



sadā śiva samāramabhbāṁ śaṅkarācārya madhyamām..
asmadācārya paryantām vande guru paramparām..

Salutation to the lineage starting with lord Sadasiva, with Adi Sankara in the middle and continuing up to my immediate teacher.

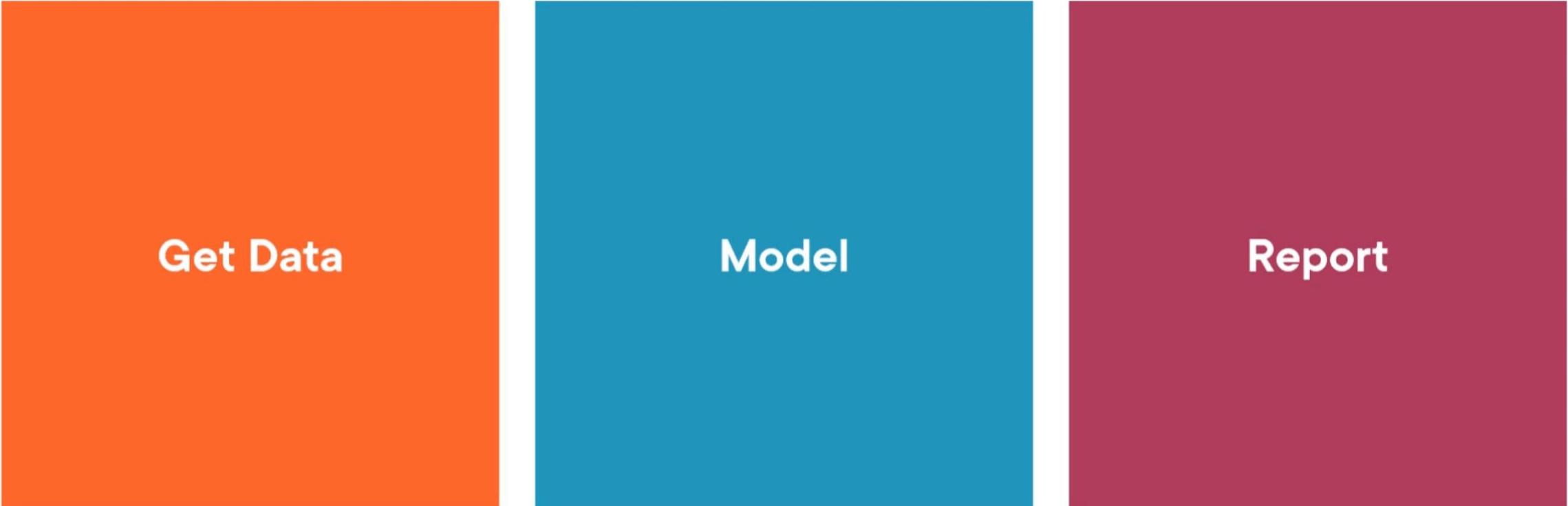


Power BI

Modeling Data for Analysis

- Modelling Data for Analysis
- Reviewing Missing Relationships
- Creating a Relationship
- Creating More Relationships
- Defining New Columns
- Concatenating Columns
- Performing a Lookup to a Related Table
- Translating a Value
- Using the if Function
- Adding a Date Table

Power BI Development Workflow



Get Data

Model

Report

Power BI Development Workflow

Get Data

Model

Report



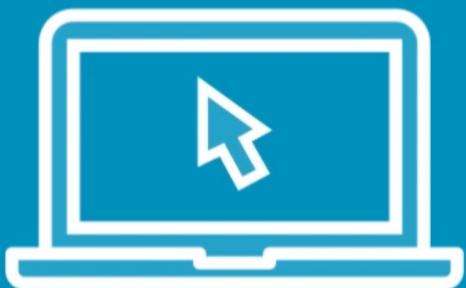
Model

Create relationships

Define new columns

Add a date table

Demo



**Create table visual from Customer and
Sales fields**

Globomantics Model Assessment

Customer

Location

Sales

Median Groups

Survey

Globomantics Model Assessment

Sales

BusinessEntityID	SalesAmount
1705	\$1,750.98
1709	\$68.97
1725	\$56.97
1739	\$61.96
1742	\$4.99

Customer

BusinessEntityID	LastName	FirstName
1705	Rothenberg	Eric
1709	Roy	Luke
1725	Sanchez	Thomas
1739	Seamans	Mike
1742	Selikoff	Steven

Globomantics Model Assessment

Combination of columns from unrelated tables

BusinessEntityID	LastName	FirstName	SalesAmount
1705	Rothenberg	Eric	\$9,352,497.5738
1709	Roy	Luke	\$9,352,497.5738
1725	Sanchez	Thomas	\$9,352,497.5738
1739	Seamans	Mike	\$9,352,497.5738
1742	Selikoff	Steven	\$9,352,497.5738

Missing
relationship

Globomantics Customer Analysis - Power BI De... Search

File Home Help

Cut Paste Copy Get data v Excel Power BI datasets SQL Server Enter data Dataverse Recent sources v Transform data v Refresh data v Manage relationships Manage roles View as Q&A setup Language A Linguistic schema v Publish Share

Clipboard Data Relationships Security Q&A Share

Customer AddressLine1 AddressLine2 AddressType BusinessEntityID City CommuteDistance CommuteDistanceSort CountryRegionName Education

Location Geography LOGRECNO PLACE Place Name STATE StateAb Zip Code

Median Groups MedianGroup MedianGroupKey

Sales BusinessEntityID OrderDate Product ProductCategory SalesAmount SalesOrderDetail SalesOrderNumber

Survey LOGRECNO Median Household Income STUSAB

Fields < Properties >

Customer Location Median Groups Sales Survey

All tables +

Search

Navigation icons: back, forward, search, refresh, zoom.

The screenshot shows the Power BI Data view interface. On the left, there's a sidebar with icons for Home, Data, Relationships, Security, Q&A, and Share. Below the sidebar, there are five data cards: Customer, Location, Median Groups, Sales, and Survey. Each card lists its columns. To the right of the cards is a 'Properties' pane with a 'Fields' section containing a search bar and a list of the five tables. At the bottom, there are navigation buttons for 'All tables' and a yellow '+' button, along with standard window control buttons (minimize, maximize, close) at the top right.

Globomantics Customer Analysis - Power BI De... Search

File Home Help

Cut Paste Copy Get data v Excel Power BI datasets SQL Server Enter data Dataverse Recent sources v Transform data v Refresh data v Manage relationships Manage roles View as Q&A setup Language A Linguistic schema v Publish Share

Clipboard Data Relationships Security Q&A Share

Customer AddressLine1 AddressLine2 AddressType BusinessEntityID City CommuteDistance CommuteDistanceSort CountryRegionName Education

Location Geography.LOGRECNO PLACE Place Name STATE StateAB Zip Code

Median Groups MedianGroup MedianGroupKey

Sales BusinessEntityID OrderDate Product ProductCategory SalesAmount

Fields Search

Properties

Customer Location Median Groups Sales

All tables +

This screenshot shows the Power BI Data view interface. The top navigation bar includes File, Home (selected), Help, and various ribbon tabs like Data, Relationships, and Security. The main area displays four data tables: Customer, Location, Median Groups, and Sales. The Customer and Sales tables are highlighted with a red border. The Customer table contains fields like AddressLine1, AddressLine2, AddressType, BusinessEntityID, City, CommuteDistance, CommuteDistanceSort, CountryRegionName, and Education. The Sales table contains fields like BusinessEntityID, OrderDate, Product, ProductCategory, and SalesAmount. The Location and Median Groups tables also have their own expandable lists of fields. To the right, a sidebar titled 'Fields' lists the selected tables: Customer, Location, Median Groups, Sales, and Survey. A 'Properties' panel is open on the far right.

File Home Insert Modeling View Help Format Data / Drill

Cut Copy Format painter Clipboard Paste Get data Excel Power BI datasets SQL Server Enter data Dataverse Recent sources Transform Refresh data New visual Text box More visuals New measure Quick measure Sensitivity (preview) Publish Share

LastNames

Adams
Agbonile
Alan
Alexander
Allen
Alonso
Alvarez
Anand
Andersen
Anderson
Arthur

Filters

Visualizations

Fields

Search

Gender
HomeOwnerFlag
 LastName
Marital Status
MiddleName
 NumberCarsOwn...
 NumberChildren...
Occupation
PhoneNumber
PhoneNumberT...
PostalCode
StateProvinceN...
Suffix

Values

LastNames

Drill through

Cross-report

Off

Keep all filters

Page 1 +

The screenshot shows the Power BI Desktop interface with the "Home" tab selected. A red arrow points from the "Get data" button in the "Data" ribbon to the "Filters" section of the ribbon, which displays a list of fields and their current status.

Home Ribbon:

- Paste, Cut, Copy, Format painter, Clipboard
- Get data, Excel, Power BI datasets, SQL Server, Enter data, Dataverse, Recent sources
- Transform data, Refresh data, New visual, Text box, More visuals
- New measure, Quick measure, Sensitivity (preview), Publish, Share

Visualizations: A grid of visualization icons, with the "Table" icon highlighted by a red box.

Fields: A list of fields with checkboxes indicating their status:

- Genaer (unchecked)
- HomeOwnerFlag (unchecked)
- LastName (checked)
- Marital Status (unchecked)
- MiddleName (unchecked)
- NumberCarsOwn... (unchecked)
- NumberChildre... (unchecked)
- Occupation (unchecked)
- PhoneNumber (unchecked)
- PhoneNumberT... (unchecked)
- PostalCode (unchecked)
- StateProvinceN... (unchecked)
- Suffix (unchecked)

Filters: A dropdown menu showing the current filter applied to the "LastName" field, with options to "Drill through", "Cross-report", "Off", or "Keep all filters".

Page Navigation: Page 1, a yellow plus sign button, and navigation arrows.

File Home Insert Modeling View Help Format Data / Drill

Cut Copy Format painter Clipboard

Get data v Excel Power BI datasets SQL Server Enter data Dataverse Recent sources v

Transform Refresh data v New visual Text box More visuals v

New measure Quick Sensitivity (preview) v Publish Share

LastNames

- Adams
- Agbonile
- Alan
- Alexander
- Allen
- Alonso
- Alvarez
- Anand
- Andersen
- Anderson
- Arthur
- Arun
- Ashe
- Bailey
- Baker
- Barnes
- Bebbington
- Beck
- Becker
- Bell
- Bendixen
- Bennett
- Black
- Blanco
- Blue
- Bradley
- Brooks
- Brown
- Browning
- Bryant
- Butler
- Cai

Visualizations

Filters

Fields

Search

Genaer

HomeOwnerFlag

LastName

Marital Status

MiddleName

NumberCarsOw...

NumberChildre...

Occupation

PhoneNumber

PhoneNumberT...

PostalCode

StateProvinceN...

Suffix

Values

LastNames

Drill through

Cross-report

Off

Keep all filters

Page 1 +

The screenshot shows the Power BI Desktop interface with the 'Format' tab selected. On the left, there's a list of customer last names. In the center, there's a 'Visualizations' pane with a dropdown menu open for 'LastName'. On the right, there's a 'Fields' pane listing various customer fields like 'HomeOwnerFlag' and 'LastName'.

File Home Insert Modeling View Help Format Data / Drill

Cut Copy Format painter Clipboard

Get data Excel Power BI datasets SQL Server Enter data Dataverse Recent sources

Transform Refresh data New visual Text box More visuals

New measure Quick Sensitivity (preview) Publish Share

LastNames

- Adams
- Agbonile
- Alan
- Alexander
- Allen
- Alonso
- Alvarez
- Anand
- Andersen
- Anderson
- Arthur
- Arun
- Ashe
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- Bell
- Bendixen
- Bennett
- Black
- Blanco
- Blue
- Bradley
- Brooks
- Brown
- Browning
- Bryant
- Butler
- Cai

Page 1 +

Visualizations Fields

Search

General

Style

Grid

Column headers

Values

Genauer

HomeOwnerFlag

LastName

Marital Status

MiddleName

NumberCarsOw...

NumberChildre...

Occupation

PhoneNumber

PhoneNumberT...

PostalCode

StateProvinceN...

Suffix

Home

Cut Copy Format painter Clipboard

Get data v Excel Power BI datasets SQL Server Enter data Dataverse Recent sources v

Transform Refresh data v New visual Text box More visuals v

New measure Quick Sensitivity (preview) v Publish Share

Last Name Sales Amount

Adams	\$9,352,497.5738
Agbonile	\$9,352,497.5738
Alan	\$9,352,497.5738
Alexander	\$9,352,497.5738
Allen	\$9,352,497.5738
Alonso	\$9,352,497.5738
Alvarez	\$9,352,497.5738
Anand	\$9,352,497.5738
Andersen	\$9,352,497.5738
Anderson	\$9,352,497.5738
Arthur	\$9,352,497.5738
Arun	\$9,352,497.5738
Ashe	\$9,352,497.5738
Bailey	\$9,352,497.5738
Baker	\$9,352,497.5738
Barnes	\$9,352,497.5738
Bebbington	\$9,352,497.5738
Beck	\$9,352,497.5738
Becker	\$9,352,497.5738
Bell	\$9,352,497.5738
Total	\$9,352,497.5738

Visualizations Fields

Filters

Search

Sales

BusinessEntityID

OrderDate

Product

ProductCategory

SalesAmount

SalesOrderDetail

Text size: 16 pt

Image height: 75

Page 1 +

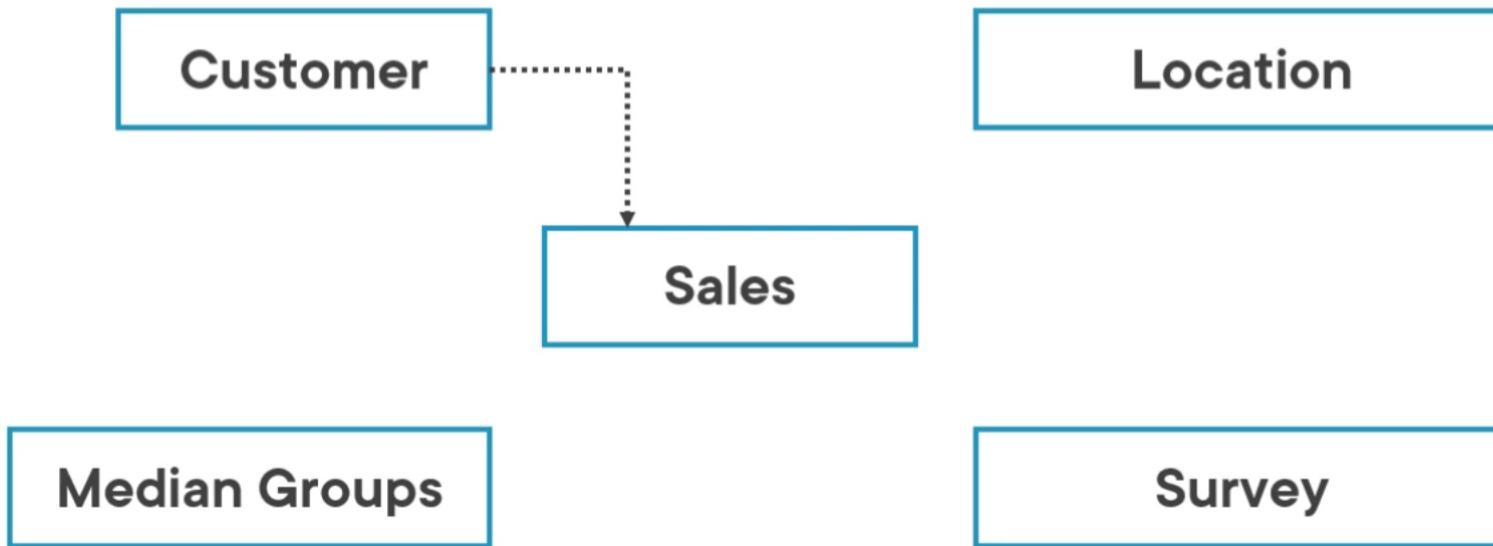
Page 1 of 1

Demo



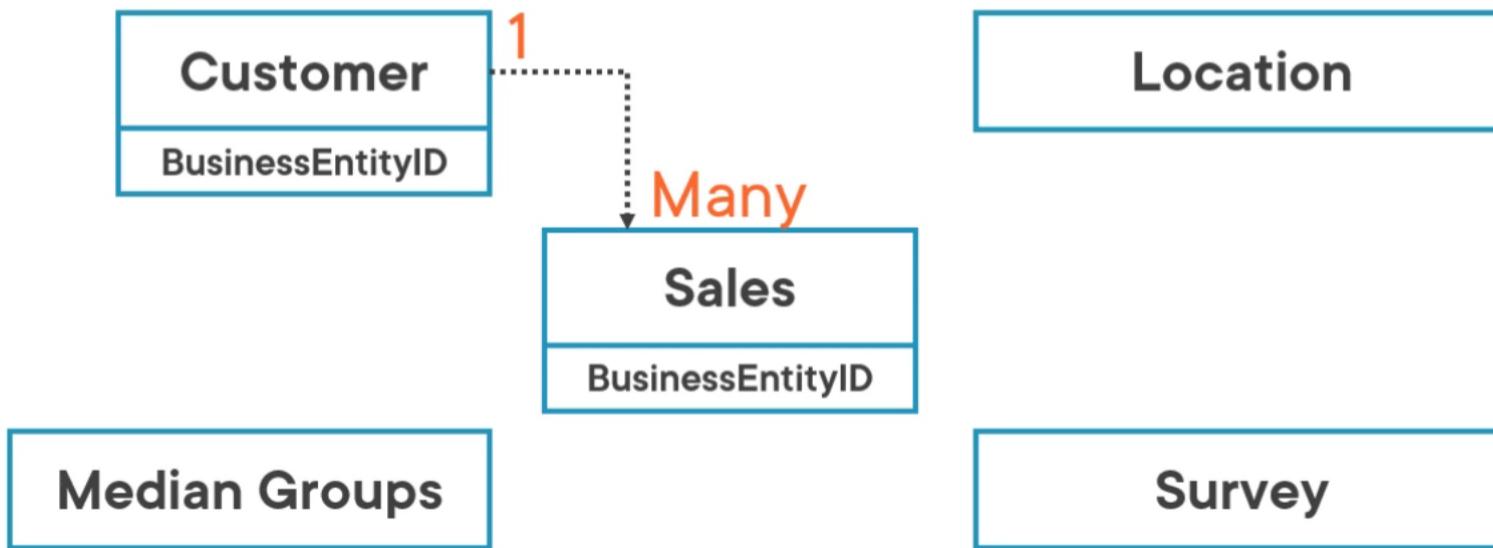
Create relationship between Customer and Sales

Globomantics Model Assessment



Globomantics Model Assessment

One-to-many relationship



Globomantics Model Assessment

Table relationships enable correct calculations for each row

BusinessEntityID	LastName	FirstName	SalesAmount
1705	Rothenberg	Eric	\$1,750.98
1709	Roy	Luke	\$68.97
1725	Sanchez	Thomas	\$56.97
1739	Seamans	Mike	\$61.96
1742	Selikoff	Steven	\$4.99

Correct
calculations

Globomantics Customer Analysis - Power BI De... Search

File Home Help

Cut Paste Copy Get data Excel Power BI datasets SQL Server Enter data Dataverse Recent sources Transform data Refresh data Manage relationships Manage roles View as Q&A Language setup Linguistic schema Publish Share

Clipboard Data Relationships Security Q&A Share

Customer AddressLine1 AddressLine2 AddressType BusinessEntityID City CommuteDistance CommuteDistanceSort CountryRegionName Education

Location Geography.LOGRECNO PLACE Place Name STATE StateAB Zip Code

Median Groups MedianGroup MedianGroupKey

Sales BusinessEntityID OrderDate Product ProductCategory SalesAmount

Fields Properties

Search Customer Location Median Groups Sales Survey

All tables +

The screenshot shows the Power BI Data view interface. At the top, there's a ribbon menu with File, Home, and Help tabs. Below the ribbon are several icons for clipboard operations (Cut, Paste, Copy) and data management (Get data, Excel, Power BI datasets, SQL Server, Enter data, Dataverse, Recent sources), along with options for Transform data, Refresh data, Manage relationships, Manage roles, View as, Q&A setup, Language setup, Linguistic schema, Publish, and Share.

The main area displays four data tables:

- Customer:** Fields include AddressLine1, AddressLine2, AddressType, BusinessEntityID (selected), City, CommuteDistance, CommuteDistanceSort, CountryRegionName, Education. The BusinessEntityID field is highlighted with a red border.
- Location:** Fields include Geography.LOGRECNO, PLACE, Place Name, STATE, StateAB, Zip Code. The Geography.LOGRECNO field is collapsed.
- Median Groups:** Fields include MedianGroup, MedianGroupKey. The MedianGroup field is collapsed.
- Sales:** Fields include BusinessEntityID (selected), OrderDate, Product, ProductCategory, SalesAmount. The BusinessEntityID field is highlighted with a red border.

On the right side, there's a **Properties** pane with a search bar and a list of selected fields:

- > Customer
- > Location
- > Median Groups
- > Sales
- > Survey

At the bottom, there are buttons for All tables and a plus sign (+). The status bar at the bottom right includes zoom controls (-, +, 100%) and a refresh icon.

Globomantics Customer Analysis - Power BI De... Search

File Home Help

Cut Paste Copy Get data Excel Power BI datasets SQL Server Enter data Dataverse Recent sources Transform data Refresh data Manage relationships Manage roles View as Q&A setup Language A Linguistic schema A Publish Share

Clipboard Data Relationships Security Q&A Share

Customer AddressLine1 AddressLine2 AddressType BusinessEntityID City CommuteDistance CommuteDistanceSort CountryRegionName Education

Location Geography.LOGRECNO PLACE Place Name STATE StateAB Zip Code

Median Groups MedianGroup MedianGroupKey

Sales BusinessEntityID OrderDate Product ProductCategory SalesAmount

Fields Properties

Search

> Customer
> Location
> Median Groups
> Sales
> Survey

Drag **BusinessEntityID** from **Sales** table to **Customer** table **BusinessEntityID** field

All tables +

The screenshot shows the Power BI Data Model view with four tables listed: Customer, Location, Median Groups, and Sales. The Sales table is currently selected, as indicated by its darker background. A large blue curved arrow points from the Sales table towards the Customer table's BusinessEntityID column, which is highlighted with a yellow background. Both the Sales and Customer tables have their BusinessEntityID columns selected, as indicated by the cursor icons on both columns.

