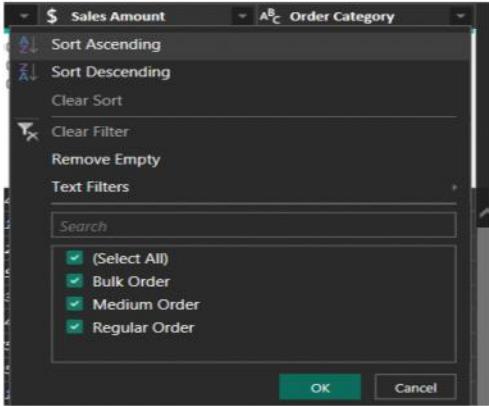
	62	4.99	309.38	Bulk Order
	29	1.99	57.71	Regular Order
	55	12.49	686.95	Bulk Order
	81	19.99	1,619.19	Bulk Order
	42	23.95	1,005.90	Medium Order
	35	4.99	174.65	Medium Order
	3	275.00	825.00	Regular Order
	2	125.00	250.00	Regular Order

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

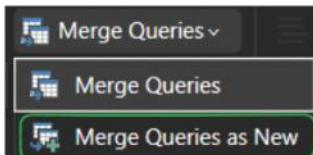


Primary Key [Unique + Not Null]

	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	Juan Luker	
19	Shan texeria	
20	Yee Bordeau	

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	



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)

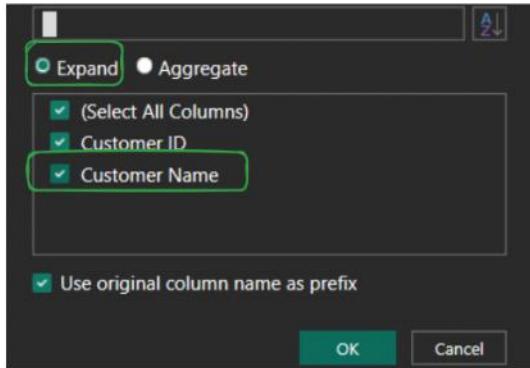
Use fuzzy matching to perform the merge

Fuzzy matching options

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

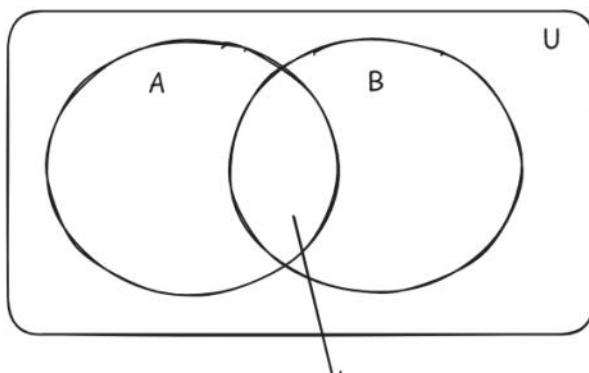
OK Cancel

T ₃ Customer ID	A ₃ Customer Region	T ₃ Customer Age	\$ Sales	Customers
● Valid 100%	● Valid 100%	● Valid 100%	● Valid 100%	● Valid 100%
● Error 0%	● Error 0%	● Error 0%	● Error 0%	● Error 0%
● Empty 0%	● Empty 0%	● Empty 0%	● Empty 0%	● Empty 0%
20 distinct, 20 unique	4 distinct, 0 unique	16 distinct, 12 unique	20 distinct, 20 unique	Table
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	575.30	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

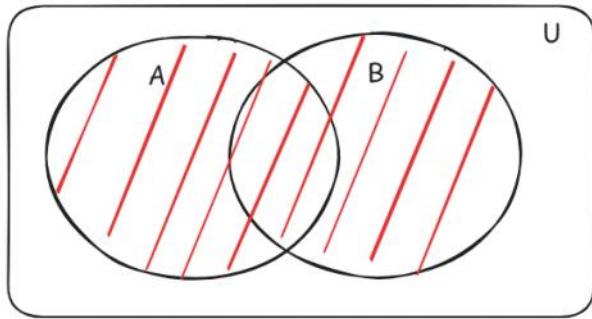


Customer ID	Customer Region	Customer Age	Sales	Customers.Customer Name
Valid 100%	Valid 100%	Valid 100%	Valid 100%	Valid 100%
Error 0%	Error 0%	Error 0%	Error 0%	Error 0%
Empty 0%	Empty 0%	Empty 0%	Empty 0%	Empty 0%
20 distinct, 20 unique	4 distinct, 0 unique	16 distinct, 12 unique	20 distinct, 20 unique	20 distinct, 20 unique
1 North		49	309.38	Elvin Catron
2 North		10	57.71	Gustano Primim
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

