

Power Query Deep Dive

Venkata Reddy Konasani

Contents

- Power Query
- M-language
- Useful commands in M-Language
- Data model

Mastering Power BI

- If you want to master Power BI, there are three aspects that we need to be very good at
 - Power Query M Language
 - DAX
 - Story telling.
- The storytelling part involves creativity, but M Language and DAX can be mastered quickly.
- Lets take one more case study to see in-depth concepts of M-Language and DAX

Case Study : E-commerce Product Sales Analysis

E-commerce Product Sales Analysis

Step-1 : Understand the Problem Statement

Problem Statement

- Analyze Sales and Profits in various scenarios.
- Analyse Ecommerce data and find the hidden patterns that will cause high or low sales in a category
- Analyze the profits and show how profit varies in different segments


E-commerce Product Sales Analysis


Step-2 : Load the Data and get the basic details


Load the Data and get the basic details


Navigator


Display Options ▾


 Ecom_Product_Sales_Data_v1.xlsx [14]


☐  Customer_Data


☐  Location_Data


☐  Product_Data


☐  Sales_2015


☐  Sales_2016


☐  Sales_2017


☐  Salespeople_Data


☐  2018 Sales


☐  2019 Sales

☐  2020 Sales

☐  Customer_info

☐  Geographical_Data

☐  Product_info

☐  Sales_Rep_info








No items selected for preview

Load




Transform Data

Cancel

Data Set

- >  2018 Sales
- >  2019 Sales
- >  2020 Sales
- >  Customer_info
- >  Geographical_Data
- >  Product_info
- >  Sales_Rep_info

Sales Table

  	<div> <div>✕</div> <div>✓</div> </div>									
	Order ID	Product ID	Location ID	Sales Person ID	Customer ID	Purchase Date	Quantity	Price	Column9	Column10
	AX10014	ENX2079	A152	EMP1041	C1073	14 April 2020	1	1725		
	AX10027	ENX2062	A126	EMP1001	C1256	27 May 2020	1	2464		
	AX10032	ENX2083	A156	EMP1025	C1342	06 April 2020	1	2141		
	AX10042	ENX2100	A147	EMP1019	C1267	04 January 2020	1	799		
	AX10061	ENX2041	A101	EMP1041	C1168	25 May 2020	1	1380		
	AX10070	ENX2046	A159	EMP1040	C1147	18 February 2020	1	2410		
	AX10074	ENX2038	A121	EMP1042	C1732	12 April 2020	1	392		
	AX10086	ENX2054	A130	EMP1023	C1526	16 March 2020	1	127		
	AX10096	ENX2005	A133	EMP1037	C1791	10 March 2020	1	684		
	AX10098	ENX2098	A119	EMP1022	C1467	24 May 2020	1	1178		
	AX10133	ENX2045	A104	EMP1038	C1350	15 February 2020	1	556		
	AX10155	ENX2027	A111	EMP1024	C1176	25 January 2020	1	2497		
	AX10208	ENX2054	A132	EMP1029	C1194	16 January 2020	1	127		
	AX10230	ENX2078	A115	EMP1005	C1455	22 January 2020	1	1798		
	AX10232	ENX2081	A143	EMP1035	C1572	21 April 2020	1	1566		

Geographical table

Location ID	Name	County	State Code	State	Type	Latitude	Longitude	Area Code	Population	Households	Median Income	Land Area	Water Area	Time Zone
A100	Anaheim	Orange County	CA	California	City	33.83529	-117.9145	657	350742	99670	60752	129438076	2457142	America/Lo
A101	Antioch	Contra Costa County	CA	California	City	38.00492	-121.80579	925	110542	33718	64329	76173197	1842711	America/Lo
A102	Bakersfield	Kern County	CA	California	City	35.37329	-119.01871	661	373640	112439	57095	385366784	3809676	America/Lo
A103	Berkeley	Alameda County	CA	California	City	37.87159	-122.27275	510	120972	45917	66237	27106077	18715614	America/Lo
A104	Burbank	Los Angeles County	CA	California	City	34.18084	-118.30897	818	105319	41361	66076	44947219	94286	America/Lo
A105	Carlsbad	San Diego County	CA	California	City	33.15809	-117.35059	760	113453	42791	90597	97713477	3595655	America/Lo
A106	Chula Vista	San Diego County	CA	California	City	32.64	-117.08417	619	265757	78066	65185	128544440	6380135	America/Lo
A107	Clovis	Fresno County	CA	California	City	36.82523	-119.70292	559	104180	34512	62666	62693928	0	America/Lo
A108	Concord	Contra Costa County	CA	California	City	37.97798	-122.03107	925	128667	45409	68318	79108534	0	America/Lo
A109	Corona	Riverside County	CA	California	City	33.87529	-117.56644	951	164226	48156	74149	102233537	211897	America/Lo
A110	Costa Mesa	Orange County	CA	California	City	33.64113	-117.91867	949	113204	40908	66459	40723584	211253	America/Lo
A111	Daly City	San Mateo County	CA	California	City	37.70583	-122.46194	650	106562	31137	74449	19788422	0	America/Lo
A112	Downey	Los Angeles County	CA	California	City	33.94001	-118.13257	562	114219	32738	62897	32136795	414376	America/Lo

Fields

- > 2018 Sales
- > 2019 Sales
- > 2020 Sales
- > Customer_info
- > **Geographical_Data**
- > Product_info
- > Sales_Rep_info

Customer Information

✕	✓	
Customer ID	Customer Name	Age
C1000	Jesse Evans	34
C1001	Victor Ramos	35
C1002	Mark Montgomery	45
C1003	Dennis Morris	31
C1004	Gregory Simmons	35
C1005	Jeremy Vasquez	30
C1006	Anthony Simpson	39
C1007	Ernest Rivera	32
C1008	Victor Martinez	47
C1009	Bobby Burton	43
C1010	Bruce Porter	43
C1011	Nicholas Simmons	44
C1012	Bruce Butler	36
C1013	Raymond Alexander	49
C1014	Jason Duncan	44
C1015	Phillip Peters	41

E-commerce Product Sales Analysis

Step-3: Transform the data

Transformations

- Transform the data

Double click to
rename

Remove columns- Sales

Remove the
columns

Queries [7]




- 2018 Sales
- 2019 Sales
- 2020 Sales
- Customer_info
- Geographical_Data
- Product_info
- Sales_Rep_info

fx = Table.TransformColumnTypes("#Promoted Headers",{{"Order ID", type text}, {"Product ID", type text}, {"Location ID", type text}, {"Sales

ID	Customer ID	Purchase Date	Quantity	Price	Column9	Column10
1	C1078	23-03-2020	4	1848	null	null
2	C1073	14-04-2020	1	1725	null	null
3	C1256	27-05-2020	1	2464	null	null
4	C1342	06-04-2020	1	2141	null	null
5	C1267	04-01-2020	1	799	null	null
6	C1168	25-05-2020	1	1380	null	null
7	C1147	18-02-2020	1	2410	null	null
8	C1755	29-02-2020	3	368	null	null
9	C1732	12-04-2020	1	392	null	null

Appending the tables

Home > Append Queries

	2018 Sales
	2019 Sales
	2020 Sales

Append

Concatenate rows from three or more tables into a single table.

☐ Two tables ☒ Three or more tables

Available tables

2019 Sales (Current)
2018 Sales
2020 Sales
Customer_info
Geographical_Data
Product_info
Sales_Rep_info

Add >>


Tables to append

2019 Sales (Current)

OK

Cancel

- Duplicated Column
- Uppercased Text
- Split Column by Position
- Changed Type1
- Removed Columns1
- Renamed Columns



Follow these steps

See all the steps in power query editor

- Home >> Advanced Editor

Geographical_Data

Display Options ▾



```
let
    Source = Excel.Workbook(File.Contents("D:\Google Drive\Training\Job_Courses\PowerBI\Class_Material\PowerBI_Sessions_Data\Ecom_Product_Sale
    Geographical_Data_Sheet = Source{[Item="Geographical_Data",Kind="Sheet"]}[Data],
    #"Promoted Headers" = Table.PromoteHeaders(Geographical_Data_Sheet, [PromoteAllScalars=true]),
    #"Changed Type" = Table.TransformColumnTypes(#"Promoted Headers",{{"Location ID", type text}, {"Name", type text}, {"County", type text},
    #"Removed Columns" = Table.RemoveColumns(#"Changed Type",{"Area Code", "Land Area", "Water Area", "Time Zone"}),
    #"Duplicated Column" = Table.DuplicateColumn(#"Removed Columns", "State", "State - Copy"),
    #"Uppercased Text" = Table.TransformColumns(#"Duplicated Column",{{"State - Copy", Text.Upper, type text}}),
    #"Split Column by Position" = Table.SplitColumn(#"Uppercased Text", "State - Copy", Splitter.SplitTextByPositions({0, 4}, false), {"State
    #"Changed Type1" = Table.TransformColumnTypes(#"Split Column by Position",{{"State - Copy.1", type text}, {"State - Copy.2", type text}}),
    #"Removed Columns1" = Table.RemoveColumns(#"Changed Type1",{"State - Copy.2"}),
    #"Renamed Columns" = Table.RenameColumns(#"Removed Columns1",{{"State - Copy.1", "State_Code1"}}),
    #"Reordered Columns" = Table.ReorderColumns(#"Renamed Columns",{"Location ID", "Name", "County", "State Code", "State", "State_Code1", "Ty
in
    #"Reordered Columns"
```