Create relationship

X

Select tables and columns that are related.

Sales

BusinessEntityID	SalesOrderNumber	SalesOrderDetail	OrderDate	Product	ProductCategory
2680	SO51308	38111	6/7/2013 12:00:00 AM	Water Bottle - 30 oz.	Accessories
3015	SO51569	38847	6/22/2013 12:00:00 AM	Water Bottle - 30 oz.	Accessories
5446	SO52066	43377	7/4/2013 12:00:00 AM	Water Bottle - 30 oz.	Accessories

< >

Customer

BusinessEntityID	Title	FirstName	MiddleName	LastName	Suffix	PhoneNumber	PhoneNumberType
2686	null	Natalie	null	Reed	null	833-555-0176	Home
2948	null	Jarrod	null	Sanchez	null	175-555-0161	Cell
3051	null	Amanda	null	Butler	null	920-555-0197	Home

< >

Cardinality

Many to many (*.*)

Cross filter direction

Both

Make this relationship active

Apply security filter in both directions

Assume referential integrity

! This relationship has cardinality Many-Many. This should only be used if it is expected that neither column (BusinessEntityID and BusinessEntityID) contains unique values, and that the significantly different behavior of Many-many relationships is understood. [Learn more](#)

Close the window, don't apply the changes

The screenshot shows the Power BI Desktop interface with the "Home" tab selected. The ribbon menu includes File, Home, Help, and various data import and management options. The main workspace displays three tables: Customer, Location, and Sales. The Customer table has its properties open, showing settings like Decimal places (0), Advanced sorting by BusinessEntityID, Data category (Uncategorized), and no summarization. Red arrows highlight specific fields in the Customer table (BusinessEntityID) and the Properties pane (Advanced, Summarize by). The Fields pane on the right lists all columns from these three tables.

Properties

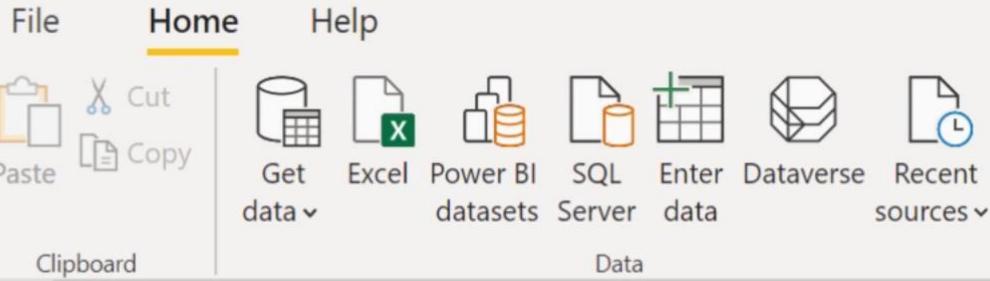
- Decimal places: 0
- Advanced:

 - Sort by column: BusinessEntityID (Default)

- Data category: Uncategorized
- Summarize by: None
- Is nullable: Yes

Fields

- Customer: AddressLine1, AddressLine2, AddressType, BusinessEntityID, City, CommuteDistance, CommuteDistanceSort, CountryRegionName, Education
- Location: Geography.LOGRECNO, PLACE, Place Name, STATE, StateAB, Zip Code
- Sales: BusinessEntityID, OrderDate, Product, ProductCategory, SalesAmount



Properties

customer

Row label
Select a row label

Key column
Select a column with unique values

Is hidden
No

Is featured table
No

Fields

Search

Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CommuteDistance
- CommuteDistanceSort
- CountryRegionName
- Education

Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CommuteDistance
- CommuteDistanceSort
- CountryRegionName
- Education
- EducationSort
- FirstName
- Gender

Screenshot of the Power BI Data view interface showing the Fields pane and the context menu for the BusinessEntityID column.

The Fields pane on the right lists the following columns:

- Customer
- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CommuteDistance
- CommuteDistanceSort
- CountryRegionName
- Education
- EducationSort
- Select a column with unique values

The BusinessEntityID column is currently selected, indicated by a yellow selection bar around its row in the Fields pane.

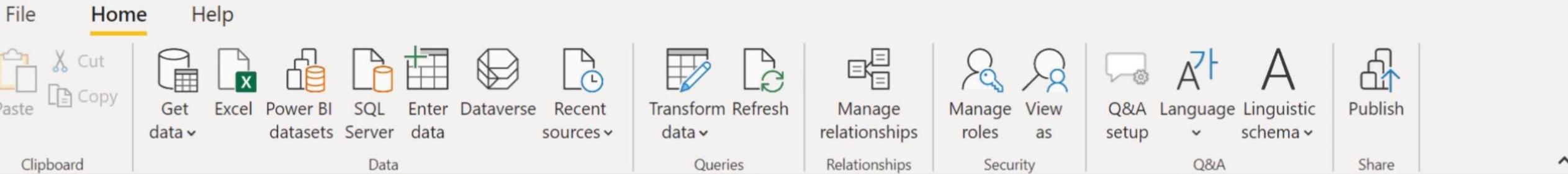
The context menu for the BusinessEntityID column is open, displaying the following options:

- Select a column with unique values
- Is hidden
- No
- Is featured table
- No

At the bottom right of the context menu is a blue "Edit" button.

The Data view on the left shows three tables:

- Customer**: AddressLine1, AddressLine2, AddressType, BusinessEntityID, City, CommuteDistance, CommuteDistanceSort, CountryRegionName, Education.
- Location**: Geography.LOGRECNO, PLACE, Place Name, STATE, StateAB, Zip Code.
- Sales**: BusinessEntityID, OrderDate.



Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CommuteDistance
- CommuteDistanceSort**
- CountryRegionName
- Education

[Collapse ^](#)

This column doesn't have unique values

The selected column can't be the key column because it contains duplicate values. Choose a column that has unique values in every fields.

[Close](#)

Is hidden

No

Is featured table

No

[Edit](#)

Sales

- BusinessEntityID**
- OrderDate
- Product

Fields

Search

Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CommuteDistance
- CommuteDistanceSort**
- CountryRegionName
- Education
- EducationSort**
- FirstName
- Gender

Close the properties pane and open
Power Query Editor to transform the data

Globomantics Customer Analysis - Power Query Editor

File Home Transform Add Column View Tools Help

Close & Apply New Recent Enter Data Data source settings Manage Parameters Refresh Preview Properties Advanced Editor Manage Columns Reduce Rows Sort Split Column Group By Data Type: Whole Number Use First Row as Headers Manage Rows Manage Query Transform Close New Query Data Sources Parameters Query

Text Analytics Vision Azure Machine Learning AI Insights

Queries [14]

Helper Queries [3]

- Sample File
- Parameter1 (Sample File)
- Transform File
- Transform Sample File

Queries not in model [5]

- CA Geo
- OR Geo
- WA Geo
- State Surveys
- Geography

Other Queries [5]

- Customer
- Sales
- Survey

= Table.TransformCo

Keep Rows Remove Rows

Keep Top Rows
Keep Bottom Rows
Keep Range of Rows
Keep Duplicates
Keep Errors

	BusinessEntityID	Title	FirstName	MiddleName
1			Eric	
2			Luke	J.
3			Thomas	T.
4			Mike	
5			Steven	
6			Joshua	R.
7	1756	Mr.	Marty	E.
8	1757	Mr.	David	
9	1761	Ms.	Bonnie	L.
10	1769	Mr.	Rolando	T.
11	1770	Mr.	Ben	
12	1772	Mr.	Jeff	
13	1781	Mr.	William	K.
14	2382		null	Kelvin
15	2389		null	Laura
16	2397		null	Isabella
17			null	

Query Settings

PROPERTIES

Name: Customer

All Properties

APPLIED STEPS

- Split Column by Delimiter2
- Changed Type2
- Removed Columns12
- Replaced Value11
- Changed Type3
- Renamed Columns11
- Replaced Value12
- Replaced Value13
- Replaced Value14
- Replaced Value15
- Replaced Value16
- Renamed Columns12

Globomantics Customer Analysis - Power Query Editor

File Home Transform Add Column View Tools Help

Close & Apply New Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Manage Properties Advanced Editor Manage Columns Reduce Rows Sort Split Column Group By Data Type: Text Use First Row as Headers Replace Values Combine Text Analytics Vision Azure Machine Learning Close New Query Data Sources Parameters Query Transform AI Insights

Queries [14]

- Helper Queries [3]
 - Sample File
 - Parameter1 (Sample File)
 - Transform File
- Transform Sample File
- Queries not in model [5]
 - CA Geo
 - OR Geo
 - WA Geo
 - State Surveys
 - Geography
- Other Queries [5]
 - Customer
 - Sales
 - Survey

= Table.TransformColumnTypes(#"Renamed Columns12",{

oneNumber	ABc_PhoneNumberType	ABc_AddressType	ABC_AddressLine1
1 5-0100			9277 Country V
2 5-0100			8625 Woodcre
3 5-0100			8645 Michigan
4 5-0100			4678 Cardinal D
5 5-0100			8384 Golden R
6 5-0100			3880 95th St.
7 5-0100			1937 Sycamore
8 5-0100			3956 Stonedale
9 5-0100			6091 Mountair
10 5-0100			3771 Concerto
11 5-0100			1534 Land Ave
12 5-0100			6992 Tara St.
13 5-0100			5629 Seagull Co
14 5-0116			2356 Shady Ln.
15 5-0179			5840 Delta Fair
16 5-0164			4304 Dos Rios I
17 5-0175			672 Noah Cour

Sort Ascending
Sort Descending
Clear Sort
Clear Filter
Remove Empty
Text Filters

Search

(Select All) Home Shipping

OK Cancel

Query Settings

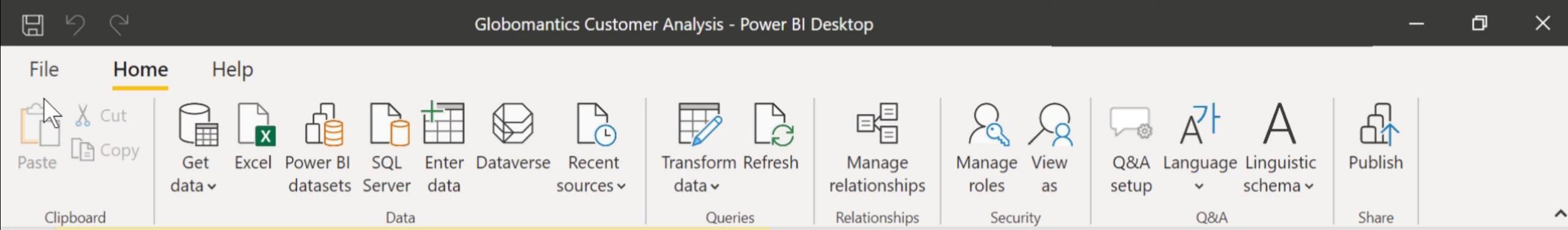
PROPERTIES

Name: Customer

All Properties

APPLIED STEPS

- Split Column by Delimiter2
- Changed Type2
- Removed Columns12
- Replaced Value11
- Changed Type3
- Renamed Columns11
- Replaced Value12
- Replaced Value13
- Replaced Value14
- Replaced Value15
- Replaced Value16
- Renamed Columns12



There are pending changes in your queries that haven't been applied.

App

Properties

Load

Customer
7,780 rows from C:\getting-started-power-bi-data\GlobomanticsSales.mdb.

Sales
87 rows from C:\getting-started-power-bi-data\GlobomanticsSales.mdb.

Cancel

customer

Row label
Select a row label

Fields

Search

Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CommuteDistance
- CommuteDistanceSort
- CountryRegionName
- Education

All tables +

The screenshot shows the Power BI Desktop interface with a modal dialog titled "Load" open. The "Properties" tab is selected. The "Customer" table is highlighted, showing 7,780 rows from a local MDB file. Below it, the "Sales" table is shown with 87 rows. A "Row label" dropdown is open, prompting to "Select a row label". To the right, a "Fields" pane lists all columns of the "Customer" table. A status message at the top left indicates pending changes. The bottom navigation bar shows "All tables" and a plus sign icon.

The screenshot shows the Power BI Desktop interface with the "Home" tab selected. A context menu is open over the "BusinessEntityID" column in the "Sales" table, displaying various properties.

Properties Panel:

- Decimal places:** Set to 0.
- Advanced:** Contains settings for sorting, data category, summarization, and nullability.
- Sort by column:** Set to "BusinessEntityID (Default)".
- Data category:** Set to "Uncategorized".
- Summarize by:** Set to "None".
- Is nullable:** Set to "Yes".

Table View:

- Sales Table:** Shows columns: BusinessEntityID, OrderDate, Product, ProductCategory, SalesAmount, SalesOrderDetail, SalesOrderNumber.
- Other Tables:** Shows City, CommuteDistance, CommuteDistanceSort, CountryRegionName, Education.

Clipboard: Shows recent items: STATE, StateAB, Zip Code.

File, Home, Help: Standard application navigation.

Clipboard: Paste, Cut, Copy, Get data, Excel, Power BI datasets, SQL Server, Enter data, Dataverse, Recent sources, Transform, Refresh data, Manage relationships, Manage roles, View as, Q&A setup, Language setup, Linguistic schema, Publish, Share.

Fields: Search bar, list of fields: TotalChildren, YearlyIncome, Location, Median Groups, MedianGroup, MedianGroupKey, Sales, BusinessEntityID, OrderDate, Product, ProductCategory, SalesAmount, SalesOrderDetail, SalesOrderNumber.

Globomantics Customer Analysis - Power BI De... Search

File Home Help

Cut Paste Copy Get data Excel Power BI datasets SQL Server Enter data Dataverse Recent sources Transform data Refresh data Manage relationships Manage roles View as Q&A setup Language A Linguistic schema A Publish Share

Clipboard Data Relationships Security Q&A Share

Customer AddressLine1 AddressLine2 AddressType BusinessEntityID City CommuteDistance CommuteDistanceSort CountryRegionName Education

Location Geography.LOGRECNO PLACE Place Name STATE StateAB Zip Code

Median Groups MedianGroup MedianGroupKey

Sales BusinessEntityID OrderDate Product ProductCategory SalesAmount

Fields Properties

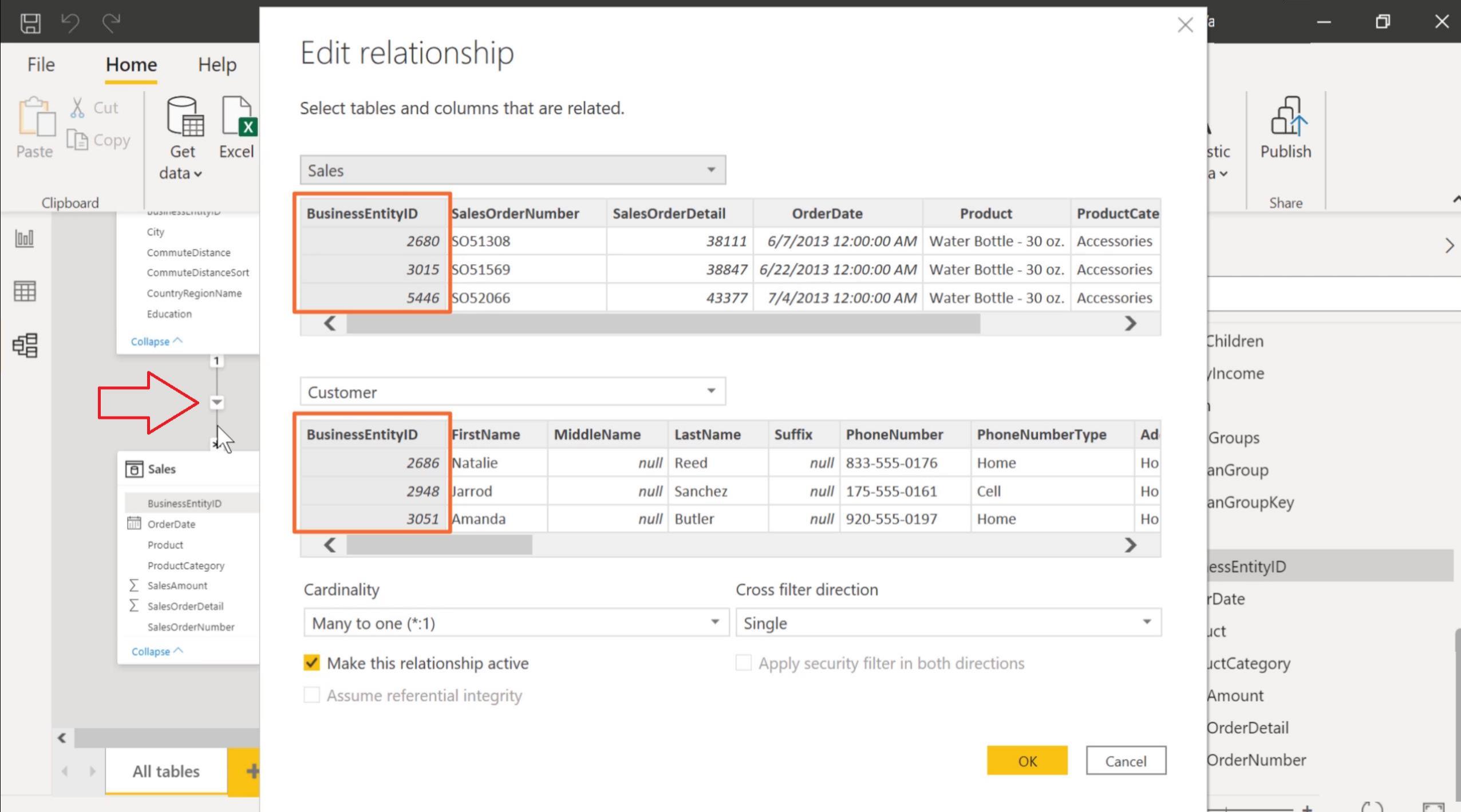
Search

> Customer
> Location
> Median Groups
> Sales
> Survey

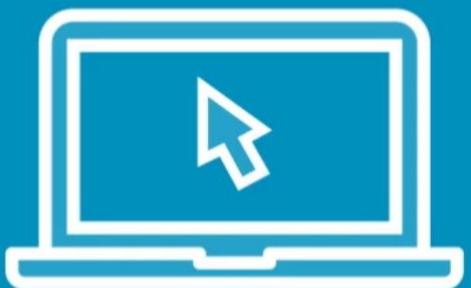
Drag **BusinessEntityID** from **Sales** table to **Customer** table **BusinessEntityID** field

All tables +

The screenshot shows the Power BI Data Model view with four tables listed: Customer, Location, Median Groups, and Sales. The Sales table is currently selected, as indicated by its darker background. A large blue curved arrow highlights the movement of the BusinessEntityID column from the Sales table to the Customer table. The Customer table's BusinessEntityID column is also highlighted with a cursor icon, indicating it's the target for the drag operation.