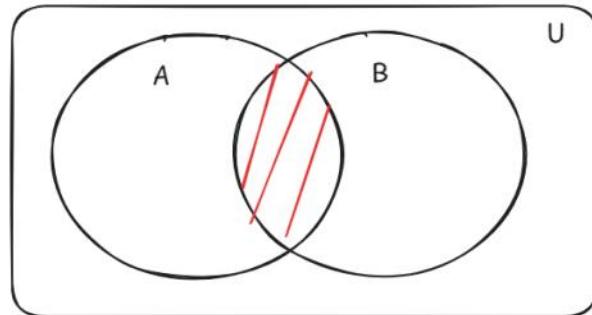
Joins



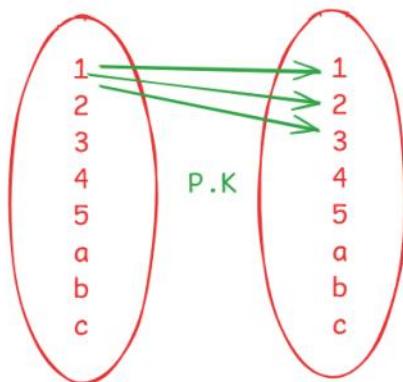
Full JOIN



Inner Join

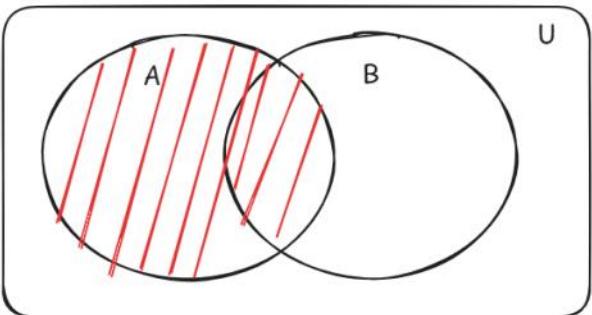


TableA TableB



1:1 Cardinality

Left Join



Customer

A
B
C
D
E
F

P.K

1:M Cardinality

Sales

A	-	100
B	-	50
A	-	120
B	-	50
C	-	10
A	-	50

F.K

A - 270 [Sum]

B - 100 [Sum]

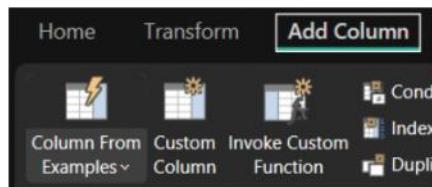
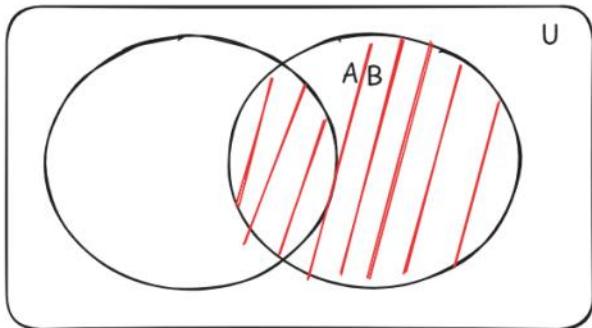
C - 10 [Sum]

D - null

E - null

F - null

Right Join



Rolling Calendar → Invoke Custom Functions

A screenshot of the Power BI desktop application. The top navigation bar shows 'Home', 'Transform', and 'Add Column' (which is currently selected). The main area shows a query editor with a table named 'Table.B'. A date column 'Customer ID' is selected, and its formula is displayed as '= #date(2024,1,1)'. The formula bar shows the result as '01-01-2024'. An arrow points from the formula to the text 'YYYY-MM-DD'. The bottom right corner shows the 'APPLIED STEPS' pane with 'Source' and 'Custom1' listed.