Create a new table with Just dates

- This table will be useful for us later on
- This standard table will be helpful in future visuals and dashboards
- Most of the business analysts create this table
- Copy the date table creation M-code from Power BI Date Table code.txt file >> Home >> Advanced Editor >> Enter
- Enter the dates from 01/01/2018 to 31/12/2021
- Rename the final table - Dates

Rename Columns in the Dates Table

```
= Table.RenameColumns(Source,{{"MonthName", "Month Name"},  
{"MonthInCalendar", "Month and Year"},  
{"QuarterInCalendar", "Quarter and Year"}})
```

Group the tables

- ▲  Project_Data [6]
 -  Sales
 -  Customer_info
 -  Geographical_Data
 -  Product_info
 -  Sales_Rep_info
 -  Dates
- ▲  Other Queries [3]
 -  2018 Sales
 -  2020 Sales
 -  *Dates_Query*

Bringing Data From External Sources




[All](#)
[News](#)
[Images](#)
[Videos](#)
[Books](#)
[More](#)
[Tools](#)

About 11,50,00,000 results (0.57 seconds) « [Add Grepper Answer \(a\)](#) | [Add Writeup](#)

<https://www.california-demographics.com>

California Demographics - Get Current Census Data for ... ✓

The **California population** is 39,237,836 people according to the US Census Bureau's 2021 **Population** Estimates Program. The **California** median household income in ...

You've visited this page 4 times. Last visit: 26/9/22

California Cities by Population ✓

Los Angeles - San Diego - Demographics Reports - Fresno

Is Boulevard the best ... ✓

Need Boulevard demographics? Get current population, race ...

Industry ✓

The largest Industry racial/ethnic groups are Hispanic (61.4 ...

95110 ✓

Need 95110 demographics? Get current population, race, age ...

[More results from california-demographics.com »](#)

California Cities by Population

1	Los Angeles	3,849,297
2	San Diego	1,381,611
3	San Jose	983,489
4	San Francisco	815,201
5	Fresno	544,510
6	Sacramento	525,041
7	Long Beach	456,062
8	Oakland	433,823
9	Bakersfield	407,615
10	Anaheim	345,940



[See all California Cities by Population>>](#)

Bringing Data From External Sources

California Counties by Population

1	Los Angeles County	9,829,544
2	San Diego County	3,286,069
3	Orange County	3,167,809
4	Riverside County	2,458,395
5	San Bernardino County	2,194,710
6	Santa Clara County	1,885,508
7	Alameda County	1,648,556
8	Sacramento County	1,588,921
9	Contra Costa County	1,161,413
10	Fresno County	1,013,581

 [See all California Counties by Population>>](#)

California Cities by Population

1	Los Angeles	3,849,297
2	San Diego	1,381,611
3	San Jose	983,489
4	San Francisco	815,201
5	Fresno	544,510
6	Sacramento	525,041
7	Long Beach	456,062
8	Oakland	433,823
9	Bakersfield	407,615
10	Anaheim	345,940

 [See all California Cities by Population>>](#)

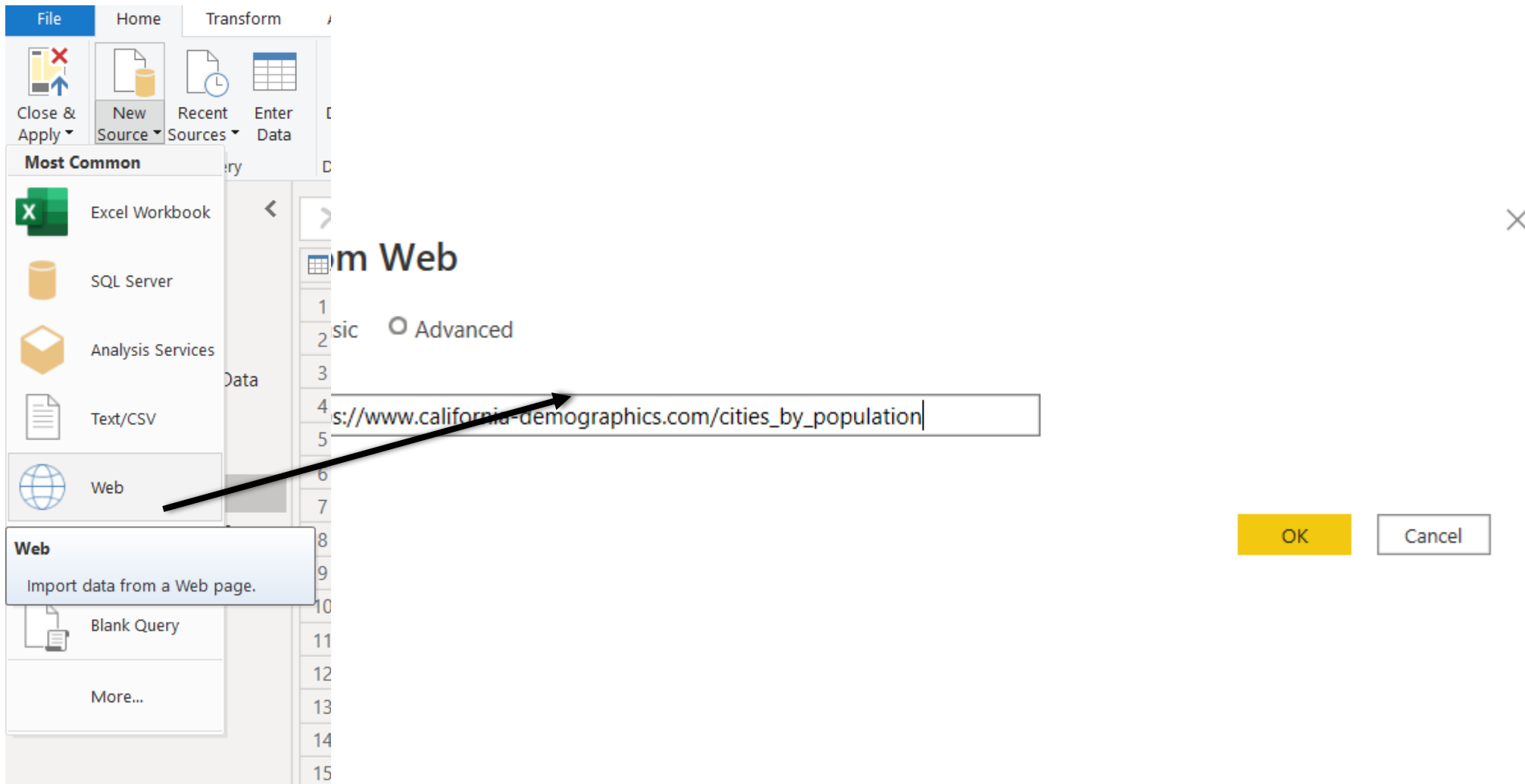
California Zip Codes by Population

1	90011	110,750
2	90650	104,524
3	91331	103,683
4	90201	100,512
5	90044	99,980
6	92335	99,242
7	92336	98,731
8	94565	97,249
9	90250	95,115
10	90805	95,094

 [See all California Zip Codes by Population>>](#)

Click on cities
population

Copy the data from website



The screenshot shows the Power BI Desktop interface. The 'Transform' tab is active, and the 'New Source' button is clicked, opening the 'Most Common' list. The 'Web' option is selected, which opens the 'Web' dialog box. The dialog box has a 'Basic' tab selected and a text input field containing the URL 'https://www.california-demographics.com/cities_by_population'. The 'OK' button is highlighted in yellow.

File Home Transform

Close & Apply New Source Recent Sources Enter Data

Most Common

- Excel Workbook
- SQL Server
- Analysis Services
- Text/CSV
- Web

Web

Import data from a Web page.

Blank Query

More...