Demo



Create relationships

- Customer and Location
- Location and Survey

Globomantics Model Assessment

Customer

Location

Sales

Median Groups

Survey

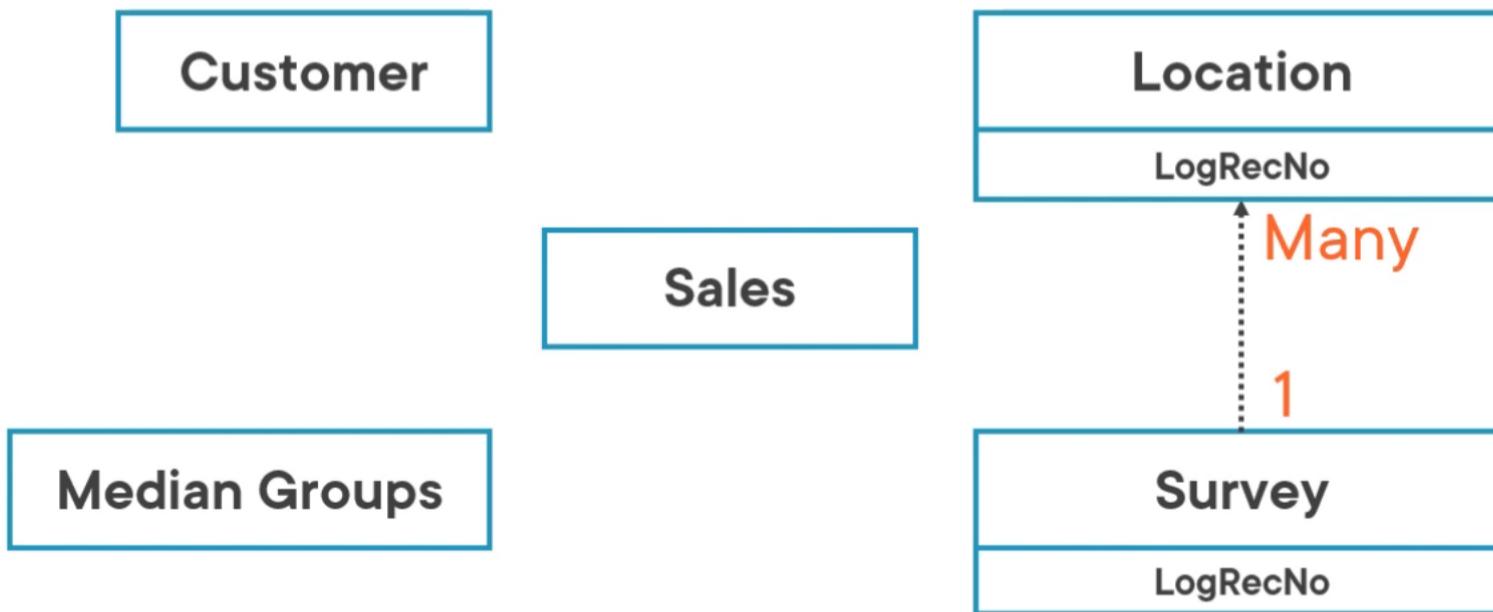
Globomantics Model Assessment

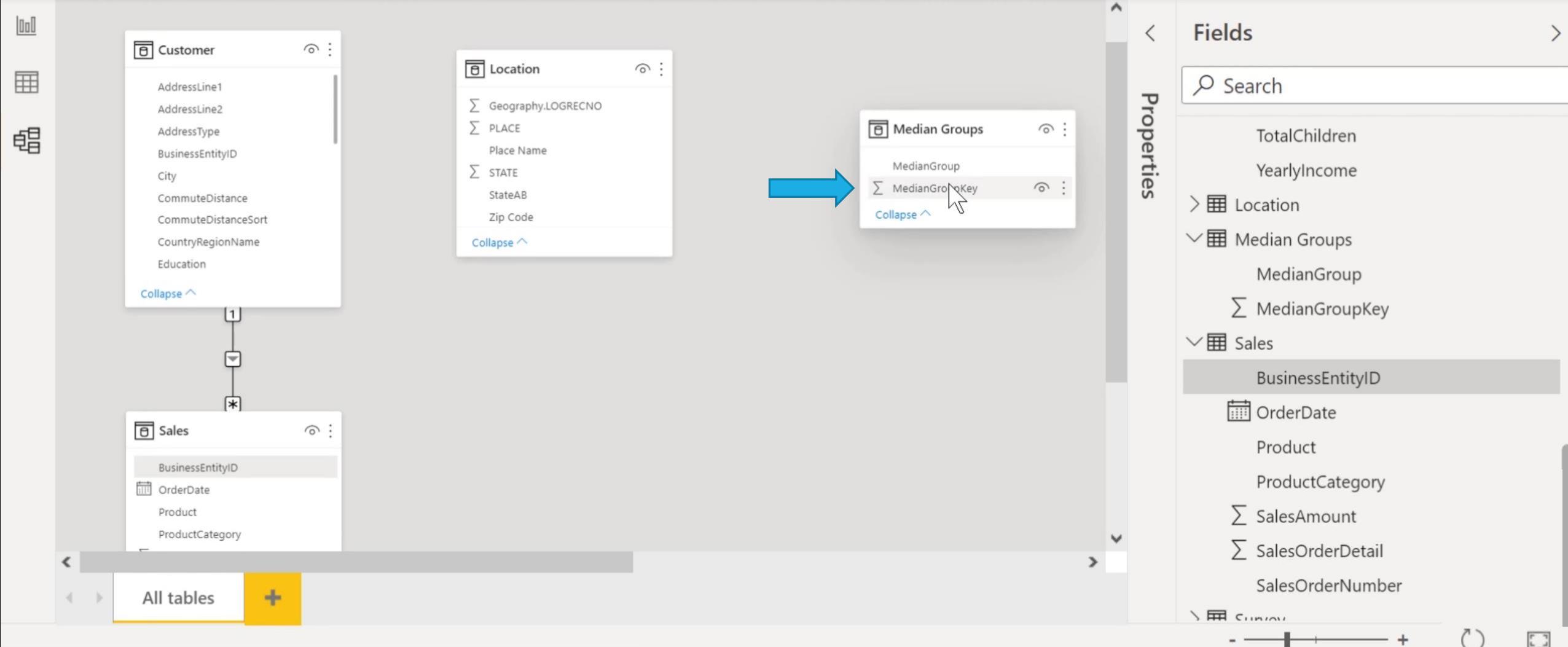
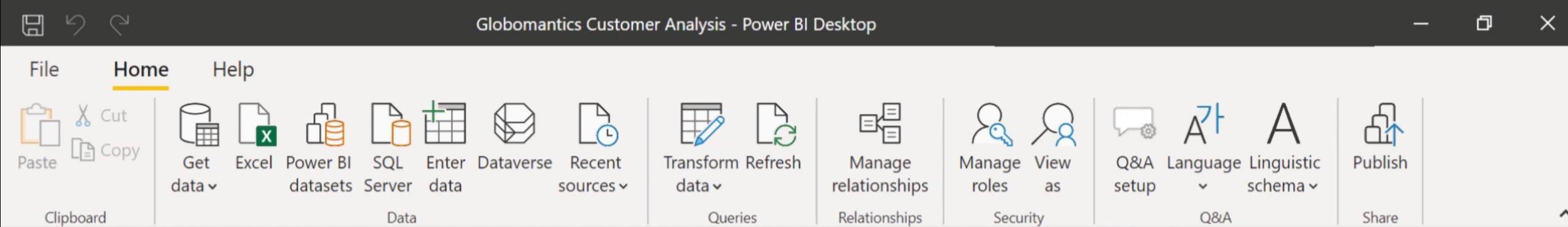
One-to-many relationship

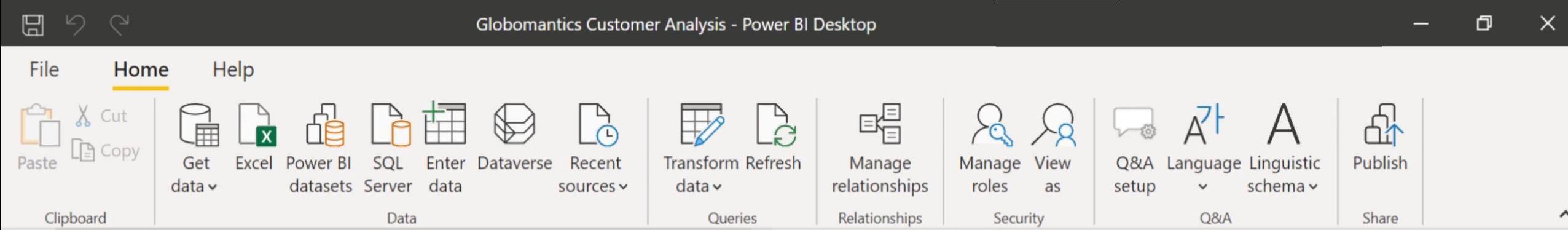


Globomantics Model Assessment

One-to-many relationship







Properties

Decimal places: 0

Advanced

Sort by column: MedianGroupKey (Default)

Data category: Uncategorized

Summarize by: None

Is nullable: Yes

Fields

Search: MedianGroupKey

Suffix, Title, TotalChildren, YearlyIncome

Location

- Geography.LOGRECNO
- PLACE
- Place Name
- STATE
- StateAB
- Zip Code

Median Groups

- MedianGroup
- MedianGroupKey

Sales

- BusinessEntityID
- OrderDate
- Product
- ProductCategory
- SalesAmount
- SalesOrderDetail

Customer

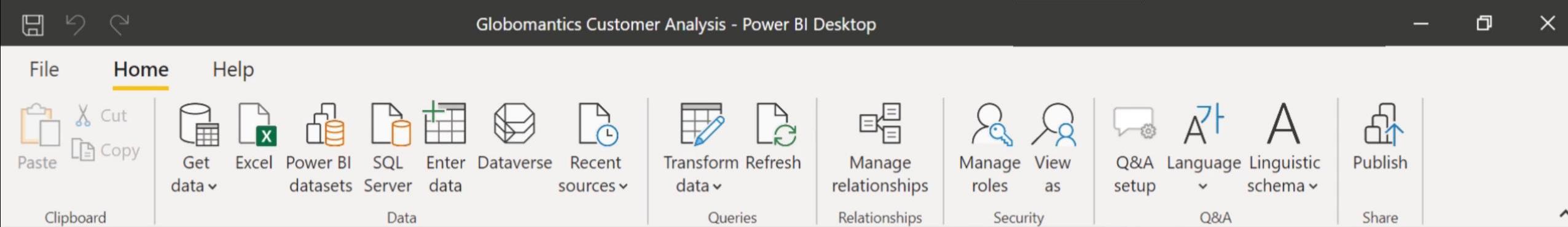
- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CommuteDistance
- CommuteDistanceSort
- CountryRegionName
- Education

Sales

- BusinessEntityID
- OrderDate
- Product
- ProductCategory

All tables

A blue arrow points from the "Summarize by" dropdown in the Properties panel towards the "Sales" table in the Fields pane.



Fields

Search:

- Suffix
- Title
- TotalChildren
- YearlyIncome

> **Location**

< **Properties**

Median Groups

- MedianGroup
- MedianGroupKey**

Collapse ^

Customer

- NumberCarsOwned
- NumberChildrenAtHome
- Occupation
- PhoneNumber
- PhoneNumberType
- PostalCode**
- StateProvinceName
- Suffix
- Title

Sales

- BusinessEntityID
- OrderDate
- Product
- ProductCategory

All tables +

Location

- Geography.LOGRECNO
- PLACE
- Place Name
- STATE
- StateAB
- Zip Code**

Median Groups

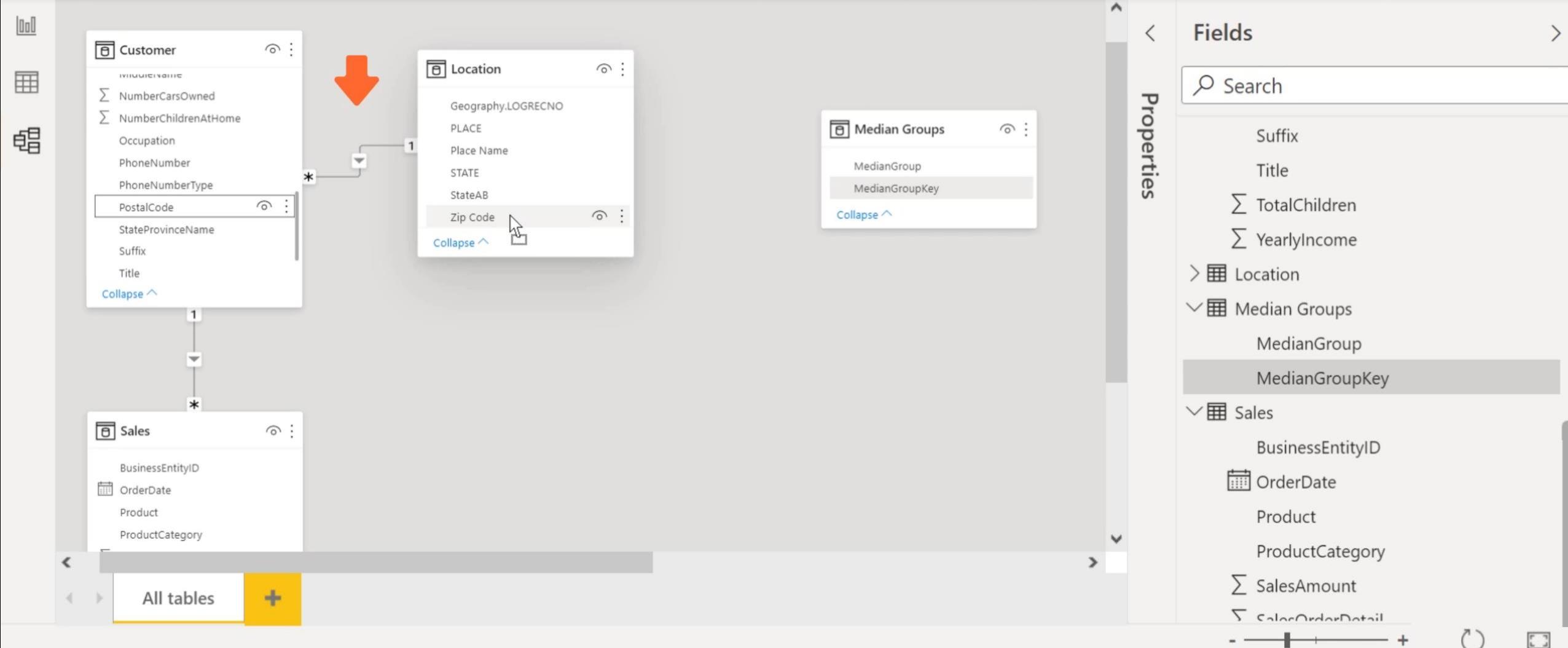
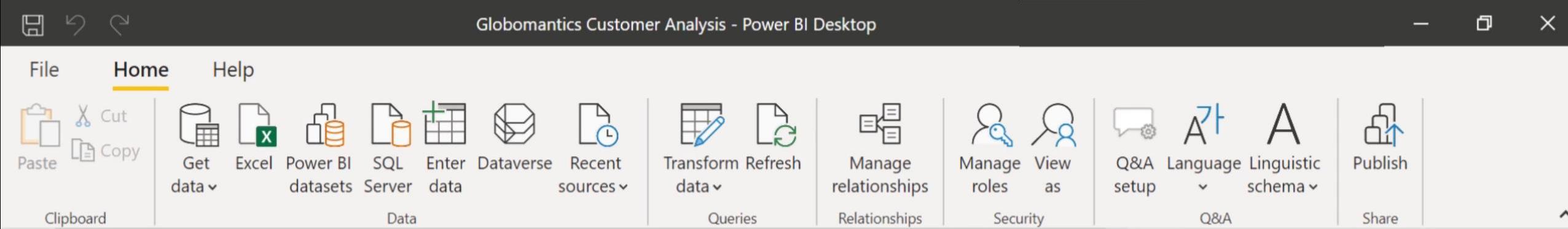
- MedianGroup
- MedianGroupKey**

Sales

- BusinessEntityID
- OrderDate
- Product
- ProductCategory
- SalesAmount
- SalesOrderDetail

Navigation: < > **All tables** +

Bottom right corner:



Edit relationship

Select tables and columns that are related.

Customer

BusinessEntityID	FirstName	MiddleName	LastName	Suffix	PhoneNumber	PhoneNumberType	Ad
2686	Natalie	null	Reed	null	833-555-0176	Home	Ho
2948	Jarrod	null	Sanchez	null	175-555-0161	Cell	Ho
3051	Amanda	null	Butler	null	920-555-0197	Home	Ho

Location

Zip Code	STATE	PLACE	Geography.LOGRECNO	Place Name	StateAB
90001	6	44000	110	Los Angeles city	Ca
90002	6	44000	110	Los Angeles city	Ca
90003	6	44000	110	Los Angeles city	Ca

Cardinality

Many to one (*:1)

Make this relationship active

Assume referential integrity

Cross filter direction

Single

Apply security filter in both directions

OK **Cancel**

Customer

- NumberCarsOwned
- NumberChildrenAtHome
- Occupation
- PhoneNumber
- PhoneNumberType
- PostalCode
- StateProvinceName
- Suffix
- Title

Sales

- BusinessEntityID
- OrderDate
- Product
- ProductCategory

All tables

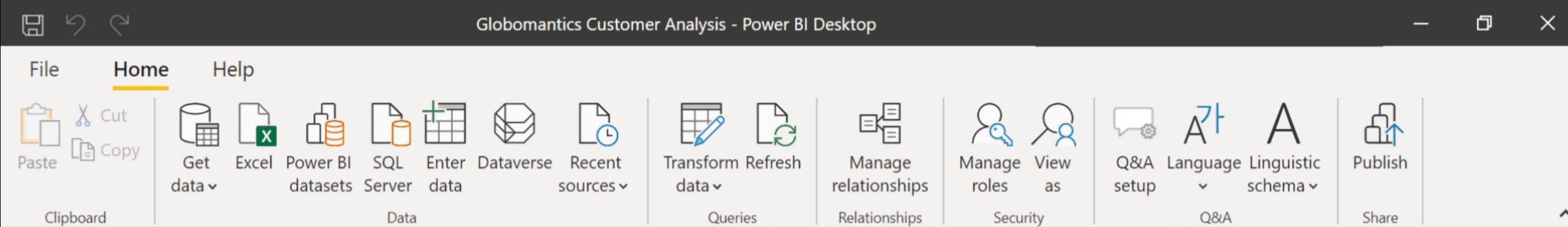


Diagram illustrating the relationships between tables in the Globomantics Customer Analysis dataset:

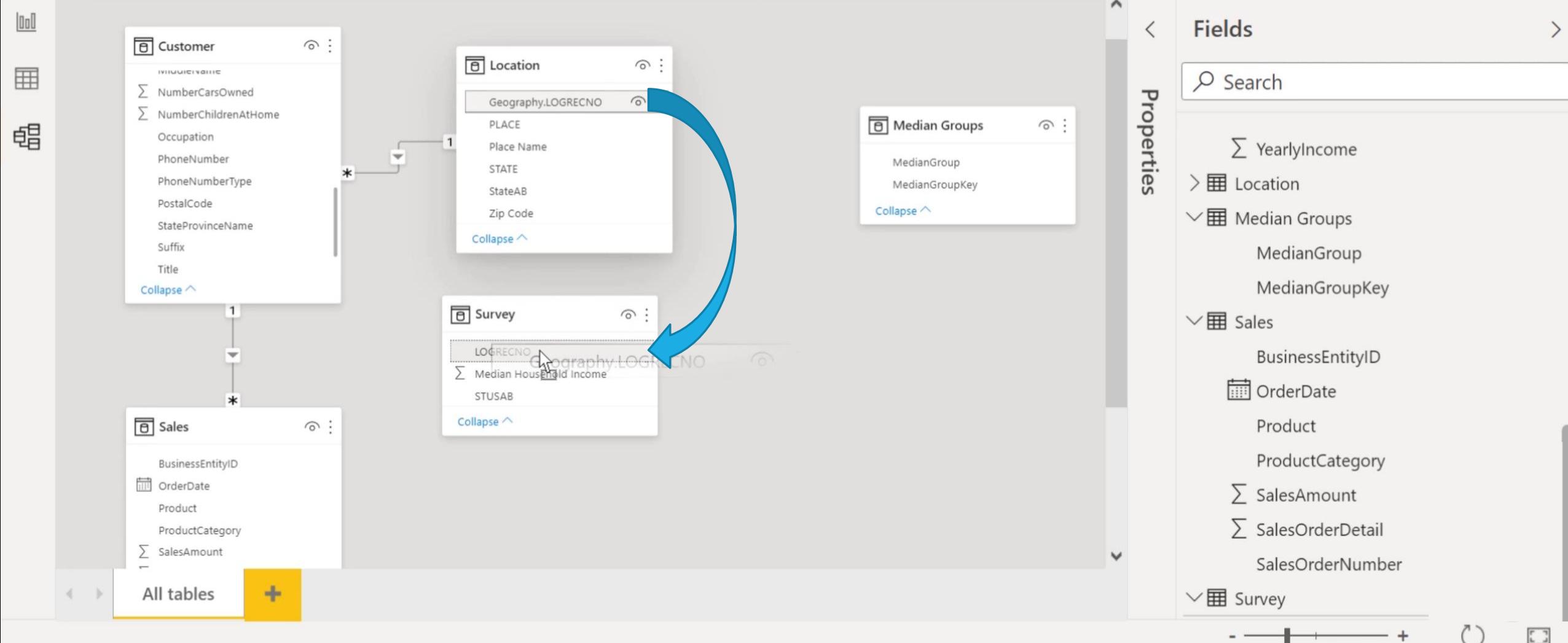
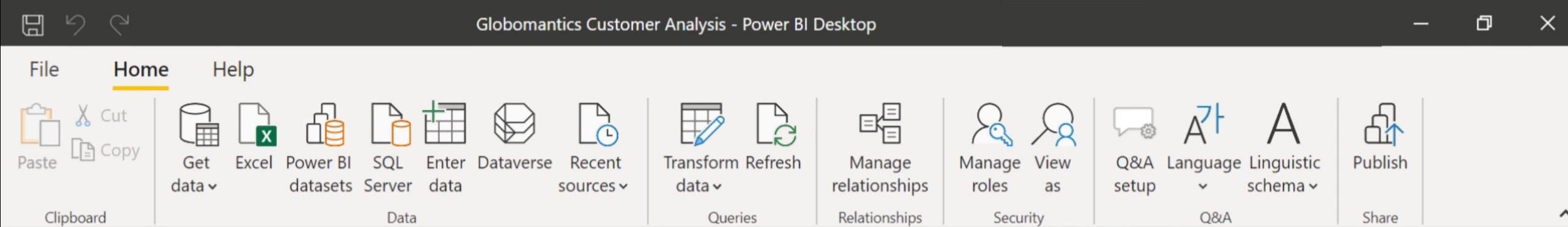
- Customer** (Primary Key: BusinessEntityID) is connected to **Location** (Relationship Type: 1 to many) and **Sales** (Relationship Type: many to many).
- Location** (Primary Key: LOGRECNO) contains fields: Geography.LOGRECNO, PLACE, Place Name, STATE, StateAB, Zip Code.
- Sales** (Primary Key: SalesOrderNumber) contains fields: BusinessEntityID, OrderDate, Product, ProductCategory.
- Survey** (Primary Key: STUSAB) contains fields: LOGRECNO, Median Household Income, STUSAB.

Properties pane (highlighted by blue arrows):

- Decimal places: 0
- Advanced: Sort by column (LOGRECNO (Default))
- Data category: Uncategorized
- Summarize by: None
- Is nullable: Yes

Fields pane (highlighted by blue arrow):

- Search: YearlyIncome
- Location
- Median Groups:
 - MedianGroup
 - MedianGroupKey
- Sales:
 - BusinessEntityID
 - OrderDate
 - Product
 - ProductCategory
 - SalesAmount
 - SalesOrderDetail
 - SalesOrderNumber
- Survey



Create relationship

Select tables and columns that are related.