A screenshot of the Power BI Query Editor. The formula bar shows the function 'List.Dates(start as date, count as number, step as duration)'. Below the formula, the description reads: 'Generates a list of date values given an initial value, count, and incremental duration value.' At the bottom of the editor, the code '= List.Dates()' is visible.

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

The screenshot shows the Power Query Editor interface. At the top, there is a formula bar with the following M code:

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

Below the formula bar is a preview pane titled "List -> Column [Table]". It displays a table with two columns: "List" and "Source". The "List" column contains dates from 03-12-2025 to 19-12-2025. The "Source" column is empty. The last row, 19-12-2025, is highlighted with a dark background.



The screenshot shows the Power Query Editor interface. At the top, there is a formula bar with the following M code:

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

Below the formula bar is a preview pane. In the top right corner of the preview pane, there is a small box containing the date "25-12-2022" and the word "Source". The preview pane displays a table with two columns: "List" and "Source". The "List" column contains dates from 03-12-2025 to 19-12-2025. The "Source" column contains the value "25-12-2022" for all rows. The last row, 19-12-2025, is highlighted with a dark background.

Trigonometry - Rounding - Information -

Date Time Duration Text Analytics Vision Azure Machine Learning

Age

Date Only
Parse
Year
Start of Year
End of Year
Month
Start of Month
End of Month
Days in Month
Name of Month
Quarter of Year
Start of Quarter
End of Quarter
Week of Year
Week of Month
Start of Week
End of Week
Day
Day of Week
Day of Year
Start of Day
End of Day
Name of Day

APPLIED STEPS

- Source
- Custom1
- Converted to Table
- Changed Type
- Renamed Columns
- Inserted Year
- Inserted Month
- Inserted Month Name
- Inserted Quarter
- Inserted Day
- Inserted Day Name**

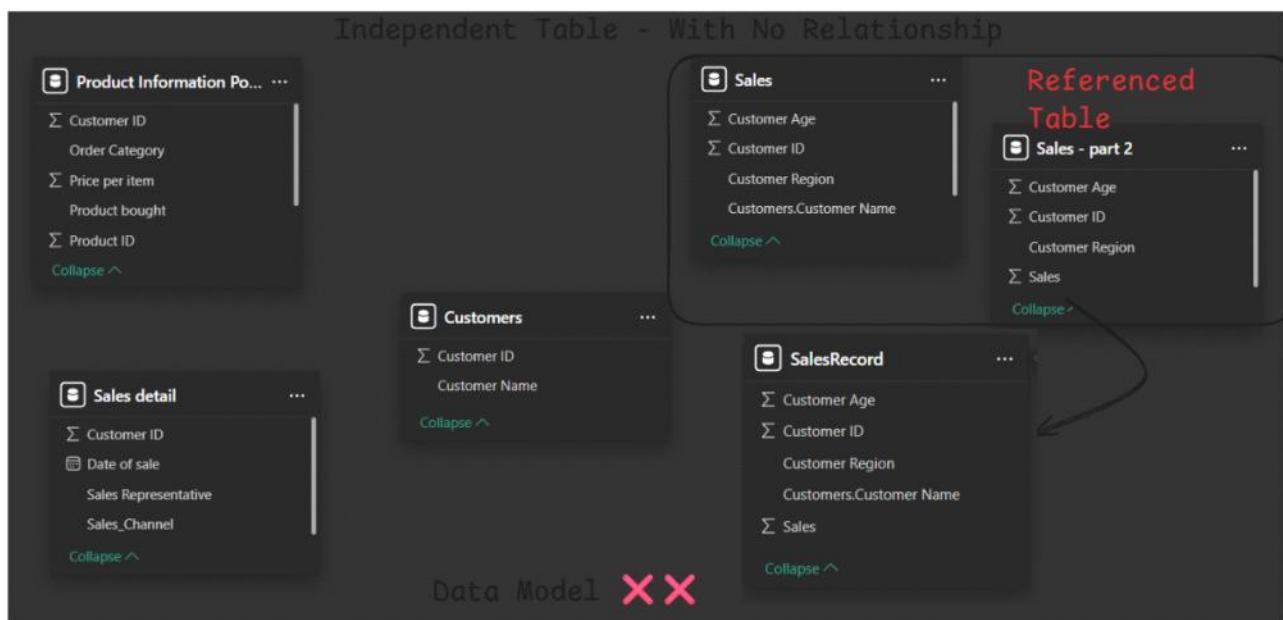
Order Date	Year	Month	Month Name	Quarter	Day	Day Name
25-12-2022	2022	12 December	December	4	25	Sunday
26-12-2022	2022	12 December	December	4	26	Monday
27-12-2022	2022	12 December	December	4	27	Tuesday
28-12-2022	2022	12 December	December	4	28	Wednesday
29-12-2022	2022	12 December	December	4	29	Thursday
30-12-2022	2022	12 December	December	4	30	Friday
31-12-2022	2022	12 December	December	4	31	Saturday
01-01-2023	2023	1 January	January	1	1	Sunday
02-01-2023	2023	1 January	January	1	2	Monday
03-01-2023	2023	1 January	January	1	3	Tuesday
04-01-2023	2023	1 January	January	1	4	Wednesday
05-01-2023	2023	1 January	January	1	5	Thursday
06-01-2023	2023	1 January	January	1	6	Friday
07-01-2023	2023	1 January	January	1	7	Saturday
08-01-2023	2023	1 January	January	1	8	Sunday
09-01-2023	2023	1 January	January	1	9	Monday