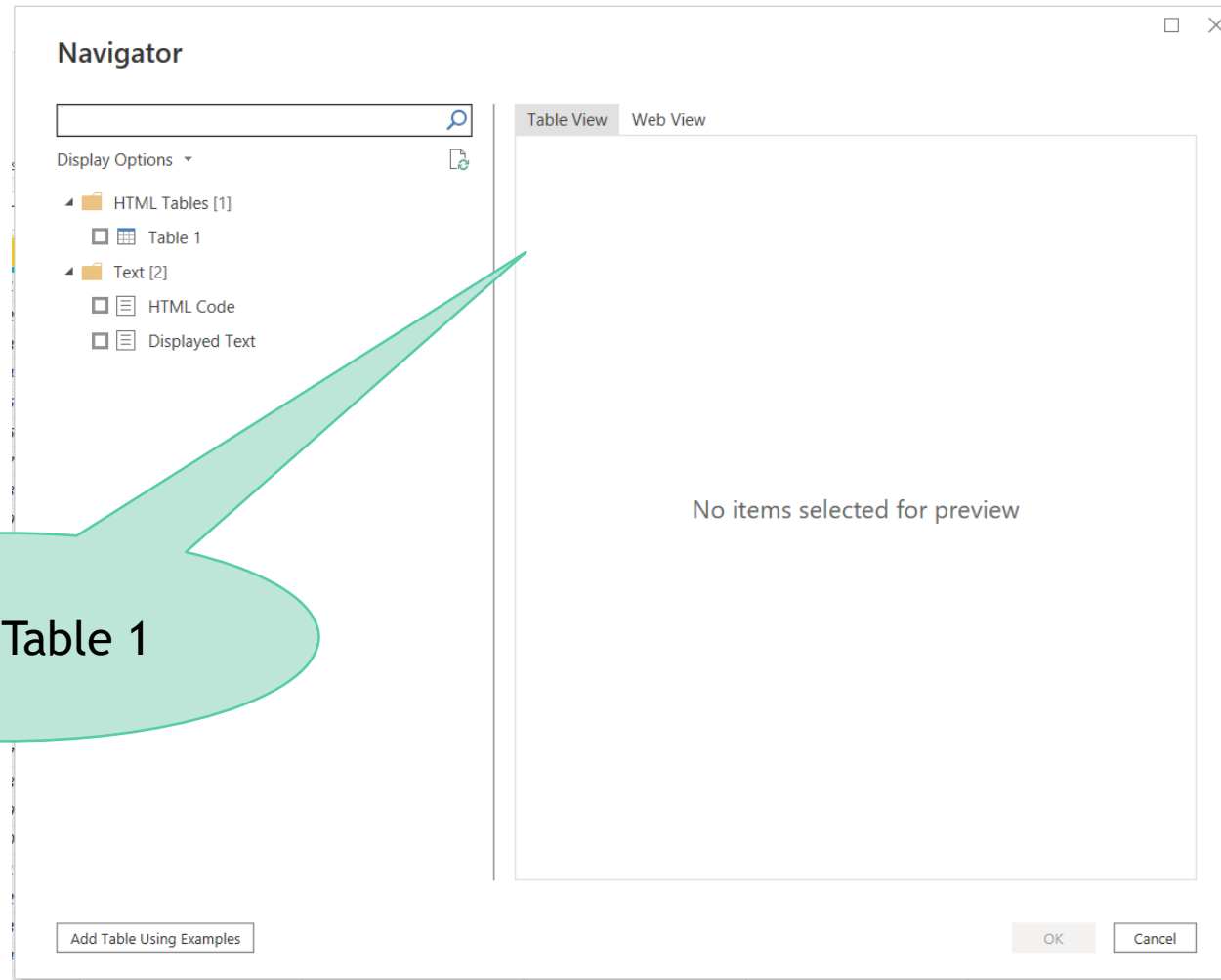
Web

Basic Advanced

https://www.california-demographics.com/cities_by_population

OK Cancel

Copy the data from website



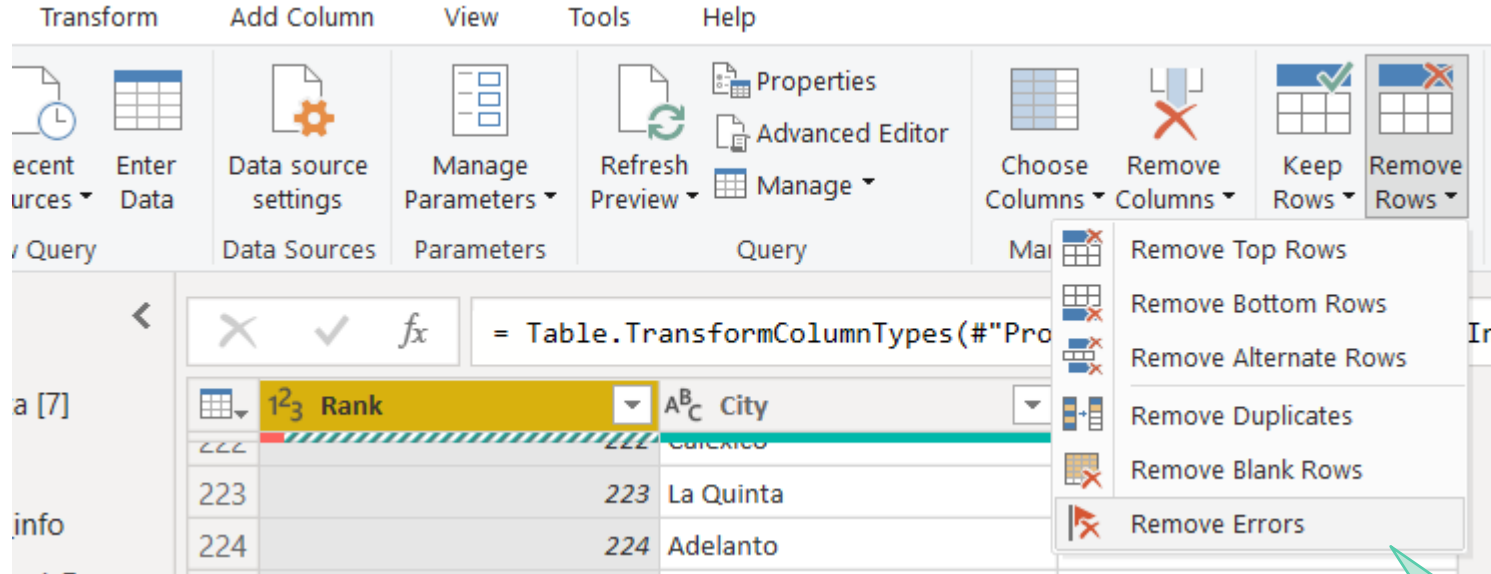
Copy the data from website

Customer_info	Rank	City	Population
1	1	Los Angeles	3841982
2	2	San Diego	1386932
3	3	San Jose	1013241
4	4	San Francisco	871648
5	5	Fresno	544510
6	6	Sacramento	525041
7	7	Long Beach	456062
8	8	Oakland	433823
9	9	Bakersfield	407615
10	10	Anaheim	345940
11	11	Stockton	322120
12	12	Riverside	317261
13	13	Santa Ana	309441
14	14	Irvine	309031
15	15	Chula Vista	277220
16	16	Fremont	227514
17	17	Santa Clarita	224593
18	18	San Bernardino	222203
19	19	Modesto	218771
20	20	Moreno Valley	211600
21	21	Fontana	210761

Rename and keep
it in the data
group

Also remove errors
using remove rows
option

Copy the data from website

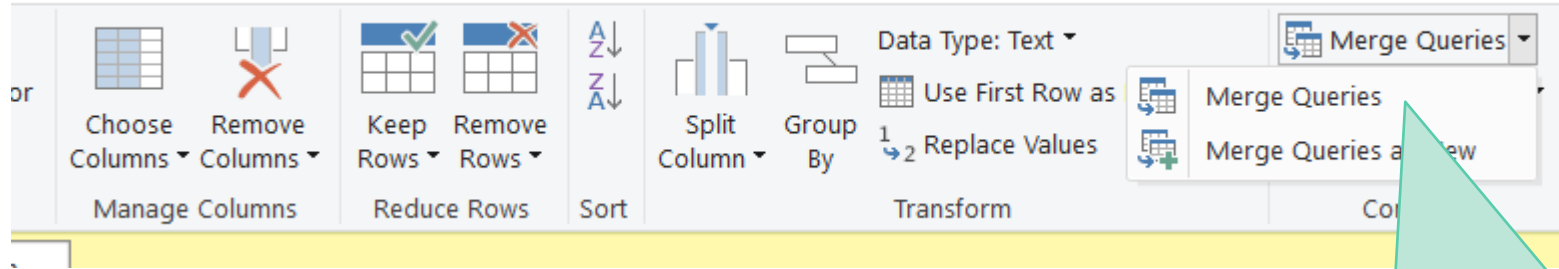


The screenshot shows the DV Analytics software interface. The top menu bar includes 'Transform', 'Add Column', 'View', 'Tools', and 'Help'. Below the menu bar, there are several toolbars. The 'Remove Rows' dropdown menu is open, showing options: 'Remove Top Rows', 'Remove Bottom Rows', 'Remove Alternate Rows', 'Remove Duplicates', 'Remove Blank Rows', and 'Remove Errors'. The 'Remove Errors' option is highlighted. In the background, a data table is visible with columns 'Rank' and 'City'. The 'Rank' column has values 223 and 224, and the 'City' column has values 'La Quinta' and 'Adelanto'.