Location

Zip Code	STATE	PLACE	Geography.LOGRECNO	Place Name	StateAB
90001	6	44000	110	Los Angeles city	Ca
90002	6	44000	110	Los Angeles city	Ca
90003	6	44000	110	Los Angeles city	Ca

Survey

STUSAB	LOGRECNO	Median Household Income
ca	1	61933
ca	2	62044
ca	3	59670

Relationship issue, close and Transform the data from Power Query Editor

Cardinality

Many to many (*:*)

Make this relationship active

Assume referential integrity

Cross filter direction

Both

Apply security filter in both directions

! This relationship has cardinality Many-Many. This should only be used if it is expected that neither column (Geography.LOGRECNO and LOGRECNO) contains unique values, and that the significantly different behavior of Many-many relationships is understood. [Learn more](#)

Customer

- NumberCarsOwned
- NumberChildrenAtHome
- Occupation
- PhoneNumber
- PhoneNumberType
- PostalCode
- StateProvinceName
- Suffix
- Title

Sales

- BusinessEntityID
- OrderDate
- Product
- ProductCategory
- SalesAmount

All tables

Paste **Cut** **Copy** **Get data** **Excel**

Clipboard

File Home Help

Share **Publish**

LOGRECNO values are unique with in the state same.

STUSAB	LOGRECNO	Median Household Income
wa	1	61366
wa	2	61480
wa	3	60771
wa	4	61740
wa	5	62910
wa	6	57356
wa	7	67464
wa	8	49261
wa	9	36791
wa	10	53207
wa	11	45538
wa	12	48078
wa	13	58093
wa	14	58093
wa	15	58093
wa	16	61741
wa	17	42223
wa	18	57890

STUSAB	LOGRECNO	Median Household Income
or	1	51075
or	2	50491
or	3	54274
or	4	51368
or	5	53109
or	6	51363
or	7	54634
or	8	42307
or	9	36515
or	10	44706
or	11	40902
or	12	42014
or	13	52486
or	14	65316
or	15	52006
or	16	42000
or	17	44918
or	18	36870

We need to learn a new technique to solve this problem

Demo



Concatenate fields in Customer table

- LastName and FirstName
- City and StateProvinceName

Concatenate fields in Location table

- StateAB and Geography.LogRecNo

Concatenate fields in Survey table

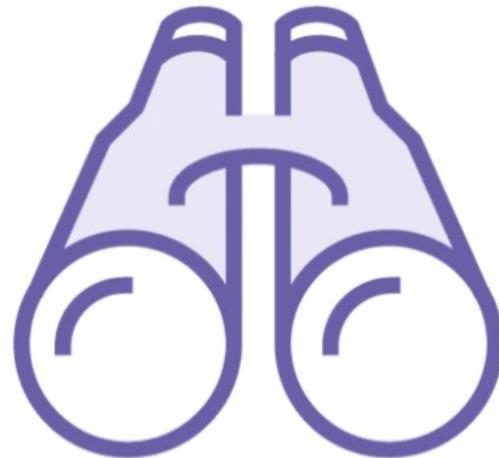
- STUSAB and LOGRECNO

Create relationship between Location and Survey

Defining New Columns

a + b → ab

Concatenation
Combine separate string
values into single string



Lookup
“Borrow” values from
another related table

1 → True

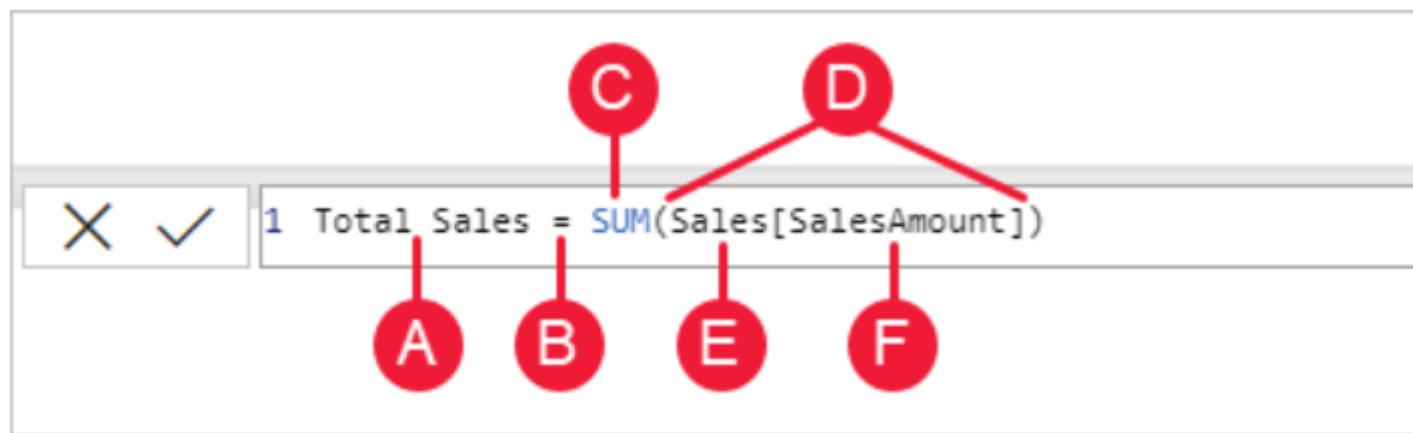
Translation
Convert one value into
another value

DAX

Data Analysis Expressions... a language for defining measures and columns in Power BI data models

Syntax

Before you create your own formulas, let's take a look at DAX formula syntax. Syntax includes the various elements that make up a formula, or more simply, how the formula is written. For example, here's a simple DAX formula for a measure:



This formula includes the following syntax elements:

- A. The measure name, **Total Sales**.
- B. The equals sign operator (=), which indicates the beginning of the formula. When calculated, it will return a result.
- C. The DAX function **SUM**, which adds up all of the numbers in the **Sales[SalesAmount]** column. You'll learn more about functions later.
- D. Parenthesis (), which surround an expression that contains one or more arguments. Most functions require at least one argument. An argument passes a value to a function.
- E. The referenced table, **Sales**.
- F. The referenced column, **[SalesAmount]**, in the Sales table. With this argument, the SUM function knows on which column to aggregate a SUM.

When trying to understand a DAX formula, it's often helpful to break down each of the elements into a language you think and speak every day. For example, you can read this formula as:

For the measure named Total Sales, calculate (=) the SUM of values in the [SalesAmount] column in the Sales table.

<https://learn.microsoft.com/en-us/power-bi/transform-model/desktop-quickstart-learn-dax-basics>

<https://learn.microsoft.com/en-us/power-bi/transform-model/desktop-quick-measures?source=recommendations>

<https://social.technet.microsoft.com/wiki/contents/articles/1088.dax-resource-center.aspx>

Task: Create a measure formula

1. Download [Download](#) and open the Contoso Sales Sample Power BI Desktop file.
2. In Report view, in the field list, right-click the **Sales** table, and then select **New Measure**.
3. In the formula bar, replace **Measure** by entering a new measure name, *Previous Quarter Sales*.
4. After the equals sign, type the first few letters **CAL**, and then double-click the function you want to use. In this formula, you want to use the **CALCULATE** function.

You'll use the **CALCULATE** function to filter the amounts we want to sum by an argument we pass to the **CALCULATE** function. This type of function is referred to as nesting functions. The **CALCULATE** function has at least two arguments. The first is the expression to be evaluated, and the second is a filter.

5. After the opening parenthesis (for the **CALCULATE** function, type **SUM** followed by another opening parenthesis (.

Next, we'll pass an argument to the **SUM** function.

Excel vs. DAX

	A	B
1		1/1/2021
2	Mountain-200 Black, 38	\$66,095.71
3	Road-250 Black, 44	\$58,640.40
4	Touring-1000 Blue, 46	\$60,078.56
5		

Excel

=B2 + B4

=SUM(B2:B4)

BusinessEntityID	SalesOrderNumber	...	SalesAmount
10553	SO43699		3,399.99
11211	SO43700		699.10
13514	SO43702		3,578.27
1756	SO43701		2,049.10

DAX

=COUNTRROWS(Sales)

=SUM('Sales'[SalesAmount])

Concatenating Columns

LastName	FirstName	City	StateProvinceName
Adams	Aaron	Downey	California
Adams	Adam	Newport Beach	California
Adams	Alex	Lake Oswego	Oregon
Adams	Alexandra	Burlingame	California
Adams	Amanda	Fremont	California
Adams	Andrea	West Covina	California

Single columns

Concatenating Columns

Produce new columns for reporting

CustomerName	CityState
Adams, Aaron	Downey, California
Adams, Adam	Newport Beach, California
Adams, Alex	Lake Oswego, Oregon
Adams, Alexandra	Burlingame, California
Adams, Amanda	Fremont, California
Adams, Andrea	West Covina, California

Concatenated columns

Concatenating Columns

Survey

STUSAB	LOGRECNO	...
ca	107	
ca	108	
ca	109	
ca	110	
ca	111	

Location

Zip Code	...	LOGRECNO	StateAb
1705		110	Ca
1709		110	Ca
1725		110	Ca
1739		110	Ca
1742		110	Ca

Concatenating Columns

Survey

STUSAB	LOGRECNO	...	RecordID
ca	107		ca-107
ca	108		ca-108
ca	109		ca-109
ca	110		ca-110
ca	111		ca-111

Location

Zip Code	...	LOGRECNO	StateAb	RecordID
1705		110	Ca	Ca-110
1709		110	Ca	Ca-110
1725		110	Ca	Ca-110
1739		110	Ca	Ca-110
1742		110	Ca	Ca-110

File Home Help Table tools

Name Customer

Structure

Calendars Relationships Calculations

Mark as date table v Manage relationships New measure Quick New measure column New table

Fields

Search

> Customer

> Location

> Median Groups

> Sales

> Survey

LOGRECNO

Σ Median Household I...

STUSAB

BusinessEntityID	FirstName	MiddleName	LastName	Suffix	PhoneNumber	PhoneNumberType	AddressType	AddressLine1
2686	Natalie		Reed		833-555-0176	Home	Home	1023 Hawkins Street
2948	Jarrod		Sanchez		175-555-0161	Cell	Home	1417 Roosevelt Aven
3051	Amanda		Butler		920-555-0197	Home	Home	2957 Tri-state Avenue
3639	Anna		Ward		939-555-0166	Home	Home	9531 Tri-state Ave
3825	Wyatt		Edwards		885-555-0175	Home	Home	4609 Rosebrook Ct.
4115	Miguel		Scott		399-555-0192	Cell	Home	975 Madrid
4628	Marcus		Thompson		239-555-0129	Cell	Home	3260 Fountainhead C
4683	Jodi		She		359-555-0153	Cell	Home	1510 American Beau
5197	Jack		Butler		193-555-0187	Cell	Home	8396 Grand Ct
5109	Luke		Gonzales		660-555-0153	Cell	Home	3519 Brookside Drive
5423	Jason		Shan		164-555-0140	Cell	Home	5004 Santa Rita Dr
5641	Luke		Perry		248-555-0172	Cell	Home	1641 Overhill Rd
5707	Thomas		Simmons		804-555-0129	Home	Home	1207 Erie Dr
6093	Beth		Torres		402-555-0128	Home	Home	9746 Gilardy Drive
6103	Noah		Washington		324-555-0153	Cell	Home	690 Carmel Drive
6320	Cameron		Diaz		517-555-0180	Home	Home	5408 South St
6631	Justin		Diaz		592-555-0152	Cell	Home	6386 Holiday Hill Dr
7160	Angelica		Hoyes		260-555-0148	Cell	Home	4313 Atherton Circle

File Home Help Table tools **Column tools**

Name Column

Format \$ % , .00 Auto

Summarization Sum Data category Uncategorized

Sort by column Sort

Data groups Groups

Manage relationships Relationships

New column Calculations

X ✓ 1 CustomerName = [LastName] & ", " & [FirstName]

CustomerID	CustomerName	AddressLine1	AddressLine2	City	StateProvince	PostalCode	CountryRegion	Phone	CustomerType	Demographic	Occupation	HomeOwnerFlag	NumberCarsOwned	CommuteDistance	EducationSort	CommuteDistanceSort	Title	Column
1	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	1	1-2 Miles	5	1-2 Miles	1	
2	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	0	2	1-2 Miles	5	1-2 Miles	1	
3	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
4	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
5	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
6	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	0	2	1-2 Miles	5	1-2 Miles	1	
7	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
8	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
9	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
10	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
11	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	0	2	1-2 Miles	5	1-2 Miles	1	
12	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
13	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
14	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
15	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	0	2	1-2 Miles	5	1-2 Miles	1	
16	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
17	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
18	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
19	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
20	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
21	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
22	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
23	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	0	2	1-2 Miles	5	1-2 Miles	1	
24	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
25	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
26	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
27	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
28	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
29	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
30	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
31	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	0	2	1-2 Miles	5	1-2 Miles	1	
32	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
33	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
34	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
35	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
36	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
37	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
38	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
39	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	0	2	1-2 Miles	5	1-2 Miles	1	
40	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
41	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
42	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
43	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
44	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
45	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	
46	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
47	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	0	2	1-2 Miles	5	1-2 Miles	1	
48	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	5-10 Miles	5	5-10 Miles	5	
49	John Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	1-2 Miles	5	1-2 Miles	1	
50	Jane Doe	123 Main St	Apartment 4A	Seattle	WA	98101	USA	(555) 123-4567	Business	High Income	Management	1	2	10+ Miles	5	10+ Miles	10	

[LastName] & ", " & [FirstName]

Education

Σ EducationSort

FirstName

Gender

File Home Help Table tools Column tools

Cut Paste Copy Get data v Power BI datasets SQL Server Enter data Dataverse Recent sources v Transform Refresh data v Manage relationships New measure Quick New measure column New table Manage roles View as Publish Clipboard Data Relationships Calculations Security Share

Fields

Search

Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City

CityState

CustomerName

Education

	HomeOwnerFlag	NumberCarsOwned	CommuteDistance	EducationSort	CommuteDistanceSort	Title	CustomerName	Column
t	1	2	1-2 Miles	5	1	Reed, Natalie		
t	0	2	1-2 Miles	5	1	Sanchez, Jarrod		
t	1	2	1-2 Miles	5	1	Butler, Amanda		
t	1	2	10+ Miles	5	10	Ward, Anna		
t	1	2	1-2 Miles	5	1	Edwards, Wyatt		
t	0	2	1-2 Miles	5	1	Scott, Miguel		
t	1	2	1-2 Miles	5	1	Thompson, Marcus		
t	1	2	10+ Miles	5	10	She, Jodi		
t	1	2	10+ Miles	5				
t	1	2	1-2 Miles	5				
t	0	2	1-2 Miles	5				
t	1	2	5-10 Miles	5				
t	1	2	10+ Miles	5				
t	1	2	1-2 Miles	5				
t	1	2	10+ Miles	5	10	Torres, Beth		
t	1	2	10+ Miles	5				
t	1	2	5-10 Miles	5	10	Washington, Noah		
t	1	2	5-10 Miles	5	5	Diaz, Cameron		
t	1	2	5-10 Miles	5	5	Diaz, Justin		
t	1	2	10+ Miles	5	10	Hoyos, Angelica		

File Home Help Table tools Column tools

Cut Copy Get data v Power BI datasets SQL Server Enter data Dataverse Recent sources v Transform Refresh data v Manage relationships New measure Quick New measure column New table Manage roles View as Publish Clipboard Data Relationships Calculations Security Share

Fields

Search

Customer

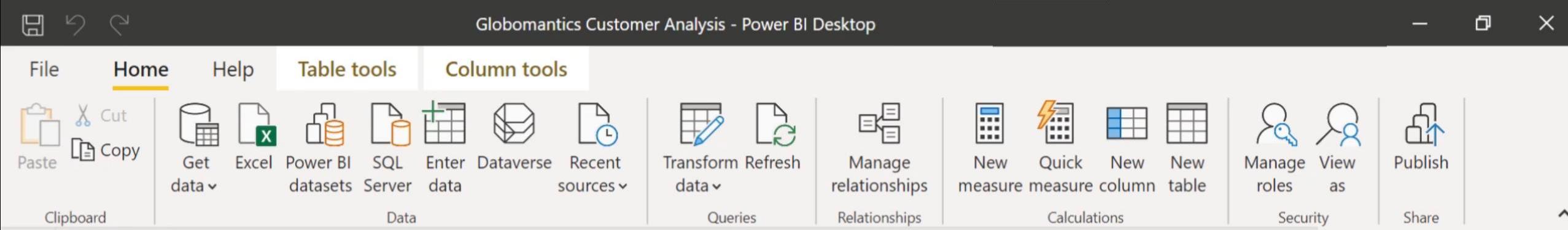
- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City

[City] & ", " & [StateProvinceName]

CustomerName

Education

	HomeOwnerFlag	NumberCarsOwned	CommuteDistance	EducationSort	CommuteDistanceSort	Title	CustomerName	Column
t	1	2	1-2 Miles	5	1	Reed, Natalie		
t	0	2	1-2 Miles	5	1	Sanchez, Jarrod		
t	1	2	1-2 Miles	5	1	Butler, Amanda		
t	1	2	10+ Miles	5	10	Ward, Anna		
t	1	2	1-2 Miles	5	1	Edwards, Wyatt		
t	0	2	1-2 Miles	5	1	Scott, Miguel		
t	1	2	1-2 Miles	5	1	Thompson, Marcus		
t	1	2	10+ Miles	5	10	She, Jodi		
t	1	2	10+ Miles	5				
t	1	2	1-2 Miles	5				
t	0	2	1-2 Miles	5				
t	1	2	5-10 Miles	5				
t	1	2	10+ Miles	5				
t	1	2	1-2 Miles	5				
t	1	2	10+ Miles	5	10	Torres, Beth		
t	1	2	10+ Miles	5				
t	1	2	5-10 Miles	5	5	Washington, Noah		
t	1	2	5-10 Miles	5	5	Diaz, Cameron		
t	1	2	5-10 Miles	5	5	Diaz, Justin		
t	1	2	10+ Miles	5	10	Hoyos, Angelica		



1 CityState = [City] & ", " & [StateProvinceName]

CustomerFlag	NumberCarsOwned	CommuteDistance	EducationSort	CommuteDistanceSort	Title	CustomerName	CityState
1	2	1-2 Miles	5		1	Reed, Natalie	Lebanon, Oregon
0	2	1-2 Miles	5		1	Sanchez, Jarrod	Beaverton, Oregon
1	2	1-2 Miles	5		1	Butler, Amanda	Milwaukie, Oregon
1	2	10+ Miles	5		10	Ward, Anna	Lake Oswego, Oregon
1	2	1-2 Miles	5		1	Edwards, Wyatt	Marysville, Washington
0	2	1-2 Miles	5		1	Scott, Miguel	Concord, California
1	2	1-2 Miles	5		1	Thompson, Marcus	Colma, California
1	2	10+ Miles	5		10	She, Jodi	Bremerton, Washington
1	2	10+ Miles	5		10	Butler, Jack	Woodland Hills, California
1	2	1-2 Miles	5		1	Gonzales, Luke	Fremont, California
0	2	1-2 Miles	5		1	Shan, Jason	Issaquah, Washington
1	2	5-10 Miles	5		5	Perry, Luke	Walla Walla, Washington
1	2	10+ Miles	5		10	Simmons, Thomas	Imperial Beach, California
1	2	1-2 Miles	5		1	Torres, Beth	Bellingham, Washington
1	2	10+ Miles	5		10	Washington, Noah	Oregon City, Oregon
1	2	5-10 Miles	5		5	Diaz, Cameron	Salem, Oregon
1	2	5-10 Miles	5		5	Diaz, Justin	Lebanon, Oregon
1	2	10+ Miles	5		10	Hayes, Angelica	Port Orchard, Washington

Fields

- Search
- Customer
 - AddressLine1
 - AddressLine2
 - AddressType
 - BusinessEntityID
 - City
 - CityState
 - CommuteDistance
 - CommuteDistance...
 - CountryRegionName
 - CustomerName
 - Education

File Home Help Table tools

Name Location

Mark as date table v Manage relationships New measure Quick New measure column New table

Structure Calendars Relationships Calculations

Zip Code STATE PLACE Geography.LOGRECNO Place Name StateAB

1	2	1-2 Miles	5	1		Reed, Natalie	Lebanon, Oregon	
0	2	1-2 Miles	5	1		Sanchez, Jarrod	Beaverton, Oregon	
1	2	1-2 Miles	5	1		Butler, Amanda	Milwaukie, Oregon	
1	2	10+ Miles	5	10		Ward, Anna	Lake Oswego, Oregon	
1	2	1-2 Miles	5	1		Edwards, Wyatt	Marysville, Washington	
0	2	1-2 Miles	5	1		Scott, Miguel	Concord, California	
1	2	1-2 Miles	5	1		Thompson, Marcus	Colma, California	
1	2	10+ Miles	5	10		She, Jodi	Bremerton, Washington	
1	2	10+ Miles	5	10		Butler, Jack	Woodland Hills, California	
1	2	1-2 Miles	5	1		Gonzales, Luke	Fremont, California	
0	2	1-2 Miles	5	1		Shan, Jason	Issaquah, Washington	
1	2	5-10 Miles	5	5		Perry, Luke	Walla Walla, Washington	
1	2	10+ Miles	5	10		Simmons, Thomas	Imperial Beach, California	
1	2	1-2 Miles	5	1		Torres, Beth	Bellingham, Washington	
1	2	10+ Miles	5	10		Washington, Noah	Oregon City, Oregon	
1	2	5-10 Miles	5	5		Diaz, Cameron	Salem, Oregon	
1	2	5-10 Miles	5	5		Diaz, Justin	Lebanon, Oregon	
1	2	10+ Miles	5	10		Hayes, Angelica	Port Orchard, Washington	

Fields

Search

> Customer

> Location

> Median Groups

> Sales

> Survey

LOGRECNO

Σ Median Household I...