The screenshot shows the Power BI Data Load interface. On the left, there's a navigation bar with options like Home, Transform, Add Column, Close & Apply, New Source, Recent Sources, Enter Data, and Close. A context menu is open over a table named "Rolling Calendar". The main area is titled "Load" and lists several tables with their status: "Rolling Calendar" (Creating connection in model...), "Sales" (Creating connection in model...), "Product Information Power BI" (Creating connection in model...), and "SalesRecord" (Creating connection in model...). To the right is a "Data" pane containing a search bar and a list of available datasets: Customers, Product Information P..., Rolling Calendar, Sales, Sales - part 2, Sales detail, and SalesRecord.

This screenshot shows the "Manage relationships" dialog in Power BI. It has a header with "New relationship", "Autodetect", "Edit", "Delete", and "Filter" buttons. The main table lists relationships between "Customers" and "Sales" (1 to 1) and between "SalesRecord" and "Sales" (1 to many). The "Status" column indicates both are "Active".

From: table (column)	Relationship	To: table (column)	Status
Customers (Customer Name)	1 → 1	Sales (Customers.Customer Na...)	Active
SalesRecord (Customers.Custo...)	* → 1	Sales (Customers.Customer Na...)	Active

What is a Data Model?



Not Needed, So Hide them all

The screenshot shows the Power BI Data view with several tables listed:

- Customers**: Customer ID, Customer Name
- Product Information Po...**: Customer ID, Order Category, Price per item, Product bought, Product ID
- Sales detail**: Customer ID, Date of sale, Sales Representative, Sales_Channel
- SalesRecord**: Customer Age, Customer ID, Customer Region, Customers.Customer Name, Sales
- Sales - part 2**: Customer Age, Customer ID, Customer Region

A red box highlights the "Sales - part 2" section, which contains the Sales table. A callout bubble above it says "Not Needed, So Hide them all".

New relationship

Select tables and columns that are related.

From table: Customers

Customer ID	Customer Name
1	Elvin Catron
2	Gustano Primm
3	Lacresha Whitty

To table: Product Information Power BI

Customer ID	Order Category	Product bou...	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

Customer Name	Sum of Qty bought
Alberta Fabela	854
Betty scruggs	854
Debbie Ornone	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

The screenshot shows a data visualization interface with three main sections:

- Left Panel:** A "Customers" table with columns: Customer ID (summarized) and Customer Name. A "Sales detail" section is collapsed.
- Middle Panel:** A "Product Information Po..." table with columns: Customer ID (highlighted), Order Category, Price per item (summarized), Product bought, and Product ID (summarized). A "SalesRecord" section is collapsed.
- Right Panel:** A table titled "Customer Name Sum of Qty bought" listing 20 customers and their total purchases. The total is 854.