Rank	City
223	La Quinta
224	Adelanto

Select the column >>
remove rows

Merge Queries



We would like to merge geographical data.


Select Geographical table >> Home >> Merge Queries

Merge Queries

×

Merge

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

Geographical_Data 

Location ID	Name	County	State Code	State	Type	Latitude	Longitude	Area Code
A100	Anaheim	Orange County	CA	California	City	33.83529	-117.9145	6
A101	Antioch	Contra Costa County	CA	California	City	38.00492	-121.80579	9
A102	Bakersfield	Kern County	CA	California	City	35.37329	-119.01871	6
A103	Berkeley	Alameda County	CA	California	City	37.87159	-122.27275	5

<

>

▼

2019 Sales

2020 Sales

CA Population data

Customer_info

Dates_table

Geographical_Data (Current)

Product_info

Sales

Sales_Rep_info

Left Outer (all from first, matching from second)

▼

preview is available

☐ Use fuzzy matching to perform the merge

> Fuzzy matching options

OK

Cancel

Merge Queries

Merge

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

Geographical_Data

Location ID	Name	County	State Code	State	State_Code1	Type	Latitude	Longitude
A100	Anaheim	Orange County	CA	California	CALI	City	33.83529	-117.744
A101	Antioch	Contra Costa County	CA	California	CALI	City	38.00492	-121.806
A102	Bakersfield	Kern County	CA	California	CALI	City	35.37329	-119.018
A103	Berkeley	Alameda County	CA	California	CALI	City	37.87159	-122.267

CA Population

Rank	City	Population
1	Los Angeles	3849297
2	San Diego	1381611
3	San Jose	983489
4	San Francisco	815201
5	Fresno	544510

Join Kind

Left Outer (all from first, matching from second)

☐ Use fuzzy matching to perform the merge

> Fuzzy matching options

OK

Cancel

Geographical Data >>
Merge Queries >> Select
the join

Merge Queries

Merge

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

Geographical_Data

Location ID	Name	County	State Code	State	Type	Latitude	Longitude	Area Code
A100	Anaheim	Orange County	CA	California	City	33.83529	-117.9145	6
A101	Antioch	Contra Costa County	CA	California	City	38.00492	-121.80579	9
A102	Bakersfield	Kern County	CA	California	City	35.37329	-119.01871	6
A103	Berkeley	Alameda County	CA	California	City	37.87153	-122.26681	4

CA Population data

Rank	City	Population
1	Los Angeles	3849297
2	San Diego	1381611
3	San Jose	983489
4	San Francisco	815201
5	Fresno	544510

Join Kind

Left Outer (all from first, matching from second)

☐ Use fuzzy matching to perform the merge

> Fuzzy matching options

Estimating matches based on data previews

OK Cancel

Select fields to join upon

Merge Queries

Privacy levels

The privacy level is used to ensure data is combined without undesirable data transfer. Incorrect privacy levels may lead to sensitive data being leaked outside of a trusted scope. More information on privacy levels can be found [here](#).

☒ Ignore Privacy Levels checks for this file. Ignoring Privacy Levels could expose sensitive or confidential data to an unauthorized person.

 d:\

 https://www.california-demographics.com/

Appears only once, for the security sake

matching to perform the merge

Attach the Data

Expand this table, keep only the population

	1.2 Latitude	1.2 Longitude	1 ² ₃ Population	1 ² ₃ Households	1 ² ₃ Median Income	CA Population
1	33.83529	-117.9145	350742	99670	60752	Table
2	38.00492	-121.80579	110542	33718	64329	Table
3	35.37329	-119.01871	373640	112439	57095	Table
4	37.87159	-122.27275	120972	45917	66237	Table
5	34.18084	-118.30897	105319	41361	66076	Table
6	33.15809	-117.35059	113453	42791	90597	Table
7	32.64	-117.08417	265757	78066	65185	Table
8	36.82523	-119.70292	104180	34512	62666	Table
9	37.97798	-122.03107	128667	45409	68318	Table
10	33.87529	-117.56644	164226	48156	74149	Table
11	33.64113	-117.91867	113204	40908	66459	Table
12	37.70583	-122.46194	106562	31137	74449	Table

Attach the Data

12 ₃ Population	12 ₃ Households	12 ₃ Median Income	CA Population
350742			
110542			
373640	1		
120972	4		
105319	4		
113453	4		
265757	2		
104180	5		
128667	4		
164226	4		
113204	4		
106562	31137	74449	Table
114219	32738	62897	Table
127610	31400	38766	Table
103679	32564	45925	Table
166913	49316	79487	Table
116732	30752	38085	Table
151451	45041	50899	Table

Expand this table, keep only the population

Expand button

Attach the Data

Rename the two columns

```
= Table.RenameColumns("#Expanded CA Population data",{"CA Population data.Population", "Updated_Population"}, {"Name", "City Name"})
```

	Updated_population
60752	345940
50205	3849297
64329	114794
66116	1381611
57095	407615
84647	983489
66237	117145
81294	815201
41531	544510
90597	115302
50738	525041

Rename the column

Further transformations

Queries [10]

- Project_Data [7]
 - Sales
 - Customer_info
 - Geographical_Data
 - Product_info
 - Sales_Rep_info**
 - Dates
 - CA Population

fx = Table.TransformColumnTypes(Sales_Rep_info,

	Column1	Column2
1	Salesperson ID	Salesperson Name
2	EMP1000	Fred Robertson
3	EMP1001	Kevin Butler
4	EMP1002	Andrew Bowman
5	EMP1003	Christopher Tucker
6	EMP1004	Kenneth Bradley
7	EMP1005	Ryan Welch
8	EMP1006	Sean Miller

Use first row as headers

Queries [10]

- Project_Data [7]
 - Sales
 - Customer_info
 - Geographical_Data
 - Product_info
 - Sales_Rep_info**
 - Dates
 - CA Population
- Other Queries [3]

fx = Table.TransformColumnTypes(#"Promoted Headers",

	Salesperson ID	Salesperson Name
1	EMP1000	Fred Robertson
2	EMP1001	Kevin Butler
3	EMP1002	Andrew Bowman
4	EMP1003	Christopher Tucker
5	EMP1004	Kenneth Bradley
6	EMP1005	Ryan Welch
7	EMP1006	Sean Miller
8	EMP1007	Jeremy Mendoza
9	EMP1008	Carl Elliott

Further transformations

Project_Data [7]

Sales

Customer_info

Geographical_Data

Product_info

Sales_Rep_info

Dates

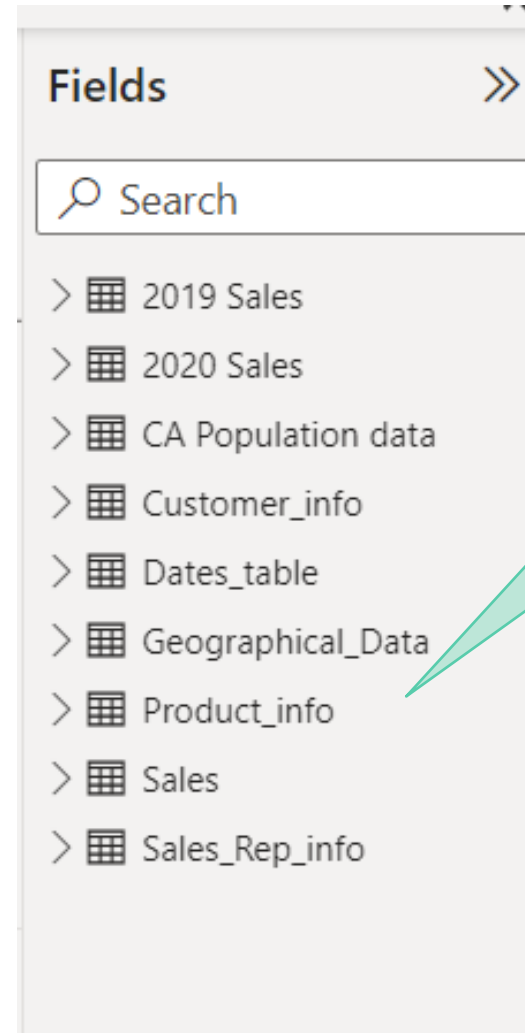
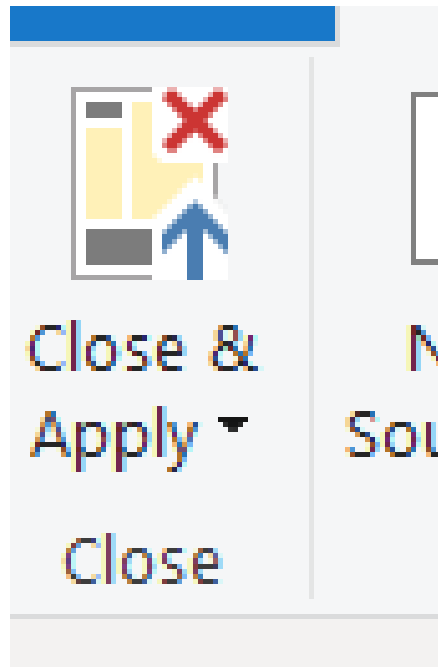
Table.Combine({# Changed type , # 2018 Sales , # 2020 Sales })