STUSAB

File Home Help Table tools **Column tools**

Name Column Format Summarization Sum Data category Uncategorized Sort by column Data groups Manage relationships New column Calculations

123 Data type Whole number \$ % , .00 Auto Structure Formatting Properties Sort Groups Relationships Calculations

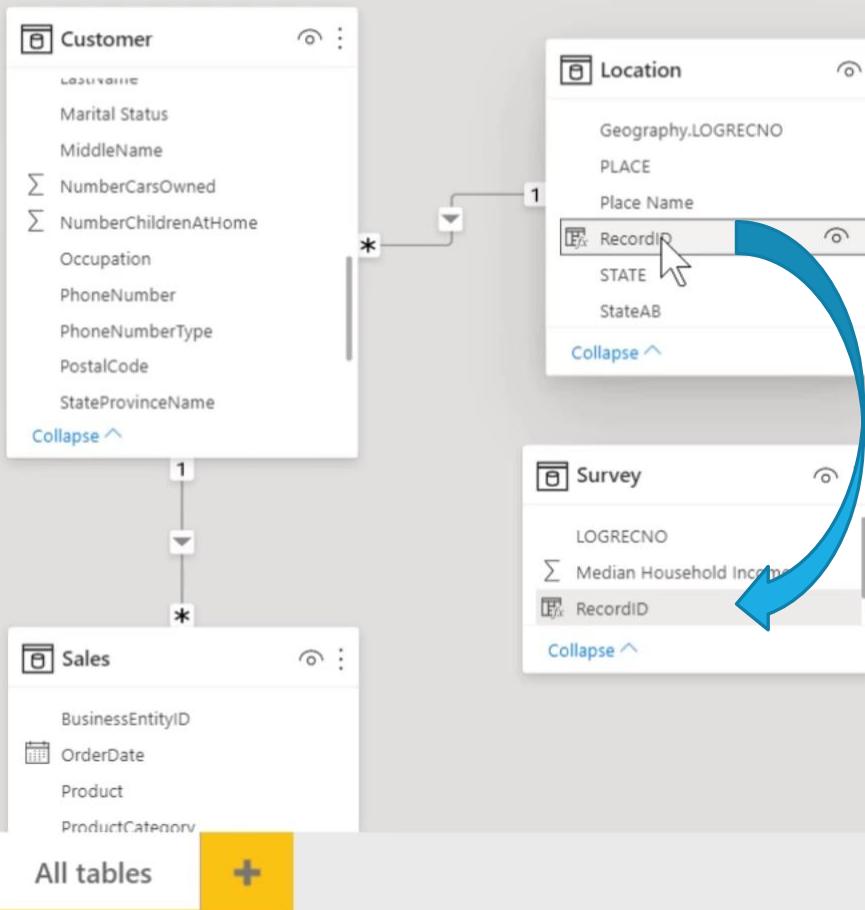
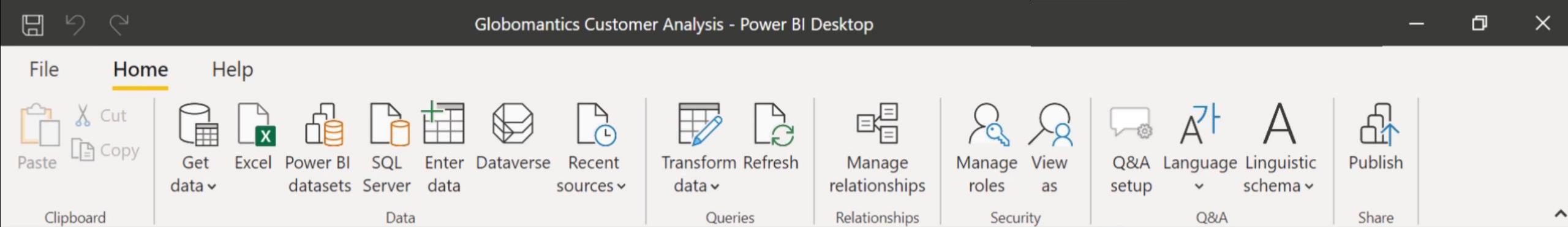
Fields

X ✓ 1 RecordID = [STUSAB] & "-" & [LOGRECNO]

STUSAB	LOGRECNO	Median Household Income
wa	1	61366
wa	2	61480
wa	3	60771
wa	4	61740
wa	5	62910
wa	6	57356
wa	7	67464
wa	8	49261
wa	9	36791
wa	10	53207
wa	11	45538
wa	12	48078
wa	13	58093
wa	14	50177
wa	15	46469
wa	16	61741
wa	17	42223
wa	18	57890

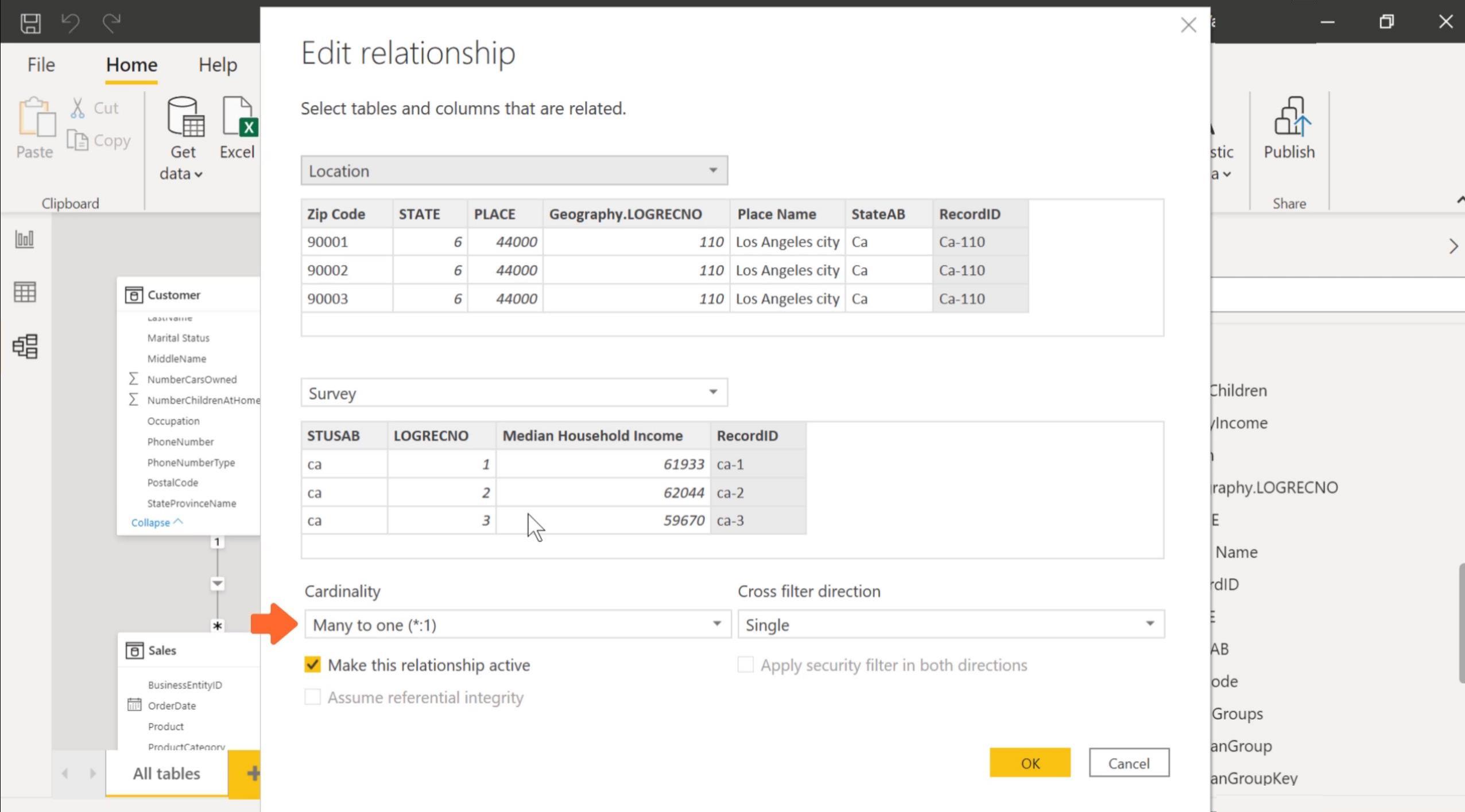
: Working on it

[STUSAB] & "-" & [LOGRECNO]

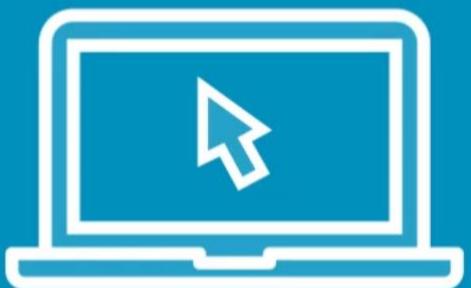


The Properties pane displays fields for the selected table:

Field	Type	Description
Title	Text	
Σ TotalChildren	Text	
Σ YearlyIncome	Text	
Location	Table	Geography.LOGRECNO PLACE Place Name RecordID STATE StateAB
Geography.LOGRECNO	Text	
PLACE	Text	
Place Name	Text	
RecordID	Text	
STATE	Text	
StateAB	Text	
Zip Code	Text	
Median Groups	Table	MedianGroup MedianGroupKey
MedianGroup	Text	
MedianGroupKey	Text	

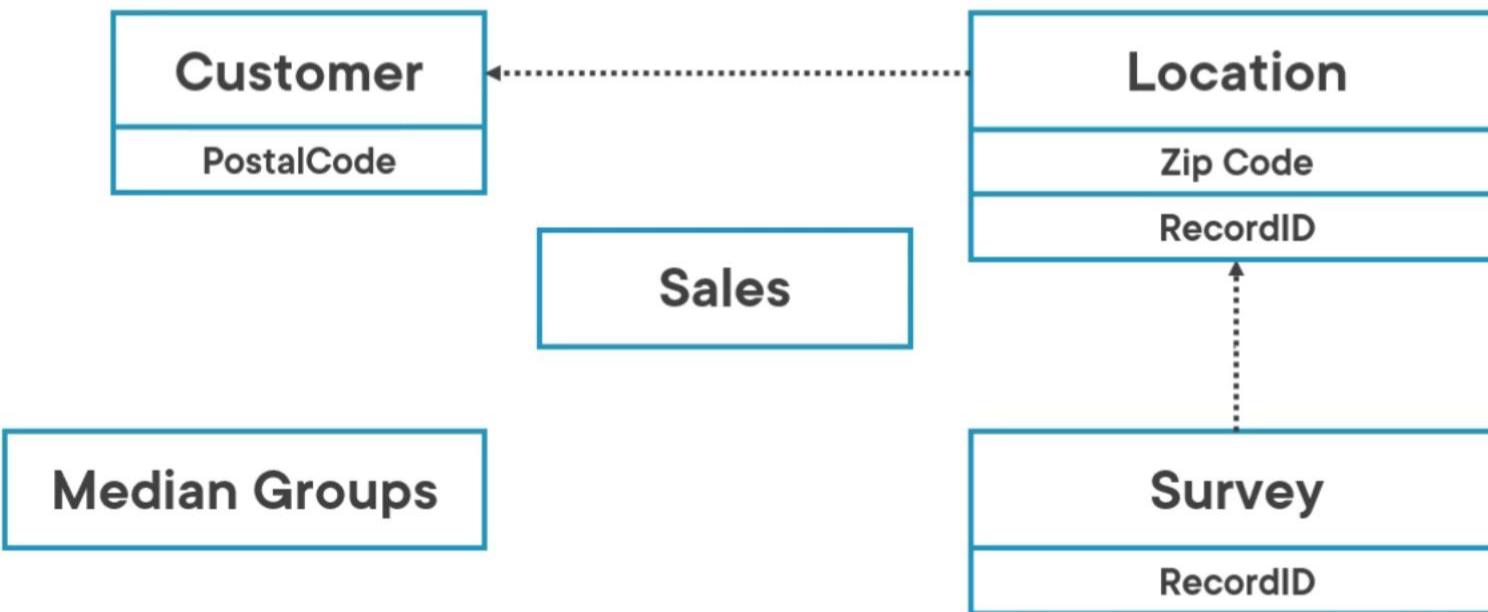


Demo

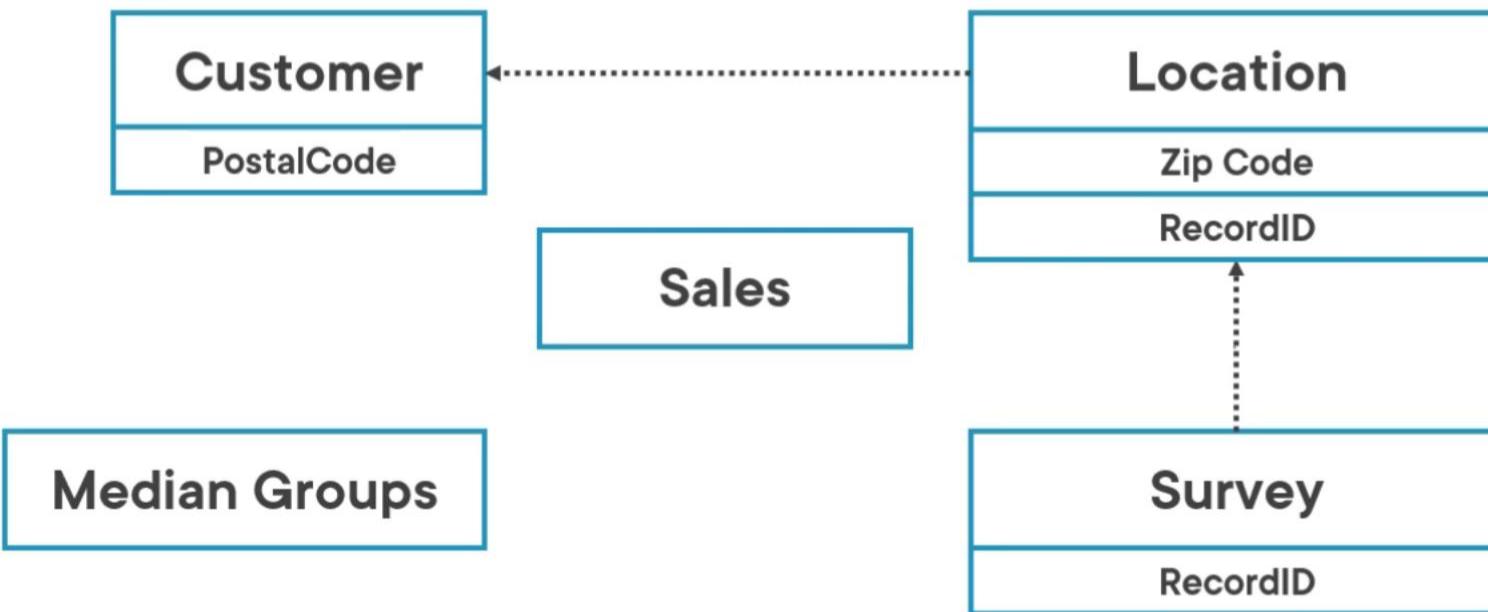


Create the Survey Median column in the Customer table using the RELATED function

Performing a Lookup to a Related Table

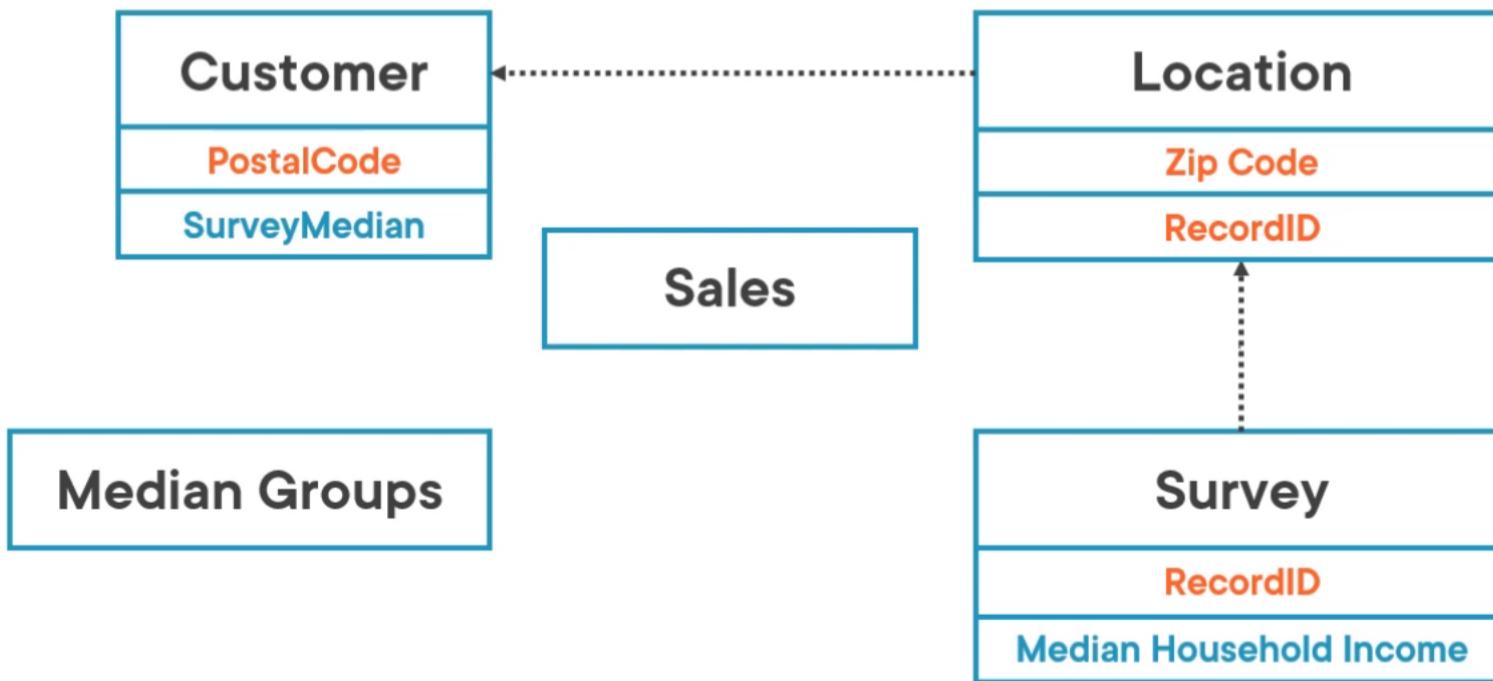


Performing a Lookup to a Related Table



Performing a Lookup to a Related Table

`SurveyMedian=RELATED(Survey[Median Household Income])`



1	SurveyMedian = rel
ned	▼ CommuteDistanc
2	1-2 Miles
2	1-2 Miles

5 1 Sanchez, Jarrod Beaverton,

RELATED
RELATEDTABLE Returns the related tables filtered so that it only includes the related rows.
USERELATIONSHIP

File Home Help Table tools **Column tools**

Name Column

Format \$ % , .00 Auto

Summarization Sum

Sort by column

Data type Whole number

Data category Uncategorized

Data groups

Manage relationships

Structure

Formatting

Properties

Sort

Groups

Relationships

New column

Calculations

X ✓ 1 SurveyMedian = RELATED(Survey[Median Household Income])

NumberCarsOwned	CommuteDistance	EducationSort	CommuteDistanceSort	Title	CustomerName	CityState	Column
2	1-2 Miles	5		1	Reed, Natalie	Lebanon, Oregon	
2	1-2 Miles	5		1	Sanchez, Jarrod	Beaverton, Oregon	
2	1-2 Miles	5		1	Butler, Amanda	Milwaukie, Oregon	
2	10+ Miles	5		10	Ward, Anna	Lake Oswego, Oregon	
2	1-2 Miles	5		1	Edwards, Wyatt	Marysville, Washington	
2	1-2 Miles	5		1	Scott, Miguel	Concord, California	
2	1-2 Miles	5		1	Thompson, Marcus	Colma, California	
2	10+ Miles	5		10	She, Jodi	Bremerton, Washington	
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	1-2 Miles	5		1			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
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2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
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2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
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2	5-10 Miles	5		5			
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2	10+ Miles	5		10			
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2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
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2	10+ Miles	5		10			
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2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
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2	1-2 Miles	5		1			
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2	5-10 Miles	5		5			
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2	10+ Miles	5		10			
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2	10+ Miles	5		10			
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2	10+ Miles	5		10			
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2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
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2	10+ Miles	5		10			
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2	10+ Miles	5		10			
2	5-10 Miles	5		5			
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2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
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2	10+ Miles	5		10			
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2	10+ Miles	5		10			
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2	10+ Miles	5		10			
2	1-2 Miles	5		1			
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2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
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2	10+ Miles	5		10			
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2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5		10			
2	1-2 Miles	5		1			
2	10+ Miles	5		10			
2	5-10 Miles	5		5			
2	5-10 Miles	5		5			
2	10+ Miles	5	</td				

File Home Help Table tools Column tools

Cut Paste Copy Get data v Excel Power BI datasets SQL Server Enter data Dataverse Recent sources v Transform Refresh data v Manage relationships New measure Quick New measure column New table Manage roles View as Publish Clipboard Data Queries Relationships Calculations Security Share

Fields

Search

Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CityState
- CommuteDistance
- CommuteDistance...

rCarsOwned	CommuteDistance	EducationSort	CommuteDistanceSort	Title	CustomerName	CityState	SurveyMedian
2	1-2 Miles	5		1	Reed, Natalie	Lebanon, Oregon	
2	1-2 Miles	5		1	Sanchez, Jarrod	Beaverton, Oregon	58546
2	1-2 Miles	5		1	Butler, Amanda	Milwaukie, Oregon	54624
2	10+ Miles	5		10	Ward, Anna	Lake Oswego, Oregon	54624
2	1-2 Miles	5		1	Edwards, Wyatt	Marysville, Washington	60629
2	1-2 Miles	5		1	Scott, Miguel	Concord, California	69853
2	1-2 Miles	5		1	Thompson, Marcus	Colma, California	80885
2	10+ Miles	5		10	She, Jodi	Bremerton, Washington	
2	10+ Miles	5		10	Butler, Jack	Woodland Hills, California	50544
2	1-2 Miles	5		1	Gonzales, Luke	Fremont, California	106921
2	1-2 Miles	5		1	Shan, Jason	Issaquah, Washington	95146
2	5-10 Miles	5		5	Perry, Luke	Walla Walla, Washington	

Customer[Postal Code] -> Location[Zip Code] ->
 Location[Record ID] -> Survey[Record ID]

File Home Help Table tools Column tools

Cut Paste Copy Get data v Excel Power BI datasets SQL Server Enter data Dataverse Recent sources v Transform Refresh data v Manage relationships New measure New measure column New table Manage roles View as Publish Clipboard Data Queries Relationships Calculations Security Share

Fields

Search

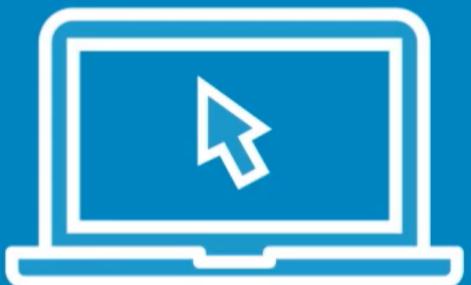
Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CityState
- CommuteDistance
- CommuteDistanceSort
- CustomerName
- Education
- EducationSort
- HomeTown
- IslandRegion
- LastName
- MedianHouseholdIncome
- MedianHouseholdIncomeSort
- OfficePhone
- PhoneNumber
- PostCode
- PostOfficeBox
- Region
- SurveyMedian
- Title
- UserName
- WorkPhone

1 SurveyMedian = RELATED(Survey[Median Household Income])

rCarsOwned	CommuteDistance	EducationSort	CommuteDistanceSort	Title	CustomerName	CityState	SurveyMedian
2	1-2 Miles	5	1	Reed, Natalie	Lebanon, Oregon		
2	1-2 Miles	5	1	Sanchez, Jarrod	Beaverton, Oregon	58546	
2	1-2 Miles	5	1	Butler, Amanda	Milwaukie, Oregon	54624	
2	10+ Miles	5	10	Ward, Anna	Lake Oswego, Oregon	54624	
2	1-2 Miles	5	1	Edwards, Wyatt	Marysville, Washington	60629	
2	1-2 Miles	5	1	Scott, Miguel	Concord, California	69853	
2	1-2 Miles	5	1	Thompson, Marcus	Colma, California	80885	
2	10+ Miles	5	10	She, Jodi	Bremerton, Washington		
2	10+ Miles	5	10	Butler, Jack	Woodland Hills, California	50544	
2	1-2 Miles	5	1	Gonzales, Luke	Fremont, California	106921	
2	1-2 Miles	5	1	Shan, Jason	Issaquah, Washington	95146	
2	5-10 Miles	5	5	Perry, Luke	Walla Walla, Washington		
2	10+ Miles	5	10	Simmons, Thomas	Imperial Beach, California	67799	
2	1-2 Miles	5	1	Torres, Beth	Bellingham, Washington	41879	
2	10+ Miles	5	10	Washington, Noah	Oregon City, Oregon		
2	5-10 Miles	5	5	Diaz, Cameron	Salem, Oregon	49055	
2	5-10 Miles	5	5	Diaz, Justin	Lebanon, Oregon		
2	10+ Miles	5	10	Hoyes, Angelica	Port Orchard, Washington		

Demo

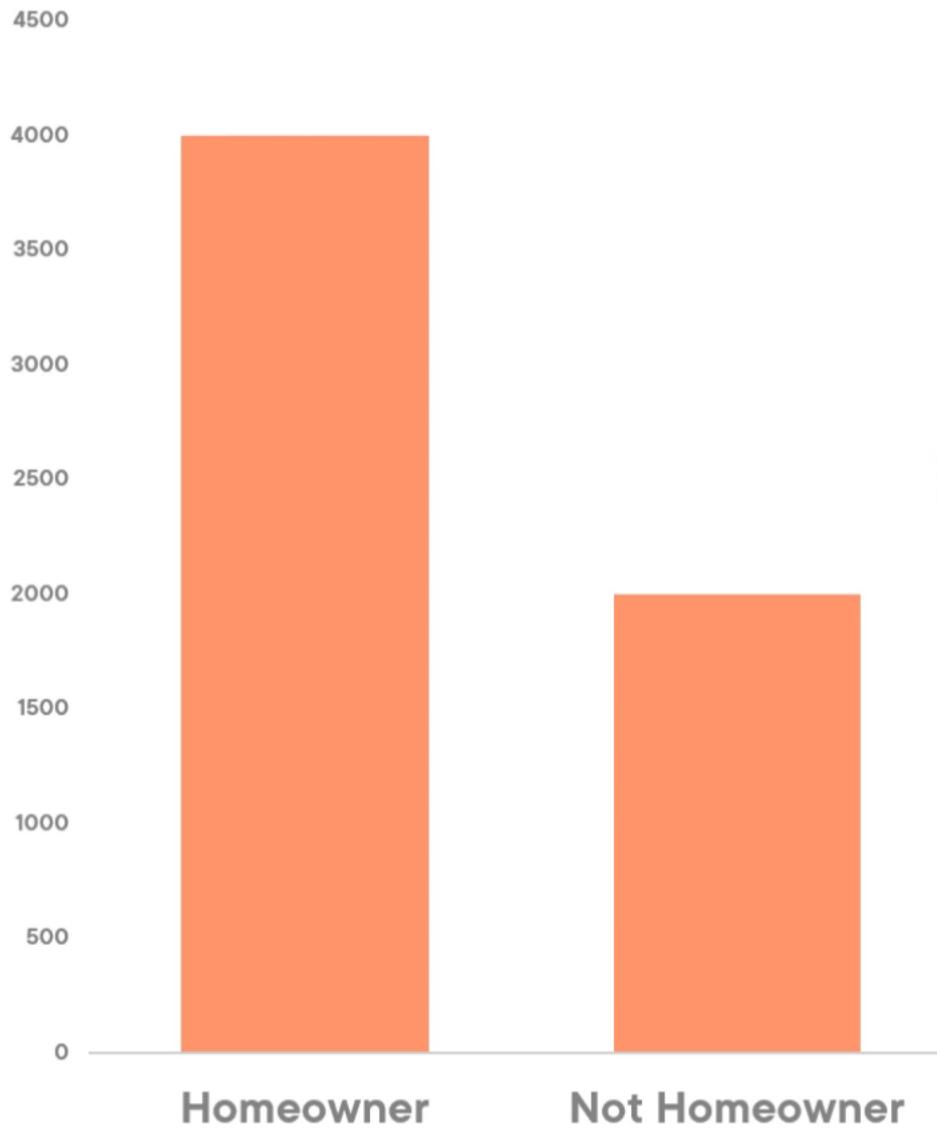


Use the IF function to create new columns

- Homeowner based on HomeownerFlag
- MedianGroupID based on comparison of YearlyIncome and SurveyMedian

Create relationship between Customer and Median Groups

Translating a Value



Homeowner =
if([HomeOwnerFlag]=0,
"Not Homeowner",
"Homeowner")

Logical Test

Result if test is true

Result if test is false

Translating a Value

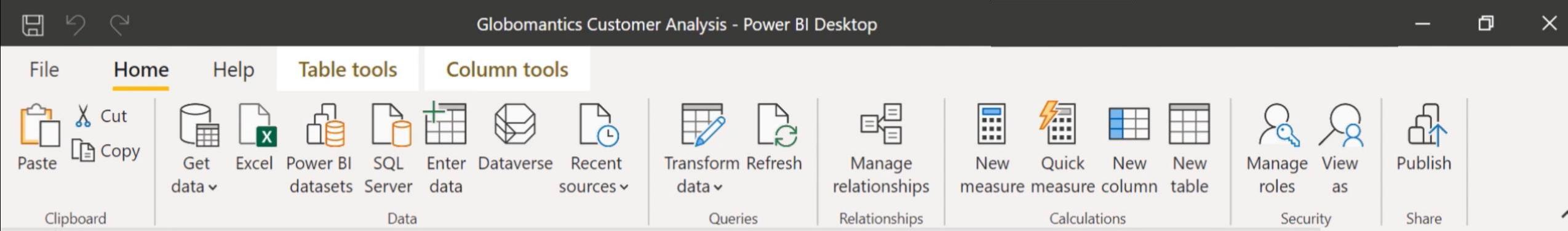
Median Groups

MedianGroupKey	MedianGroup
0	Unknown
1	Below Median
2	Above Median

Customer

BusinessEntityID	...	YearlyIncome	SurveyMedian	MedianGroupID
2686		50001		0
2948		50001	58546	1
6093		50001	41879	2
6631		50001		0
10423		50001	46556	2

```
MedianGroupID =  
if(isblank(Customer[SurveyMedian]),  
    0,  
    if(Customer[YearlyIncome]<  
        Customer[SurveyMedian],  
        1,  
        2)  
)
```



1 Homeowner = `if([HomeOwnerFlag]=0,"Not Homeowner", "Homeowner")`

Homeowned	CommuteDistance	EducationSort	CommuteDistanceSort	Title	CustomerName	CityState	SurveyMedian	Column
3	5-10 Miles		3	5	Clark, Robert	Ballard, Washington	70975	
2	0-1 Miles		2	0	Hernandez, Edward	Ballard, Washington	70975	
2	5-10 Miles		2	5	Williams, Kayla	Ballard, Washington	70975	
2	5-10 Miles		2	5	Srini, Johnathan	Ballard, Washington	70975	
2	5-10 Miles		2	5	Wang, Brent	Ballard, Washington	70975	
2	5-10 Miles		2	5	Reed, Chloe	Ballard, Washington	70975	
2	1-2 Miles		1	1	Rana, Ronald	Ballard, Washington	70975	
1	0-1 Miles		3	0	Wu, Jon	Ballard, Washington	70975	
1	2-5 Miles							
1	2-5 Miles							
0	1-2 Miles							
3	0-1 Miles							
3	10+ Miles							
3	0-1 Miles							
2	10+ Miles		2	10	Srini, Pamela	Ballard, Washington	70975	
3	5-10 Miles		3	5	Kelly, Kimberly	Ballard, Washington	70975	
4	1-2 Miles		3	1	Rana, George	Ballard, Washington	70975	
2	2-5 Miles		3	2	Raji, Chad	Ballard, Washington	70975	

If([HomeownerFlag]=0, "Not Homeowner", "Homeowner")

CountryRegionName
CustomerName

File Home Help Table tools Column tools

Cut Copy Get data Excel Power BI datasets SQL Server Enter data Dataverse Recent sources Transform Refresh data Manage relationships New measure Quick New measure column New table Manage roles View as Publish

Clipboard Data Queries Relationships Calculations Security Share

Fields

Search

Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City

If([YearlyIncome]<[SurveyMedian], 1, 2)

CustomerID	CustomerName	CityState	SurveyMedian	Homeowner	Column
1	Clark, Robert	Ballard, Washington	70975	Homeowner	
2	Hernandez, Edward	Ballard, Washington	70975	Not Homeowner	
3	Williams, Kayla	Ballard, Washington	70975	Homeowner	
4	Srini, Johnathan	Ballard, Washington	70975	Homeowner	
5	Wang, Brent	Ballard, Washington	70975	Homeowner	
6	Reed, Chloe	Ballard, Washington	70975	Homeowner	
7	Rana, Ronald	Ballard, Washington	70975	Not Homeowner	
8	Wu, Jon	Ballard, Washington	70975	Not Homeowner	
9	Green, Mason	Ballard, Washington	70975	Homeowner	
10	Nara, Christine	Ballard, Washington	70975	Homeowner	
11	Peterson, Paige	Ballard, Washington	70975	Homeowner	
12	Nath, Dustin	Ballard, Washington	70975	Homeowner	
13	Hu, Bianca	Ballard, Washington	70975	Homeowner	
14	Allen, Alex	Ballard, Washington	70975	Homeowner	
15	Srini, Pamela	Ballard, Washington	70975	Homeowner	
16	Kelly, Kimberly	Ballard, Washington	70975	Homeowner	
17	Rana, George	Ballard, Washington	70975	Homeowner	
18	Baji, Chad	Ballard, Washington	70975	Homeowner	

CityState	SurveyMedian	Homeowner	MedianGroupID
Port Orchard, Washi		Homeowner	2
Bremerton, Washing		Homeowner	2
Walla Walla, Washin		Homeowner	2
Oregon City, Oregon		Homeowner	2
Lebanon, Oregon		Homeowner	2
Port Orchard, Washi		Homeowner	2
Lynnwood, Washingt		Homeowner	2
Sedro Woolley, Wash		Homeowner	2
Burlingame, Californ		Homeowner	2
Woodburn, Oregon		Homeowner	2
Sedro Woolley, Wash		Homeowner	2
Spring Valley, Califor		Not Homeowner	2
Port Orchard, Washi		Homeowner	2
W. Linn, Oregon		Homeowner	2
Burien, Washington		Not Homeowner	2
Mill Valley, California		Not Homeowner	2
Mill Valley, California		Homeowner	2
Lebanon, Oregon		Homeowner	2

We need to write logic for where
SurveyMedian
is Empty

Expand DAX Query Editor

The screenshot shows the Power BI DAX Query Editor interface. At the top, there is a toolbar with icons for back, forward, and other navigation functions. Below the toolbar, a search bar contains the text "MedianGroupID". A code editor window displays the DAX formula: `1 MedianGroupID = if([YearlyIncome]<[SurveyMedian], 1, 2)`. To the right of the code editor is a table view showing two rows of data. The columns in the table are: EducationSort, CommuteDistanceSort, Title, CustomerName, CityState, SurveyMedian, Homeowner, and MedianGroupID. The MedianGroupID column is highlighted with a yellow background. Two blue arrows point to this column: one from the bottom labeled "Select the column" and one from the top labeled "Expand DAX Query Editor". The table data is as follows:

EducationSort	CommuteDistanceSort	Title	CustomerName	CityState	SurveyMedian	Homeowner	MedianGroupID
5	1		Hall, Alexandra	Port Orchard, Washi		Homeowner	2
5	10		She, Jodi	Bremerton, Washing		Homeowner	2

File Home Help Table tools Column tools

Name MedianGroupID Format Whole number

Data type Whole number \$ % , . 0 ^

Summarization Count Data category Uncategorized

Sort by column Sort Groups Manage relationships New column Calculations

Structure Formatting Properties

MedianGroupID =
if(ISBLANK([SurveyMedian]),
0,
if([YearlyIncome]<[SurveyMedian], 1, 2))

Fields

Search

Customer

AddressLine1
AddressLine2
AddressType
BusinessEntityID
City

If(ISBLANK([SurveyMedian]), 0, If([YearlyIncome]<[SurveyMedian], 1, 2))

CustomerName

EducationSort CommuteDistanceSort Title CustomerName CityState SurveyMedian Homeowner MedianGroupID Education

File Home Help Table tools **Column tools**

Name MedianGroupID Format Whole number

Data type Whole number

Structure

Formatting

Summarization Count

Data category Uncategorized

Sort by column

Sort

Data groups

Groups

Manage relationships

Relationships

New column

Calculations

X ✓ 1 MedianGroupID =

EducationSort	CommuteDistanceSort	Title	CustomerName	CityState	SurveyMedian	Homeowner	MedianGroupID
5	1		Hall, Alexandra	Port Orchard, Washington		Homeowner	0
5	10		She, Jodi	Bremerton, Washington		Homeowner	0
5	5		Perry, Luke	Walla Walla, Washington		Homeowner	0
5	10		Washington, Noah	Oregon City, Oregon		Homeowner	0
5	5		Diaz, Justin	Lebanon, Oregon		Homeowner	0
5	10		Hayes, Angelica	Port Orchard, Washington		Homeowner	0
5	5		Richardson, Sara	Lynnwood, Washington		Homeowner	0
5	10		Green, Julia	Sedro Woolley, Washington		Homeowner	0
5	10		Torres, Meredith	Burlingame, California		Homeowner	0
5	5		Allen, Mackenzie	Woodburn, Oregon		Homeowner	0
5	10		Martinez, Julia	Sedro Woolley, Washington		Homeowner	0
5	1		Thomas, Taylor	Spring Valley, California		Not Homeowner	0
5	5		Jenkins, Trevor	Port Orchard, Washington		Homeowner	0
5	5		Price, Spencer	W. Linn, Oregon		Homeowner	0
5	1		Gray, Brian	Burien, Washington		Not Homeowner	0
5	1		Cooper, Bryan	Mill Valley, California		Not Homeowner	0
5	5		Rogers, Jesse	Mill Valley, California		Homeowner	0
5	1		Perez, Thomas	Lebanon, Oregon		Homeowner	0

Fields

Search

Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CityState
- CommuteDistance
- CommuteDistance...
- CountryRegionName
- CustomerName
- Education

Table: Customer (7,780 rows) Column: MedianGroupID (3 distinct values)

File Home Help Table tools **Column tools**

Name MedianGroupID Format Whole number

Data type Whole number

Structure

Formatting

Σ Summarization **Don't summarize**

Set the default way to summarize values in this column (for example, a sum or an average) when it's used in a visual. To change the summarization in a specific visual, go to the Fields tab in the Visualizations pane. Setting it to Don't summarize will show the distinct values for the column.

Data groups Groups Relationships

New column Calculations

Fields

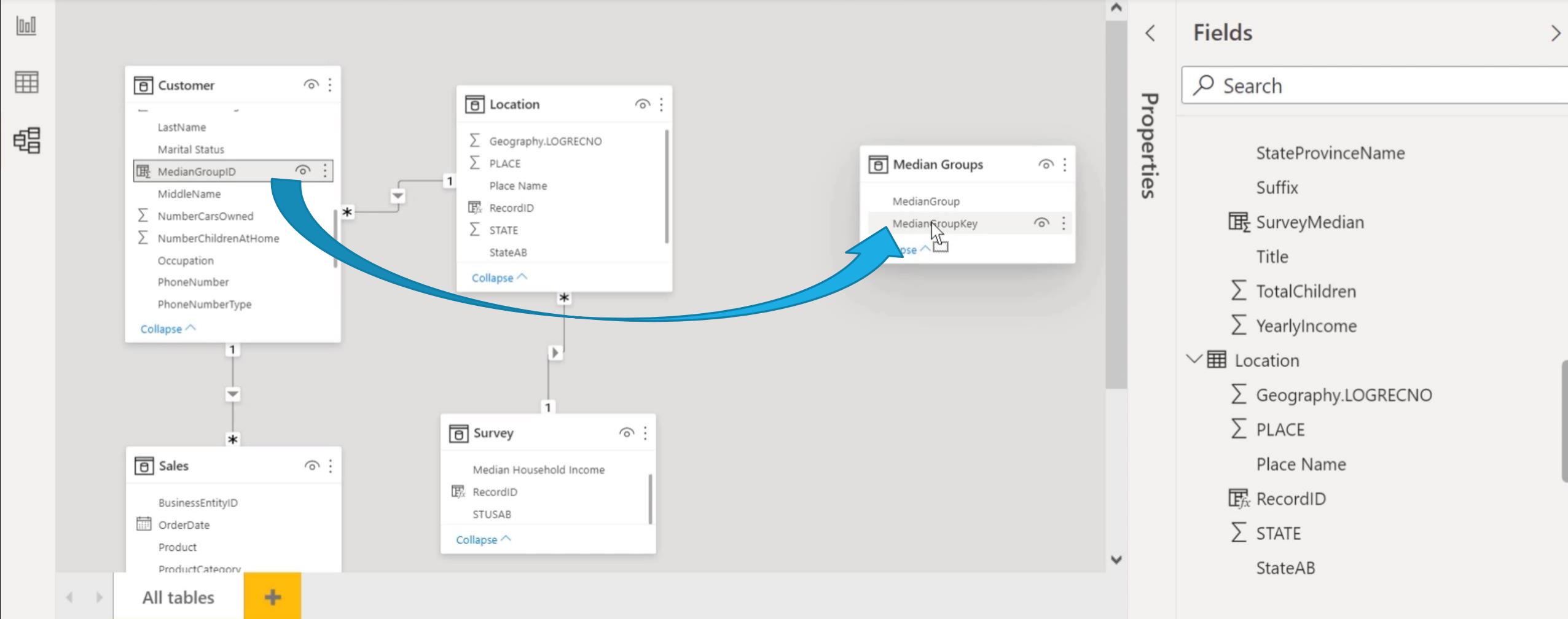
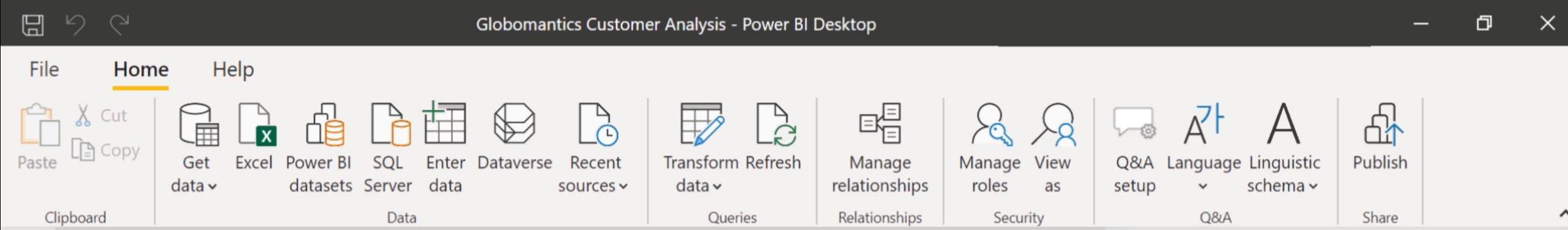
MedianGroupID

EducationSort CommuteDistanceSort Title CustomerName CityState SurveyMedian Homeowner MedianGroupID

5 1 Hall. Alexandra Port Orchard. Washington Homeowner 0

Search

This screenshot shows the 'Column tools' ribbon in Power BI. The 'Summarization' dropdown is highlighted with a red arrow, indicating the setting 'Don't summarize'. Below the ribbon, the 'Fields' pane lists several columns: EducationSort, CommuteDistanceSort, Title, CustomerName, CityState, SurveyMedian, Homeowner, and MedianGroupID. The 'MedianGroupID' column is currently selected, as shown by the yellow background. A second red arrow points to the 'Groups' button in the 'Data groups' section of the ribbon, which is part of the 'Manage relationships' group. The 'Groups' button has a small dropdown arrow next to it.