ID	Customer ID	Purchase Date	Quantity	Price	Column9	Column10
1	C1121	27-02-2019	2	1522	null	null
2	C1461	17-04-2019	1	1022	null	null
3	C1510	20-09-2019	2	880	null	null
4	C1133	20-05-2019	1	1052	null	null
5	C1240	31-03-2019	1	684	null	null
6	C1155	08-01-2019	2	1522	null	null

Remove last two columns from the Sales table

Close and apply

- To save all the queries until now



Make sure that all the tables are here, else Transform Data >> Enable load

Product Sales Case study

Step4: Model the data and create relationships

Model – Relationships

Look at the relationships
Delete the automatic
connections
Divide the data into Fact Tables
and Lookup tables

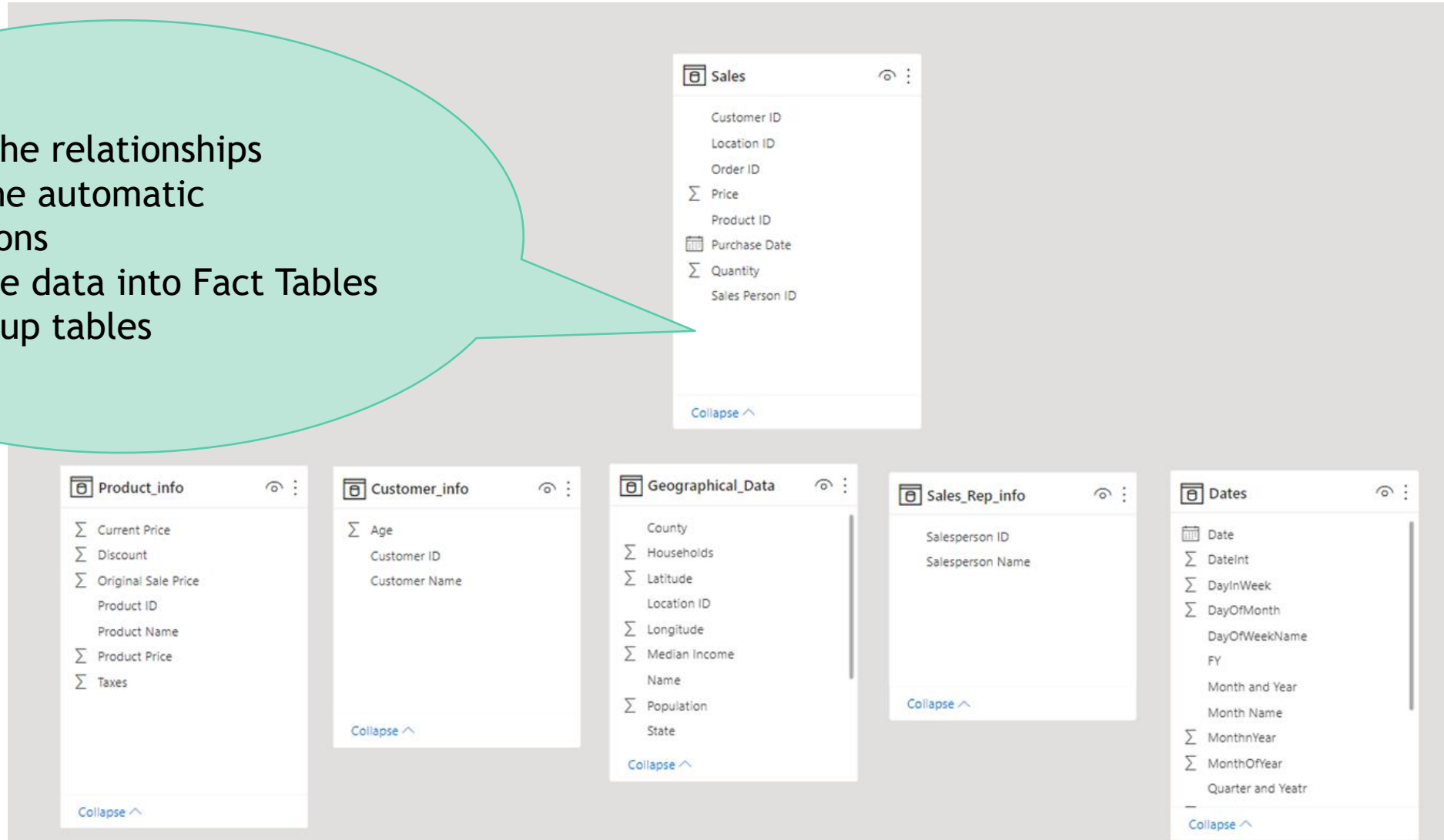
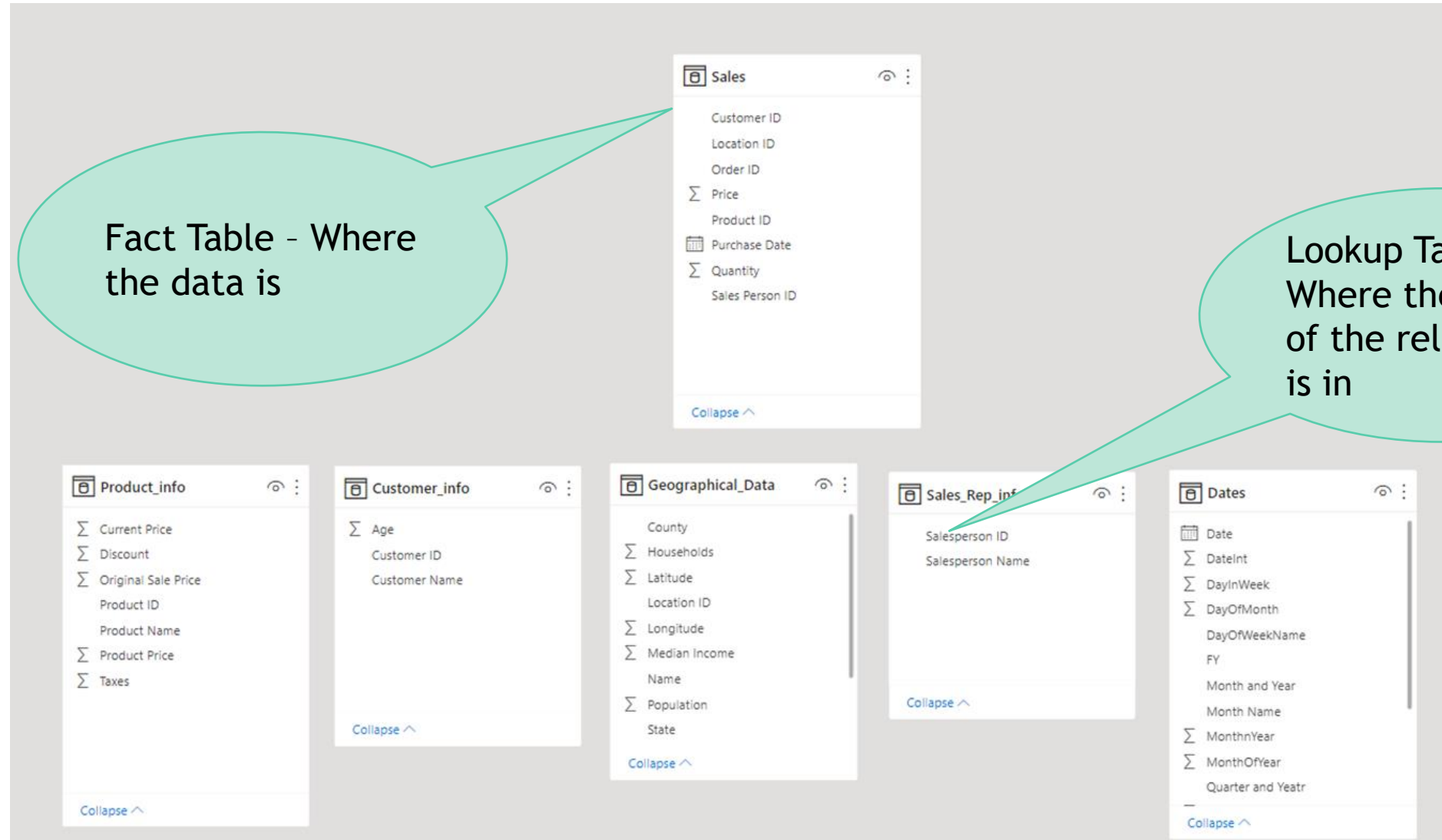
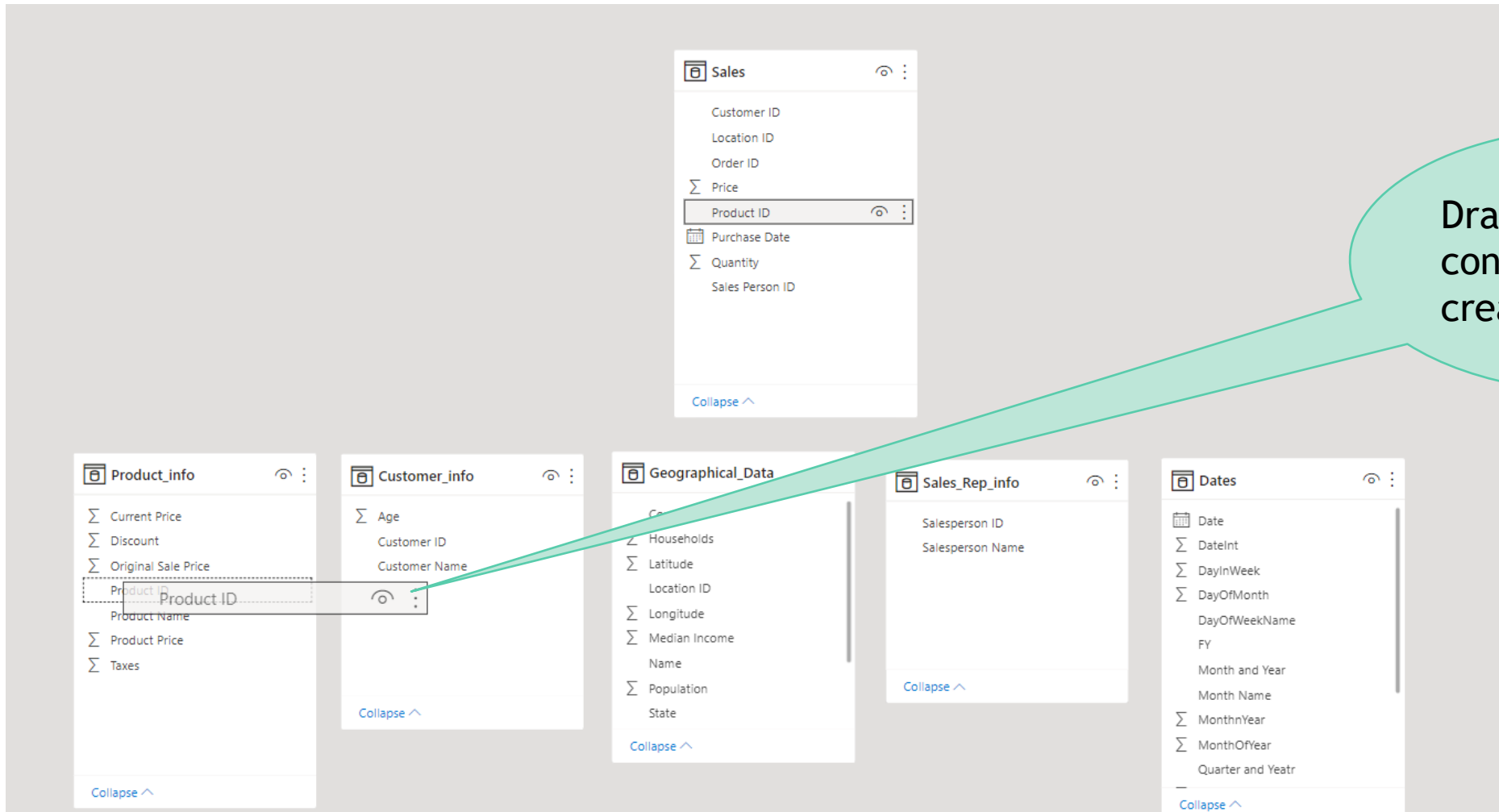