Edit relationship

Select tables and columns that are related.

Customer

teDistanceSort	Title	CustomerName	CityState	SurveyMedian	Homeowner	MedianGroupID
1	null	Reed, Natalie	Lebanon, Oregon	null	Homeowner	0
1	null	Sanchez, Jarrod	Beaverton, Oregon	58546	Not Homeowner	1
1	null	Butler, Amanda	Milwaukie, Oregon	54624	Homeowner	1

Median Groups

MedianGroupKey	MedianGroup
0	Unknown
1	Below Median
2	Above Median

Cardinality

Many to one (*:1)

Make this relationship active

Assume referential integrity

Cross filter direction

Single

Apply security filter in both directions

OK **Cancel**

Customer

- Last Name
- Marital Status
- Median Group ID
- Middle Name
- Number of Cars Owned
- Number of Children at Home
- Occupation
- Phone Number
- Phone Number Type

Sales

- Business Entity ID
- Order Date
- Product
- Product Category

All tables

Clipboard

File **Home** **Help**

Paste **Cut** **Copy** **Get data** **Excel**

Share **Publish**

Province Name

Survey Median

Children

Income

Demography LOGRECNO

E

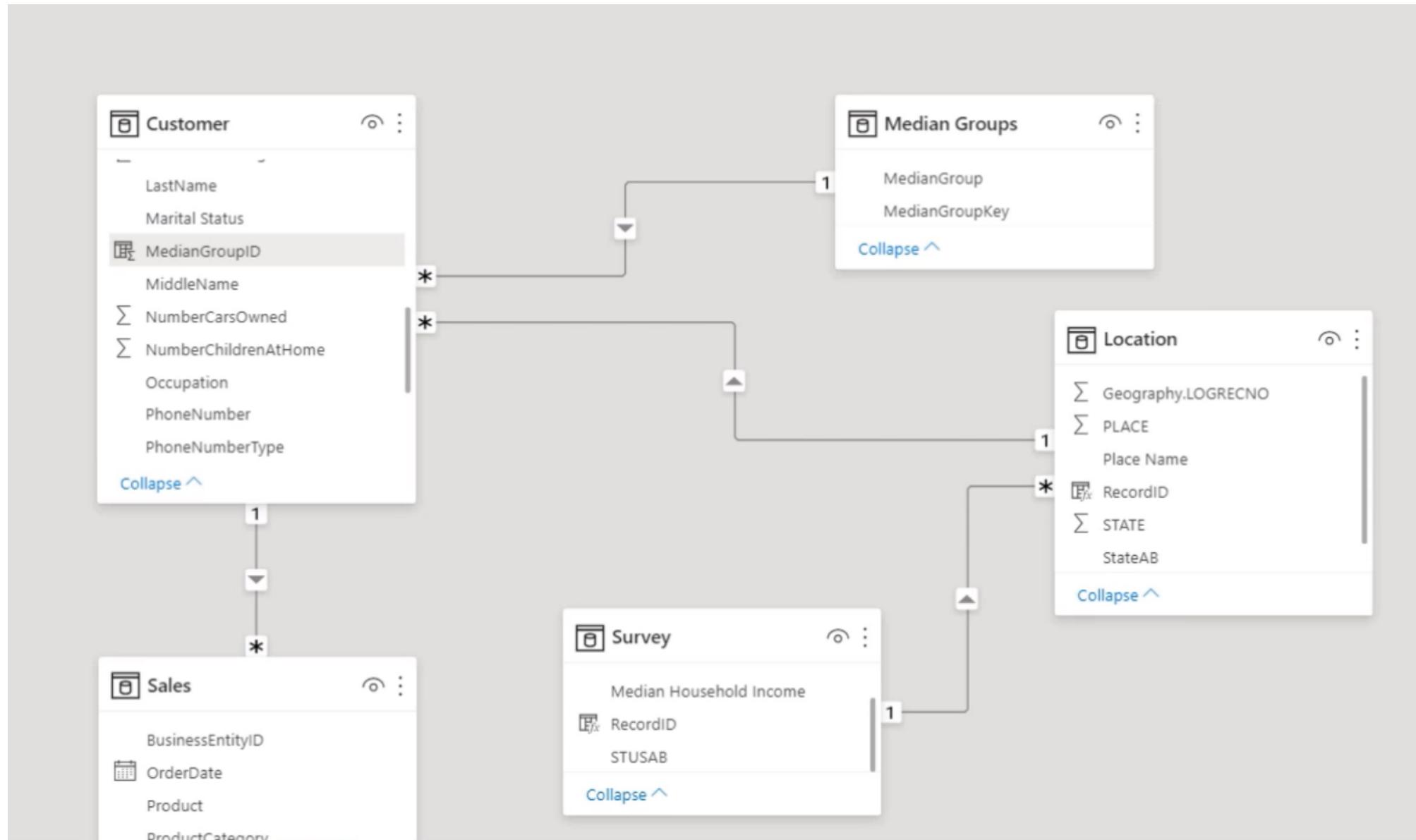
Name

Card ID

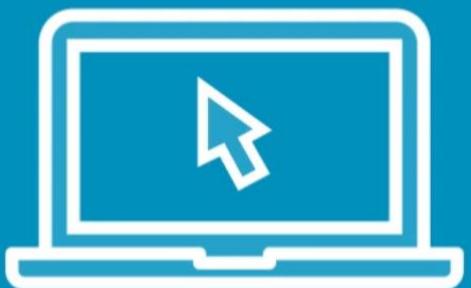
E

AB

Code



Demo



Add a date table

Create new columns

- Year
- MonthYear
- MonthSort

Create relationship between Sales and Date

Adding a Date Table

Date

Date	Year	MonthYear
1/1/2011	2011	Jan 2011
1/2/2011	2011	Jan 2011
1/3/2011	2011	Jan 2011
1/4/2011	2011	Jan 2011
1/5/2011	2011	Jan 2011
...		
2/1/2011	2011	Feb 2011
...		
10/1/2011	2011	Oct 2011

Date = CALENDARAUTO()

Year = YEAR([Date])

MonthYear =
FORMAT([Date], "MMM YYYY")

Adding a Date Table

Date		
Date	Year	MonthYear
2/1/2011	2011	Feb 2011
...		
1/1/2011	2011	Jan 2011
1/2/2011	2011	Jan 2011
1/3/2011	2011	Jan 2011
1/4/2011	2011	Jan 2011
1/5/2011	2011	Jan 2011
...		
10/1/2011	2011	Oct 2011

Text columns sort alphabetically
by default

Adding a Date Table

Date

Date	Year	MonthYear	MonthSort
1/1/2011	2011	Jan 2011	2011-1
1/2/2011	2011	Jan 2011	2011-1
1/3/2011	2011	Jan 2011	2011-1
1/4/2011	2011	Jan 2011	2011-1
1/5/2011	2011	Jan 2011	2011-1
...			
2/1/2011	2011	Feb 2011	2011-2
...			
10/1/2011	2011	Oct 2011	2011-10

MonthSort =
Year([Date]) & “-” &
Month([Date])

Adding a Date Table

Date

Date	Year	MonthYear	MonthSort
1/1/2011	2011	Jan 2011	2011-1
1/2/2011	2011	Jan 2011	2011-1
1/3/2011	2011	Jan 2011	2011-1
1/4/2011	2011	Jan 2011	2011-1
1/5/2011	2011	Jan 2011	2011-1
...			
10/1/2011	2011	Oct 2011	2011-10
...			
2/1/2011	2011	Feb 2011	2011-2

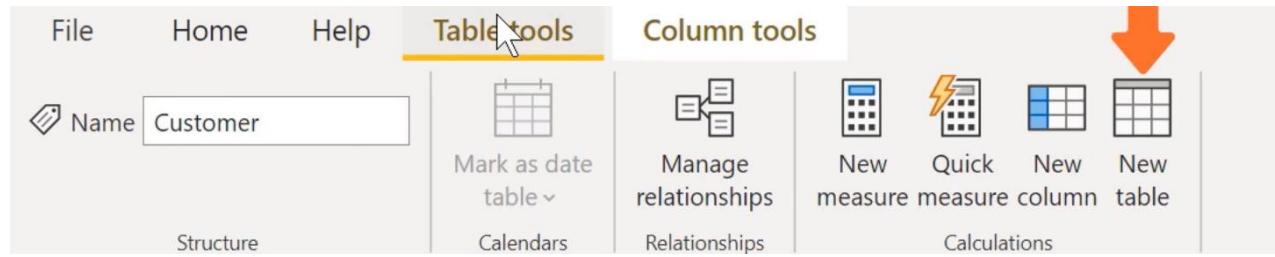
This concatenation is still text and
still sorts alphabetically

Adding a Date Table

Date

Date	Year	MonthYear	MonthSort
1/1/2011	2011	Jan 2011	2011-01
1/2/2011	2011	Jan 2011	2011-01
1/3/2011	2011	Jan 2011	2011-01
1/4/2011	2011	Jan 2011	2011-01
1/5/2011	2011	Jan 2011	2011-01
...			
2/1/2011	2011	Feb 2011	2011-02
...			
10/1/2011	2011	Oct 2011	2011-10

MonthSort =
Year([Date]) & “-” &
FORMAT(Month([Date]), “00”)



A screenshot of the 'New measure' dialog box. It shows a table with one column named 'Date'. The first 18 rows of the table are highlighted with a red box. The table has a header row and 18 data rows. The data starts with '1/1/2011 12:00:00 AM' and ends with '1/18/2011 12:00:00 AM'. The dialog box also includes a toolbar with icons for 'X', '✓', and a dropdown menu.

Date
1/1/2011 12:00:00 AM
1/2/2011 12:00:00 AM
1/3/2011 12:00:00 AM
1/4/2011 12:00:00 AM
1/5/2011 12:00:00 AM
1/6/2011 12:00:00 AM
1/7/2011 12:00:00 AM
1/8/2011 12:00:00 AM
1/9/2011 12:00:00 AM
1/10/2011 12:00:00 AM
1/11/2011 12:00:00 AM
1/12/2011 12:00:00 AM
1/13/2011 12:00:00 AM
1/14/2011 12:00:00 AM
1/15/2011 12:00:00 AM
1/16/2011 12:00:00 AM
1/17/2011 12:00:00 AM
1/18/2011 12:00:00 AM

File Home Help Table tools Column tools

Name Date \$% Format 55 PM (General Date) Summarization Don't summarize

Data type Date/time \$ % Common formats *3/14/2001 1:30:55 PM (General Date)

Structure Sort by column Data groups Manage relationships New column Calculations

Date 1 D *3/14/2001 (m/d/yyyy)

1/1/2011 12:00:00 AM
1/2/2011 12:00:00 AM
1/3/2011 12:00:00 AM
1/4/2011 12:00:00 AM
1/5/2011 12:00:00 AM
1/6/2011 12:00:00 AM
1/7/2011 12:00:00 AM
1/8/2011 12:00:00 AM
1/9/2011 12:00:00 AM
1/10/2011 12:00:00 AM
1/11/2011 12:00:00 AM
1/12/2011 12:00:00 AM
1/13/2011 12:00:00 AM
1/14/2011 12:00:00 AM
1/15/2011 12:00:00 AM
1/16/2011 12:00:00 AM
1/17/2011 12:00:00 AM
1/18/2011 12:00:00 AM

*3/14/2001 (m/d/yyyy)
03/14/2001 (mm/dd/yyyy)
14/03/2001 (dd/mm/yyyy)
2001-03-14 13:30:55 (yyyy-mm-dd hh:nn:ss)
2001-03-14 (yyyy-mm-dd)
2001-03 (yyyy-mm)

Date formats Wednesday, March 14, 2001 (dddd, mmmm d, yyyy)
March 14, 2001 (mmmm d, yyyy)
Wednesday, 14 March, 2001 (dddd, d mmmm, yyyy)
14 March, 2001 (d mmmm, yyyy)
3/14/01 (m/d/yy)
03/14/01 (mm/dd/yy)
01/03/14 (yy/mm/dd)
14-Mar-01 (dd-mmm-yy)

Fields Search Customer Date Date Location Median Groups Sales Survey

Table: Date (1,461 rows) Column: Date (1,461 distinct values), March 2001 (mmmm vvvv)

File Home Help Table tools Column tools

Cut Paste Copy Get data v Excel Power BI datasets SQL Server Enter Data Dataverse Recent sources v Transform Refresh data v Manage relationships New measure New measure column New table Manage roles View as Publish Clipboard Data Relationships Calculations Security Share

Fields

Search

> Customer

✓ Date

> Date

■ Year

> Location

> Median Groups

> Sales

> Survey

Date	Year
1/1/2011	2011
1/2/2011	2011
1/3/2011	2011
1/4/2011	2011
1/5/2011	2011
1/6/2011	2011
1/7/2011	2011
1/8/2011	2011
1/9/2011	2011
1/10/2011	2011
1/11/2011	2011
1/12/2011	2011
1/13/2011	2011
1/14/2011	2011
1/15/2011	2011
1/16/2011	2011
1/17/2011	2011
1/18/2011	2011

Table: Date (1,461 rows) Column: Year (4 distinct values)

File Home Help Table tools Column tools

Cut Paste Copy Get data v Excel Power BI datasets SQL Server Enter Data Dataverse Recent sources v Transform Refresh data v Manage relationships New measure New measure column New table Manage roles View as Publish Clipboard Data Relationships Calculations Security Share

X ✓ 1 MonthYear = format([Date], "MMM YYYY")

Date	Year	MonthYear
1/1/2011	2011	Jan 2011
1/2/2011	2011	Jan 2011
1/3/2011	2011	Jan 2011
1/4/2011	2011	Jan 2011
1/5/2011	2011	Jan 2011
1/6/2011	2011	Jan 2011
1/7/2011	2011	Jan 2011
1/8/2011	2011	Jan 2011
1/9/2011	2011	Jan 2011
1/10/2011	2011	Jan 2011
1/11/2011	2011	Jan 2011
1/12/2011	2011	Jan 2011
1/13/2011	2011	Jan 2011
1/14/2011	2011	Jan 2011
1/15/2011	2011	Jan 2011
1/16/2011	2011	Jan 2011
1/17/2011	2011	Jan 2011
1/18/2011	2011	Jan 2011

Fields

Search

> Customer

✓ Date

> Date

fx MonthYear

Σ Year

> Location

> Median Groups

> Sales

> Survey

File Home Help Table tools Column tools

Cut Paste Copy Get data v Excel Power BI datasets SQL Server Enter Data Dataverse Recent sources Transform Refresh data Manage relationships New measure New measure column New table Manage roles View as Publish Clipboard Data Relationships Calculations Security Share

X ✓ 1 MonthSort = Year([Date]) & "-" & Format(Month([Date]), "00")

Date	Year	MonthYear	MonthSort
1/1/2011	2011	Jan 2011	2011-01
1/2/2011	2011	Jan 2011	2011-01
1/3/2011	2011	Jan 2011	2011-01
1/4/2011	2011	Jan 2011	2011-01
1/5/2011	2011	Jan 2011	2011-01
1/6/2011	2011	Jan 2011	2011-01
1/7/2011	2011	Jan 2011	2011-01
1/8/2011	2011	Jan 2011	2011-01
1/9/2011	2011	Jan 2011	2011-01
1/10/2011	2011	Jan 2011	2011-01
1/11/2011	2011	Jan 2011	2011-01
1/12/2011	2011	Jan 2011	2011-01
1/13/2011	2011	Jan 2011	2011-01
1/14/2011	2011	Jan 2011	2011-01
1/15/2011	2011	Jan 2011	2011-01
1/16/2011	2011	Jan 2011	2011-01
1/17/2011	2011	Jan 2011	2011-01
1/18/2011	2011	Jan 2011	2011-01

Fields

Search

> Customer

✓ Date

> Date

fx MonthSort

fx MonthYear

Σ Year

> Location

> Median Groups

> Sales

> Survey

File

Home

Help

Paste Cut Copy

Get data

Excel

Power BI datasets

SQL Server

Enter data

Dataverse

Recent sources

Transform

Refresh

data

Manage relationships

Manage roles

View as

Q&A setup

Language

A Linguistic schema

Publish

Share

Clipboard

Data

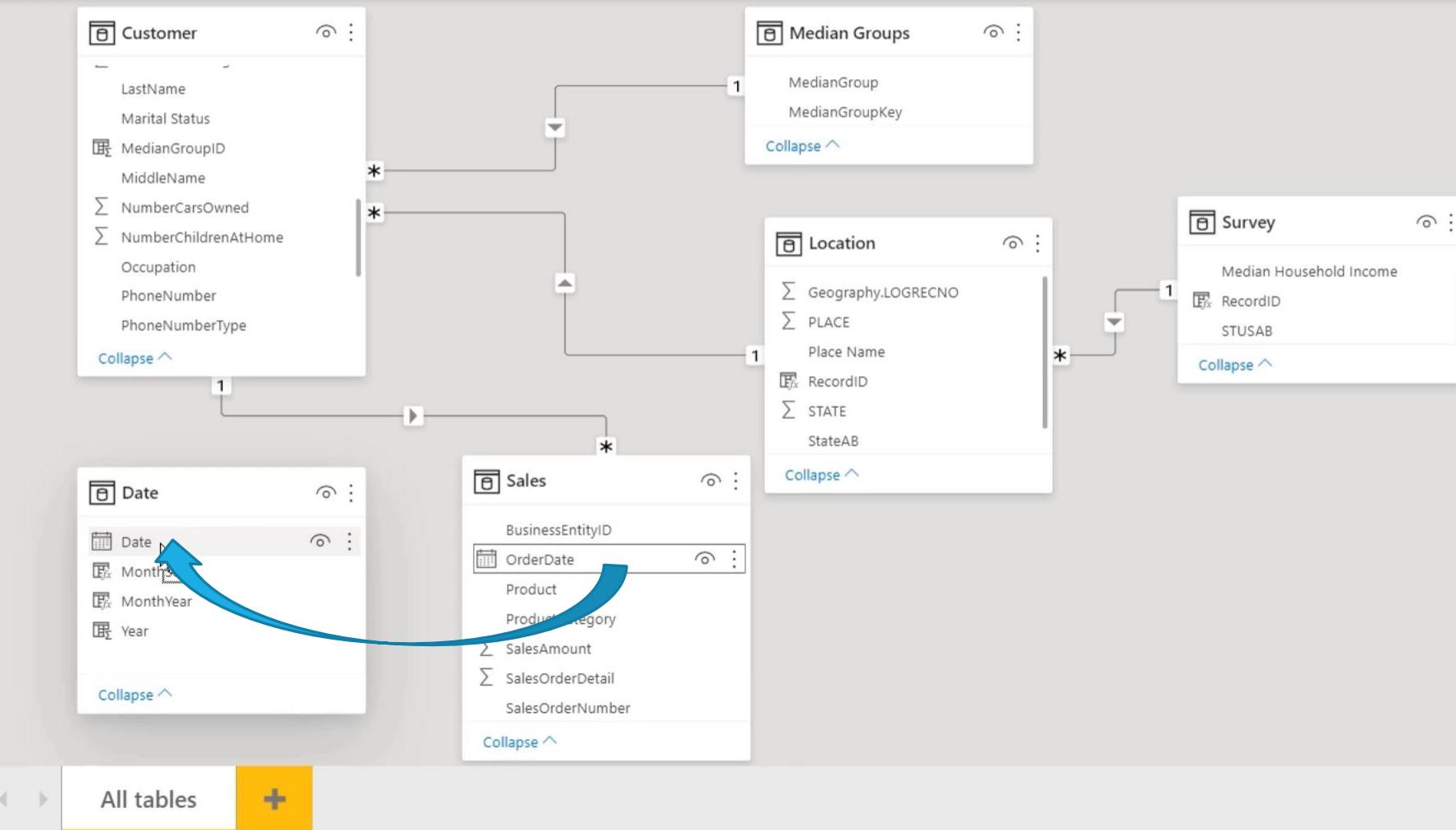
Queries

Relationships

Security

Q&A

Properties





Edit relationship

Select tables and columns that are related.