Table Name	Fields
Sales	Customer ID Location ID Order ID Price Product ID Purchase Date Quantity Sales Person ID
Product_info	Current Price Discount Original Sale Price Product ID Product Name Product Price Taxes
Customer_info	Age Customer ID Customer Name
Geographical_Data	County Households Latitude Location ID Longitude Median Income Name Population State
Sales_Rep_info	Salesperson ID Salesperson Name
Dates	Date DateInt DayInWeek DayOfMonth DayOfWeekName FY Month and Year Month Name MonthnYear MonthOfYear Quarter and Year

Fact Table – Lookup Table



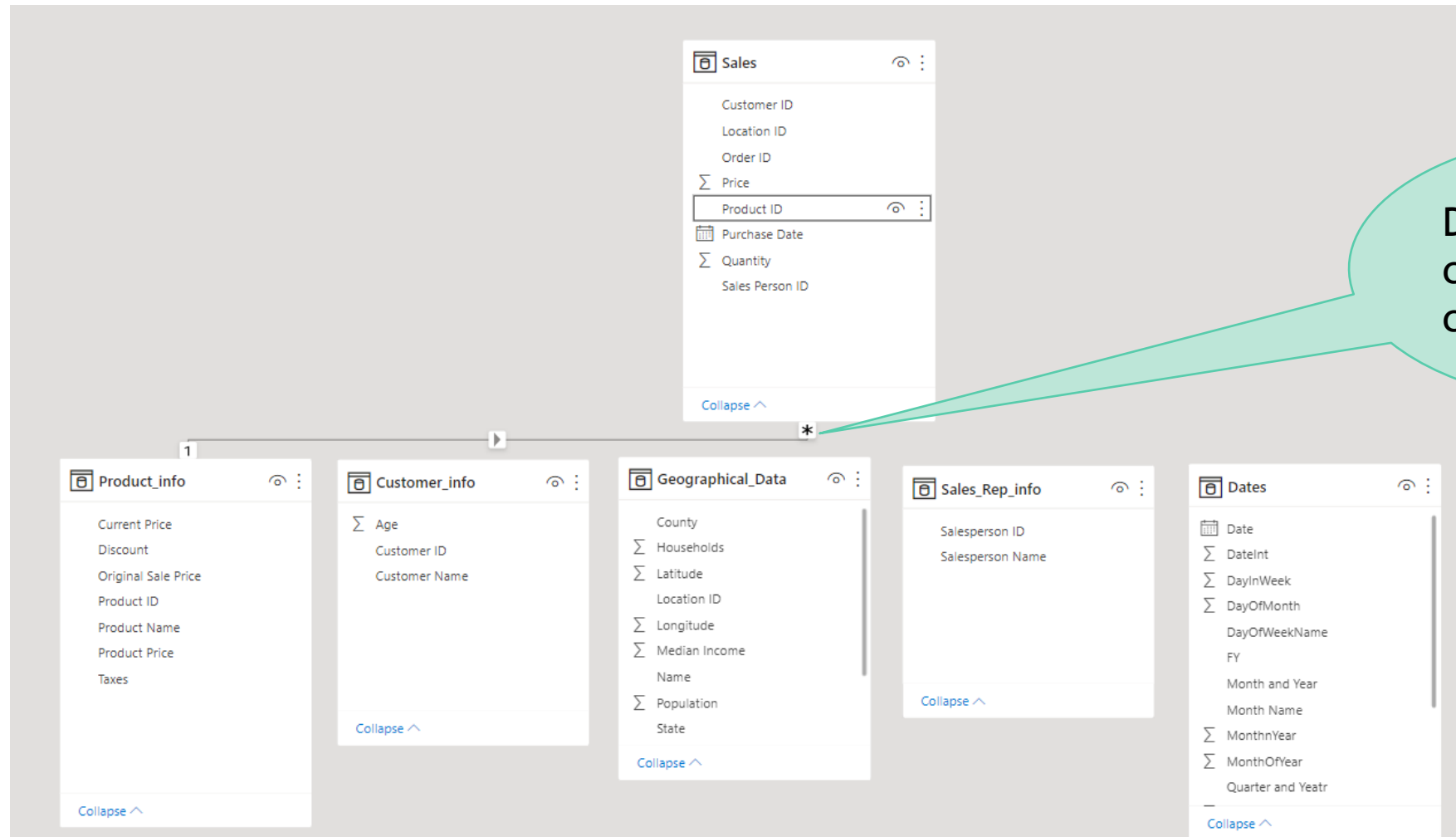
Create Connections



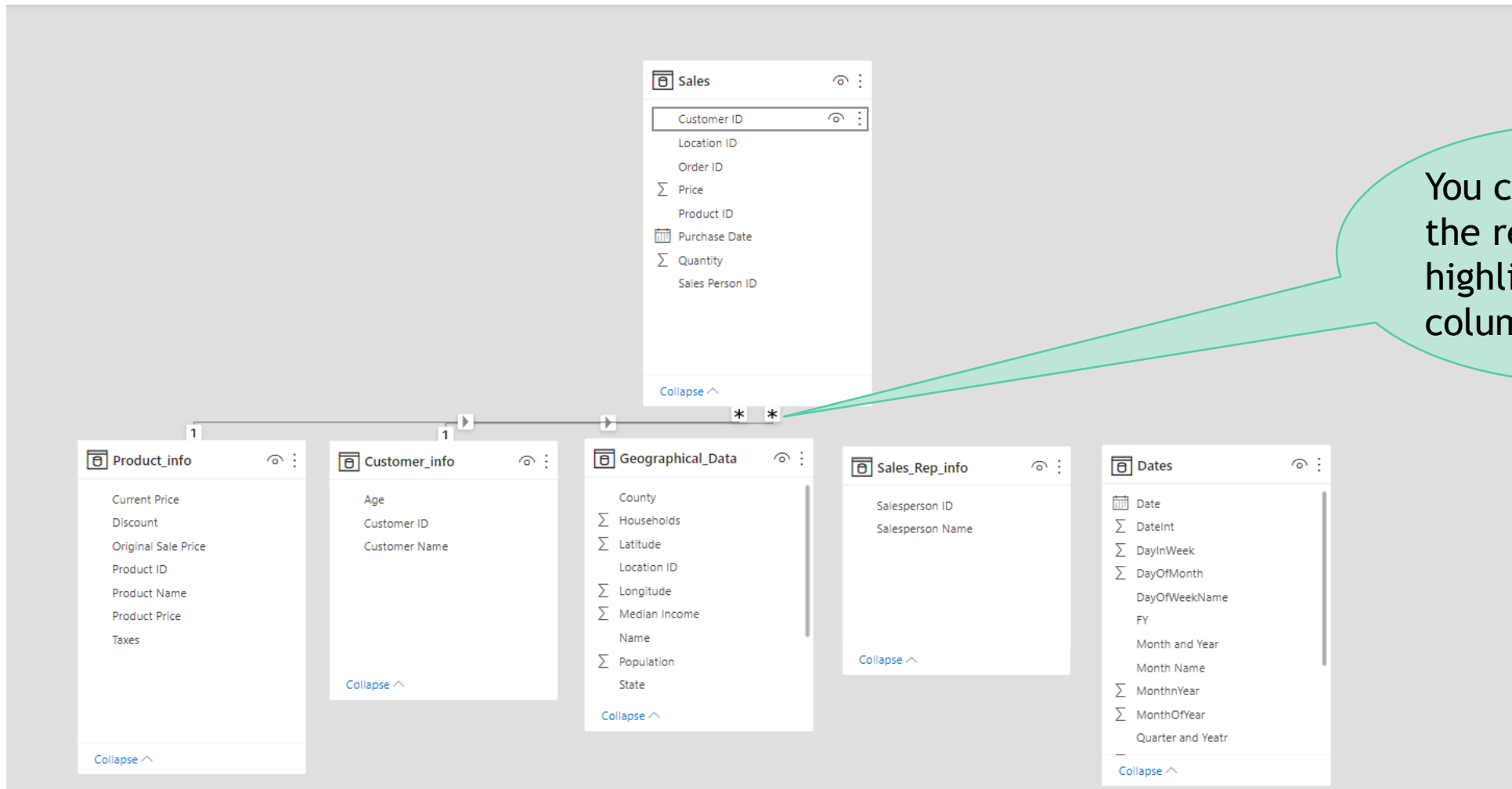
The screenshot displays a data modeling tool interface with several tables: Product_info, Customer_info, Geographical_Data, Sales_Rep_info, and Dates. The Sales table is positioned at the top, and the others are arranged in a row below it. A green arrow indicates a drag-and-drop action from the 'Product ID' field in the Product_info table to the 'Product ID' field in the Sales table. A green callout bubble points to this action with the text: 'Drag and drop, the connection will be created'.

Table	Fields
Product_info	Current Price, Discount, Original Sale Price, Product ID, Product Name, Product Price, Taxes
Customer_info	Age, Customer ID, Customer Name
Geographical_Data	Households, Latitude, Location ID, Longitude, Median Income, Name, Population, State
Sales	Customer ID, Location ID, Order ID, Price, Product ID, Purchase Date, Quantity, Sales Person ID
Sales_Rep_info	Salesperson ID, Salesperson Name
Dates	Date, DateInt, DayInWeek, DayOfMonth, DayOfWeekName, FY, Month and Year, Month Name, MonthnYear, MonthOfYear, Quarter and Year

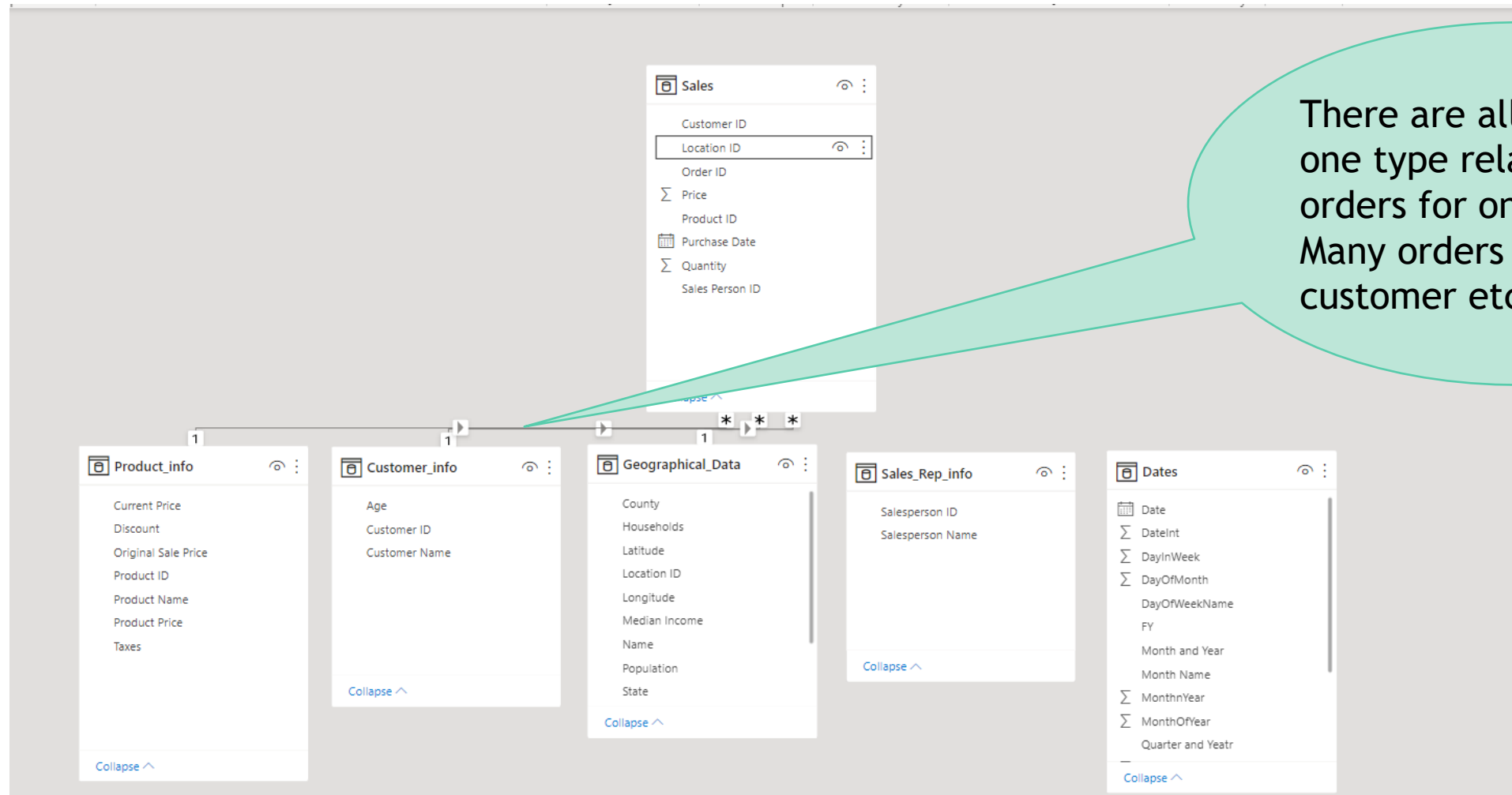
Create Connections



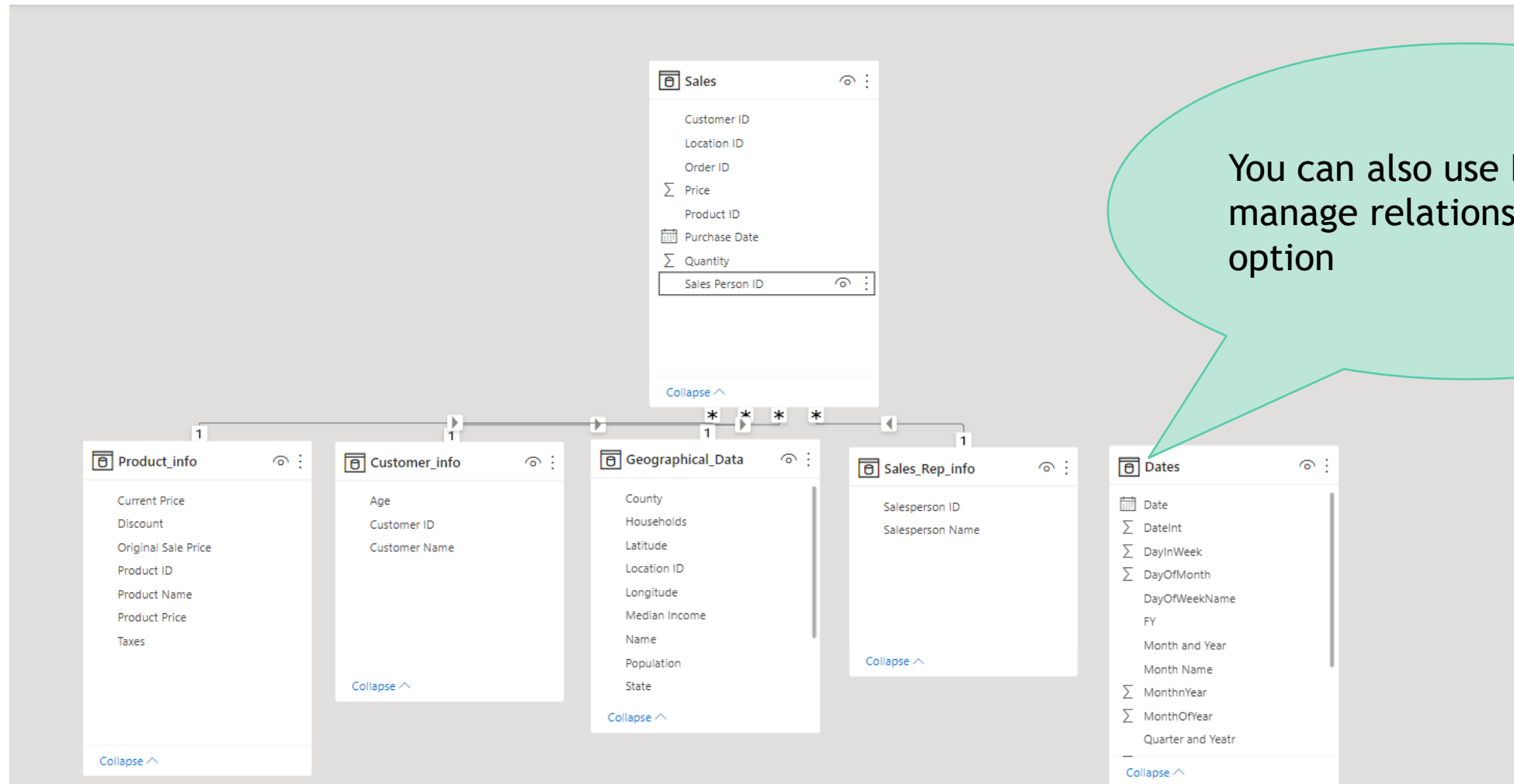
Create Connections – Other Lookup Tables



Create Connections – Other Lookup Tables

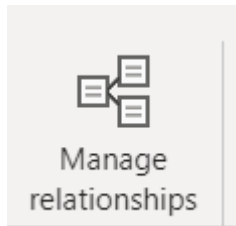


Create Connections – Other Lookup Tables



You can also use Home>>
manage relationships menu
option

Manage table relationships



Manage relationships

Active	From: Table (Column)	To: Table (Column)
<input checked="" type="checkbox"/>	Sales (Customer ID)	Customer_info (Customer ID)
<input checked="" type="checkbox"/>	Sales (Location ID)	Geographical_Data (Location ID)
<input checked="" type="checkbox"/>	Sales (Product ID)	Product_info (Product ID)
<input checked="" type="checkbox"/>	Sales (Sales Person ID)	Sales_Rep_info (Salesperson ID)

New... Autodetect... Edit... Delete...

Existing relations

New relation

Manage table relationships

Create relationship

Select tables and columns that are related.

Sales

Order ID	Product ID	Location ID	Sales Person ID	Customer ID	Purchase Date	Quantity	Price
AX10167	ENX2004	A144	EMP1043	C1286	06 August 2019	1	1278
AX10300	ENX2032	A126	EMP1043	C1376	02 December 2019	1	1967
AX10817	ENX2063	A172	EMP1043	C1578	05 June 2019		

Dates

Date	Year	QuarterOfYear	MonthOfYear	DayOfMonth	DateInt	Month Name	Month and Year
01 July 2019	2019	3	7	1	20190701	July	Jul 2019
02 July 2019	2019	3	7	2	20190702	July	Jul 2019
03 July 2019	2019	3	7	3	20190703	July	Jul 2019

Cardinality

Many to one (*:1)

Cross filter direction

Single

☒ Make this relationship active

☐ Apply security filter in both directions

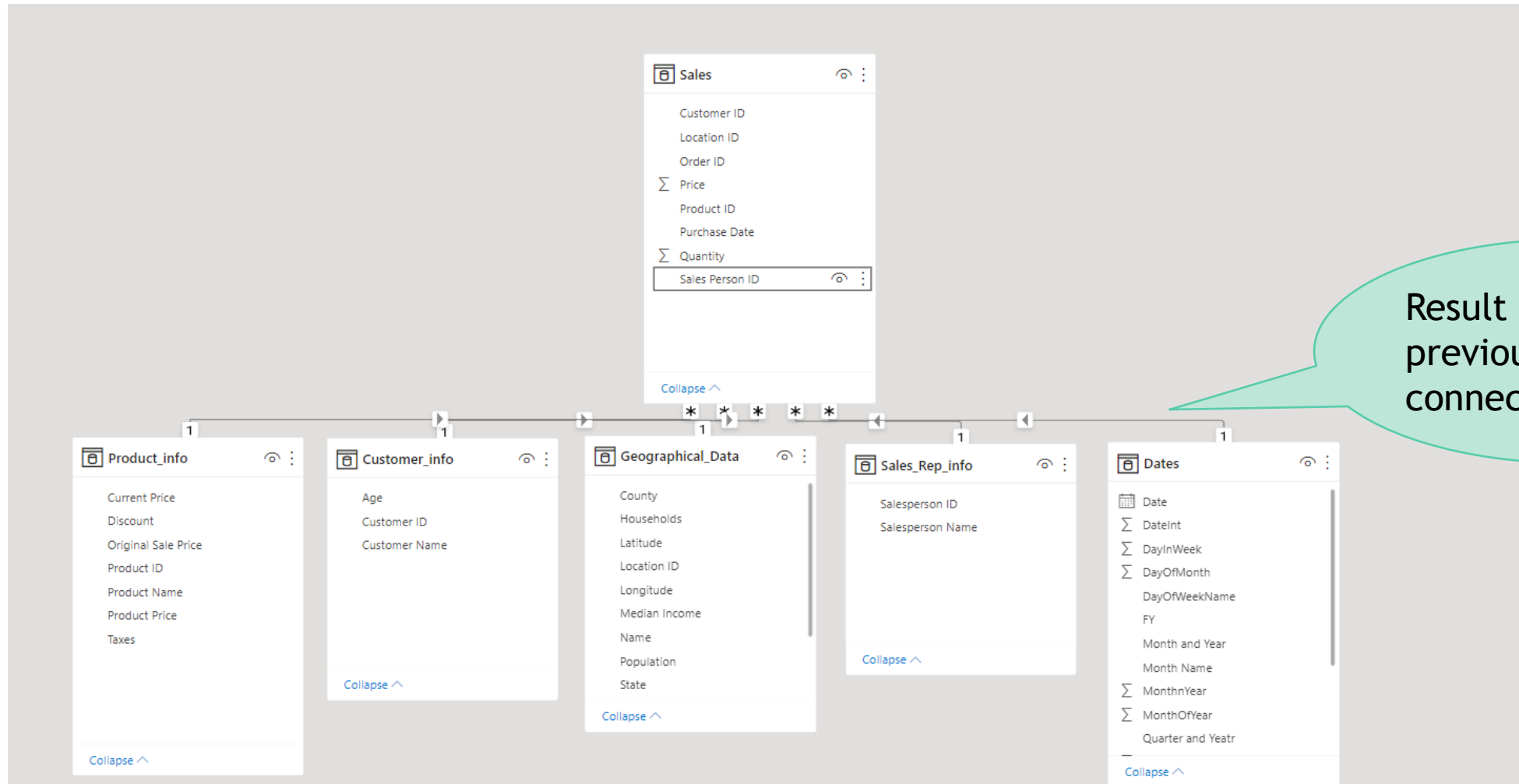
☐ Assume referential integrity

OK

Cancel

Dates column is joined based on purchase date

Manage table relationships



Next Step

DAX Deep Dive