Sales

BusinessEntityID	SalesOrderNumber	SalesOrderDetail	OrderDate	Product	ProductCategory
2680	SO51308	38111	6/7/2013 12:00:00 AM	Water Bottle - 30 oz.	Accessories
3015	SO51569	38847	6/22/2013 12:00:00 AM	Water Bottle - 30 oz.	Accessories
5446	SO52066	43377	7/4/2013 12:00:00 AM	Water Bottle - 30 oz.	Accessories



Date

Date	Year	MonthYear	MonthSort
1/1/2011	2011	Jan 2011	2011-01
1/2/2011	2011	Jan 2011	2011-01
1/3/2011	2011	Jan 2011	2011-01

Cardinality

Many to one (*:1)

Make this relationship active

Assume referential integrity

Cross filter direction

Single

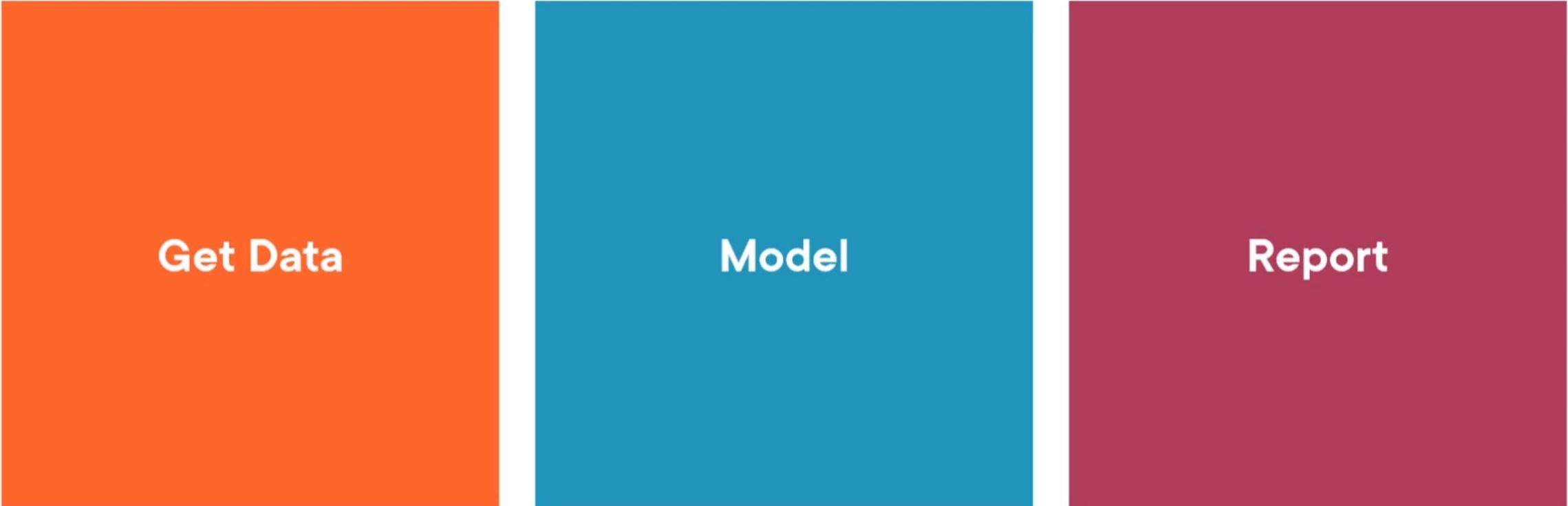
Apply security filter in both directions

OK

Cancel

Enhancing the Data Model

Power BI Development Workflow



Get Data

Model

Report

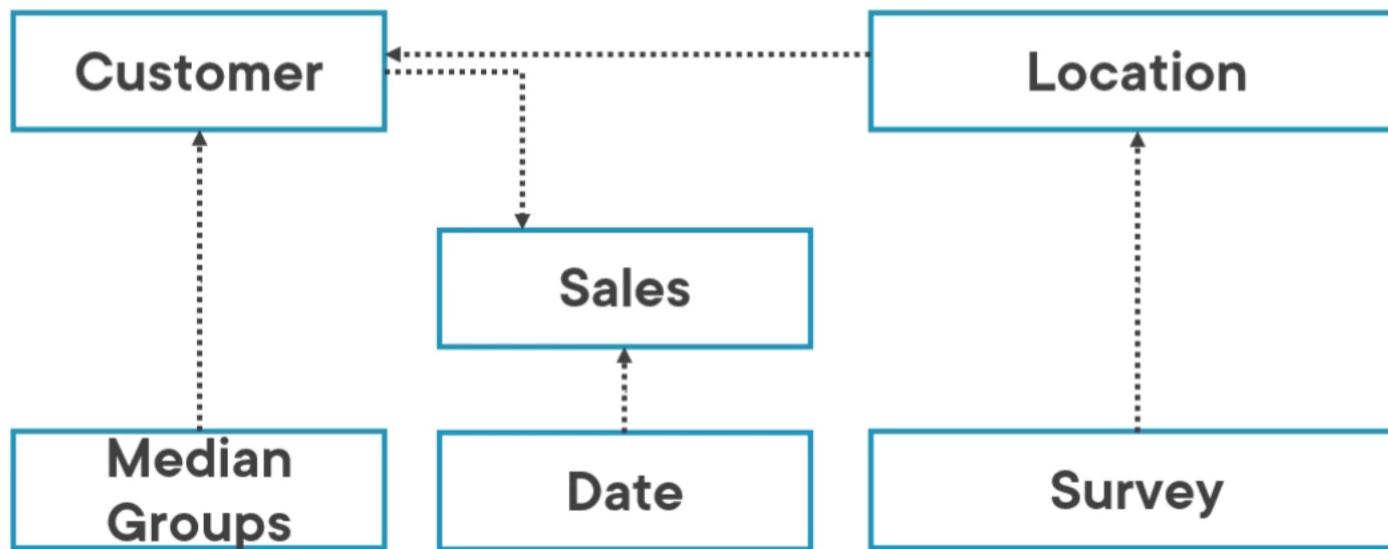
Power BI Development Workflow

Get Data

Model

Report

Globomantics Model Assessment





Model

- 
- Define hierarchies**
 - Configure properties**
 - Create measures**

Defining Hierarchies

Year	Sales Amount
+ 2011	\$1,306,575.59
+ 2012	\$2,017,887.37
+ 2013	\$3,156,260.76
+ 2014	\$2,871,773.85
Total	\$9,352,497.57

Year	Sales Amount
+ 2011	\$1,306,575.59
+ 2012	\$2,017,887.37
+ Jan 2012	\$123,180.11
+ Feb 2012	\$218,088.65
+ Mar 2012	\$273,656.71
+ Apr 2012	\$258,644.77
+ May 2012	\$269,236.82
+ Jun 2012	\$195,528.63
...	
+ 2013	\$3,156,260.76
+ 2014	\$2,871,773.85
Total	\$9,352,497.57

Year	Sales Amount
+ 2011	\$1,306,575.59
+ 2012	\$2,017,887.37
+ Jan 2012	\$123,180.11
+ 1/1/2012	\$699.10
+ 1/3/2012	\$3,578.27
+ 1/4/2012	\$699.10
...	
+ Feb 2012	\$218,088.65
...	
+ 2013	\$3,156,260.76
+ 2014	\$2,871,773.85
Total	\$9,352,497.57

Defining Hierarchies

Year

MonthYear

Date

Year

Quarter

Month

Date

Year

Half Year

Quarter

MonthYear

Date

Defining Hierarchies

Drill in a matrix

Year	Sales Amount
+ 2011	\$1,306,575.59
+ 2012	\$2,017,887.37
+ 2013	\$3,156,260.76
+ 2014	\$2,871,773.85
Total	\$9,352,497.57

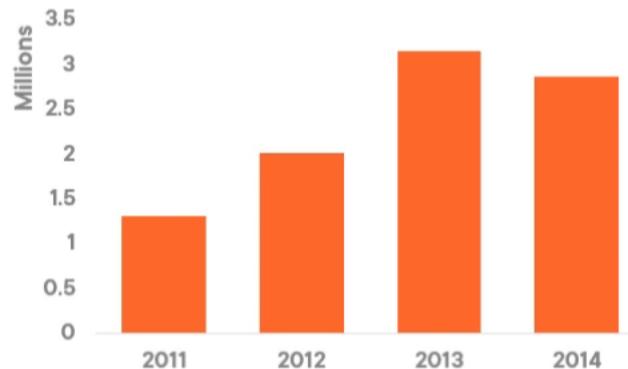


Year to MonthYear

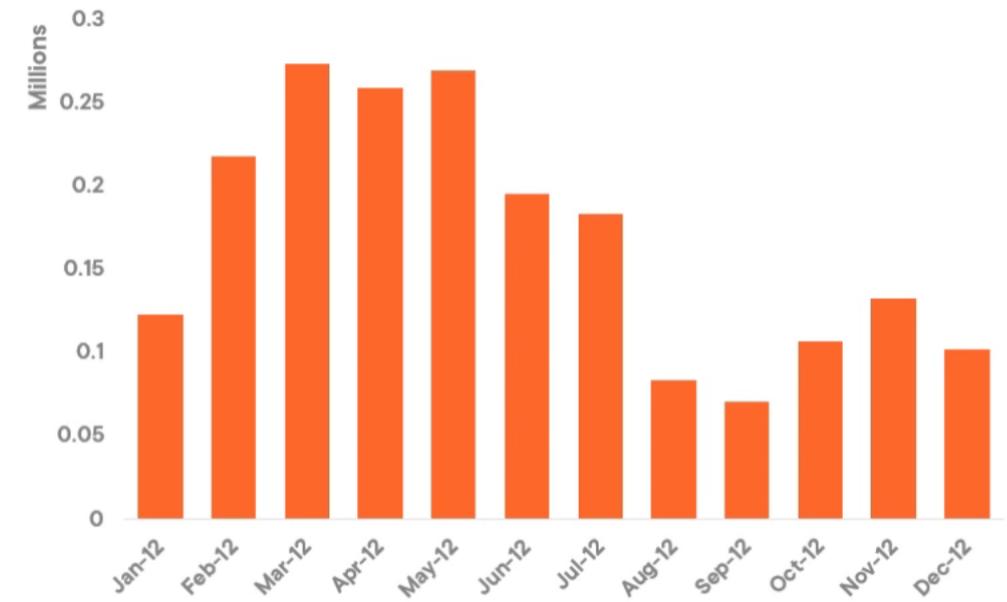
Year	Sales Amount
+ 2011	\$1,306,575.59
+ 2012	\$2,017,887.37
+ Jan 2012	\$123,180.11
+ Feb 2012	\$218,088.65
...	
+ 2013	\$3,156,260.76
+ 2014	\$2,871,773.85
Total	\$9,352,497.57

Defining Hierarchies

Drill in a chart



Year to Month Year



Demo



Create Location hierarchy in Customer

- StateProvinceName
- CityState
- CustomerName

Create Calendar hierarchy in Date

- Year
- MonthYear
- Date

File Home Help Table tools

Name Customer

Structure

Calendars Relationships Calculations

BusinessEntityID FirstName MiddleName LastName Suffix PhoneNumber PhoneNumberType AddressType AddressLine1

BusinessEntityID	FirstName	MiddleName	LastName	Suffix	PhoneNumber	PhoneNumberType	AddressType	AddressLine1
2686	Natalie		Reed		833-555-0176	Home	Home	523 Hawkins Street
2948	Jarrod		Sanchez		175-555-0161	Cell	Home	1417 Roosevelt Ave
3051	Amanda		Butler		920-555-0197	Home	Home	2957 Tri-state Avenue
3639	Anna		Ward		939-555-0166	Home	Home	9531 Tri-state Ave
3825	Wyatt		Edwards		885-555-0175	Home	Home	4609 Rosebrook Ct.
4115	Miguel		Scott		399-555-0192	Cell	Home	975 Madrid
4628	Marcus		Thompson		239-555-0129	Cell	Home	3260 Fountainhead C
4683	Jodi		She		359-555-0153	Cell	Home	1510 American Beau
5197	Jack		Butler		193-555-0187	Cell	Home	8396 Grand Ct
5109	Luke		Gonzales		660-555-0153	Cell	Home	3519 Brookside Drive
5423	Jason		Shan		164-555-0140	Cell	Home	5004 Santa Rita Dr
5641	Luke		Perry		248-555-0172	Cell	Home	1641 Overhill Rd
5707	Thomas		Simmons		804-555-0129	Home	Home	1207 Erie
6093	Beth		Torres		402-555-0128	Home	Home	9746 Gilardy Drive
6103	Noah		Washington		324-555-0153	Cell	Home	690 Carmel Drive
6320	Cameron		Diaz		517-555-0180	Home	Home	5408 South St
6631	Justin		Diaz		592-555-0152	Cell	Home	6386 Holiday Hill Dr
7160	Angelica		Hoyes		260-555-0148	Cell	Home	4313 Atherton Circle

Fields

Search

Marital Status

MedianGroupID

MiddleName

NumberCarsOwned

NumberChildrenAt...

Occupation

PhoneNumber

PhoneNumberType

PostalCode

StateProvinceName

Suffix

SurveyMedian

Title

File Home Help Table tools

Name Customer

Structure

Calendars Relationships Calculations

Fields

BusinessEntityID	FirstName	MiddleName	LastName	Suffix	PhoneNumber	PhoneNumberType	AddressType	AddressLine1
2686	Natalie		Reed		833-555-0176	Home	Home	10
2948	Jarrod		Sanchez		175-555-0161	Cell	Home	14
3051	Amanda		Butler		920-555-0197	Home	Home	29
3639	Anna		Ward		939-555-0166	Home	Home	95
3825	Wyatt		Edwards		885-555-0175	Home	Home	46
4115	Miguel		Scott		399-555-0192	Cell	Home	97
4628	Marcus		Thompson		239-555-0129	Cell	Home	32
4683	Jodi		She		359-555-0153	Cell	Home	15
5197	Jack		Butler		193-555-0187	Cell	Home	83
5109	Luke		Gonzales		660-555-0153	Cell	Home	35
5423	Jason		Shan		164-555-0140	Cell	Home	50
5641	Luke		Perry		248-555-0172	Cell	Home	16
5707	Thomas		Simmons		804-555-0129	Home	Home	12
6093	Beth		Torres		402-555-0128	Home	Home	9746 Gilardy Drive
6103	Noah		Washington		324-555-0153	Cell	Home	690 Carmel Drive
6320	Cameron		Diaz		517-555-0180	Home	Home	5408 South St
6631	Justin		Diaz		592-555-0152	Cell	Home	6386 Holiday Hill Dr
7160	Angelica		Hoyes		260-555-0148	Cell	Home	4313 Atherton Circle

Suffix SurveyMedian

Table: Customer (7,780 rows)

AddressType	AddressLine1
Home	1023 Hawkins Street
Home	1417 Roosevelt Aven
Home	2957 Tri-state Avenue
Home	9531 Tri-state Ave
Home	4609 Rosebrook Ct.
Home	975 Madrid
Home	3260 Fountainhead C
Home	1510 American Beaut
Home	8396 Grand Ct
Home	3519 Brookside Drive
Home	5004 Santa Rita Dr
Home	1641 Overhill Rd
Name 'Customer'[StateProvinceName]	
Home	9746 Gillard Drive
Home	690 Carmel Drive
Home	5409 South St

- Marital Status
- MedianGroupID
- MiddleName
- NumberCarsOwned
- NumberChildrenAt...
- Occupation
- PhoneNumber
- PhoneNumberType
- PostalCode
- StateProvinc... ⓘ ...
- > StateProvinceNam...
- Suffix

Fields

>

Search

- FirstName
- Gender
- Homeowner
- HomeOwnerFlag
- LastName
- Location
- StateProvinceName
- Marital Status
- MedianGroupID
- MiddleName

Fields	
<input type="text"/> Search	
	AddressType
	BusinessEntityID
	City
<input type="checkbox"/>	CityState
	CommuteDistance
\sum	CommuteDistanceSort
	CountryRegionName
<input type="checkbox"/>	CustomerName
	Education
\sum	EducationSort
	FirstName
	Gender
...	

Location

Create hierarchy

Add to hierarchy

New measure

New column

New quick measure

Rename

Delete from model

Hide in report view

Unhide all

Collapse all

Expand all

New group

CityState

CommuteDistance

CommuteDistanceSort

CountryRegionName

CustomerName

Education

EducationSort

FirstName

Gender

Homeowner

Phone Number Type	Address Type	Count
Home	Home	3260
Cell	Home	1510
Home	Home	8396
Home	Home	3519
Cell	Home	5004
Cell	Home	1641
Home	Home	1207
Home	Home	9746
Cell	Home	690
Home	Home	5408
Cell	Home	6286

Add Customer Name to Location Hierarchies

AddressType
BusinessEntityID
City
 CityState
CommuteDistance
Σ CommuteDistanceSort
CountryRegionName
 CustomerName
Education
Σ EducationSort
FirstName
Gender
 Homeowner

File Home Help Table tools

Name Customer

Structure

Calendars Relationships Calculations

BusinessEntityID	FirstName	MiddleName	LastName	Suffix	PhoneNumber	PhoneNumberType	AddressType	AddressLine1
2686	Natalie		Reed		833-555-0176	Home	Home	1023
2948	Jarrod		Sanchez		175-555-0161	Cell	Home	1417
3051	Amanda		Butler		920-555-0197	Home	Home	2957
3639	Anna		Ward		939-555-0166	Home	Home	9531
3825	Wyatt		Edwards		885-555-0175	Home	Home	4609
4115	Miguel		Scott		399-555-0192	Cell	Home	975
4628	Marcus		Thompson		239-555-0129	Cell	Home	3260
4683	Jodi		She		359-555-0153	Cell	Home	1510
5197	Jack		Butler		193-555-0187	Cell	Home	8396
5109	Luke		Gonzales		660-555-0153	Cell	Home	3519
5423	Jason		Shan		164-555-0140	Cell	Home	5004
5641	Luke		Perry		248-555-0172	Cell	Home	1641
5707	Thomas		Simmons		804-555-0129	Home	Home	1207
6093	Beth		Torres		402-555-0128	Home	Home	9746
6103	Noah		Washington		324-555-0153	Cell	Home	690
6320	Cameron		Diaz		517-555-0180	Home	Home	5408
6631	Justin		Diaz		592-555-0152	Cell	Home	6386
7160	Angelica		Hoyes		260-555-0148	Cell	Home	4312

Fields

Search

- > Customer
- > Date
- > MonthSort
- > MonthYear
- > Year
- > Location
- > Median
- > Sales
- > Survey

Create Year Hierarchy & rename Calendar

Add MonthYear & Date files to Hierarchy

File Home Help Table tools

Name Date

Mark as date table Calendars Relationships New measure Quick New measure column New table Calculations

Structure

Date = CALENDARAUTO()

	Date	Year	MonthYear	MonthSort
1/1/2011	2011	Jan 2011	2011-01	
1/2/2011	2011	Jan 2011	2011-01	
1/3/2011	2011	Jan 2011	2011-01	
1/4/2011	2011	Jan 2011	2011-01	
1/5/2011	2011	Jan 2011	2011-01	
1/6/2011	2011	Jan 2011	2011-01	
1/7/2011	2011	Jan 2011	2011-01	
1/8/2011	2011	Jan 2011	2011-01	
1/9/2011	2011	Jan 2011	2011-01	
1/10/2011	2011	Jan 2011	2011-01	
1/11/2011	2011	Jan 2011	2011-01	
1/12/2011	2011	Jan 2011	2011-01	
1/13/2011	2011	Jan 2011	2011-01	
1/14/2011	2011	Jan 2011	2011-01	
1/15/2011	2011	Jan 2011	2011-01	
1/16/2011	2011	Jan 2011	2011-01	
1/17/2011	2011	Jan 2011	2011-01	
1/18/2011	2011	Jan 2011	2011-01	

Fields

Search

> Customer

✓ Date

✓ Calendar

Σ Year

fx MonthYear

✓ Date

✓ Date Hierarchy

Σ Year

Quarter

Month

Day

fx MonthSort

fx MonthYear

Σ Year

Name Date Hierarchy

Table: Date (1,461 rows)

File Home Help Table tools **Column tools**

Name Date

Data type Date/time

\$ % Format *3/14/2001 (m/d/y...)

Summarization Don't summarize

Data category Uncategorized

Structure

Formatting

Properties

Sort by column

Sort

Data groups

Manage relationships

New column

Calculations

X ✓ 1 Date = CALENDARAUTO()

Date	Year	MonthYear	MonthSort
1/1/2011	2011	Jan 2011	2011-01
1/2/2011	2011	Jan 2011	2011-01
1/3/2011	2011	Jan 2011	2011-01
1/4/2011	2011	Jan 2011	2011-01
1/5/2011	2011	Jan 2011	2011-01
1/6/2011	2011	Jan 2011	2011-01
1/7/2011	2011	Jan 2011	2011-01
1/8/2011	2011	Jan 2011	2011-01
1/9/2011	2011	Jan 2011	2011-01
1/10/2011	2011	Jan 2011	2011-01
1/11/2011	2011	Jan 2011	2011-01
1/12/2011	2011	Jan 2011	2011-01
1/13/2011	2011	Jan 2011	2011-01
1/14/2011	2011	Jan 2011	2011-01
1/15/2011	2011	Jan 2011	2011-01
1/16/2011	2011	Jan 2011	2011-01
1/17/2011	2011	Jan 2011	2011-01
1/18/2011	2011	Jan 2011	2011-01

Name 'Date'[Date]

Customer

Date

Calendar

Year

MonthYear

Date

Date

MonthSort

MonthYear

Year

Location

Median Groups

Sales

Survey

Demo



Hide tables

- Location
- Survey

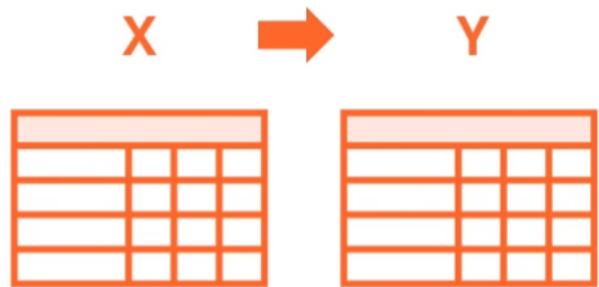
Hide fields in the following tables

- Customer
- MedianGroup
- Sales

Set sort by column

- Customer: Education, CommuteDistance
- Date: MonthYear

Configuring Properties



Object Names



Hidden Objects



Sort Order



Data Types and Categories



Format



Summarization

File Home Help Table tools **Column tools**

Name Date Format *3/14/2001 (m/d/y...)
Data type Date/time \$ % , : 00 Auto ↑ ↓
Summarization Don't summarize
Data category Uncategorized

Structure Formatting Properties Sort by column Sort Groups Relationships Calculations

Date = CALENDARAUTO()

	Date	Year	MonthYear	MonthSort
1/1/2011	2011	Jan 2011	2011-01	
1/2/2011	2011	Jan 2011	2011-01	
1/3/2011	2011	Jan 2011	2011-01	
1/4/2011	2011	Jan 2011	2011-01	
1/5/2011	2011	Jan 2011	2011-01	
1/6/2011	2011	Jan 2011	2011-01	
1/7/2011	2011	Jan 2011	2011-01	
1/8/2011	2011	Jan 2011	2011-01	
1/9/2011	2011	Jan 2011	2011-01	
1/10/2011	2011	Jan 2011	2011-01	
1/11/2011	2011	Jan 2011	2011-01	
1/12/2011	2011	Jan 2011	2011-01	
1/13/2011	2011	Jan 2011	2011-01	
1/14/2011	2011	Jan 2011	2011-01	
1/15/2011	2011	Jan 2011	2011-01	
1/16/2011	2011	Jan 2011	2011-01	
1/17/2011	2011	Jan 2011	2011-01	
1/18/2011	2011	Jan 2011	2011-01	

We need to determine whether customer income is **Above/Below Median**

If you copy that information into customer table when you created **SurveyMedian** Calculated column there.

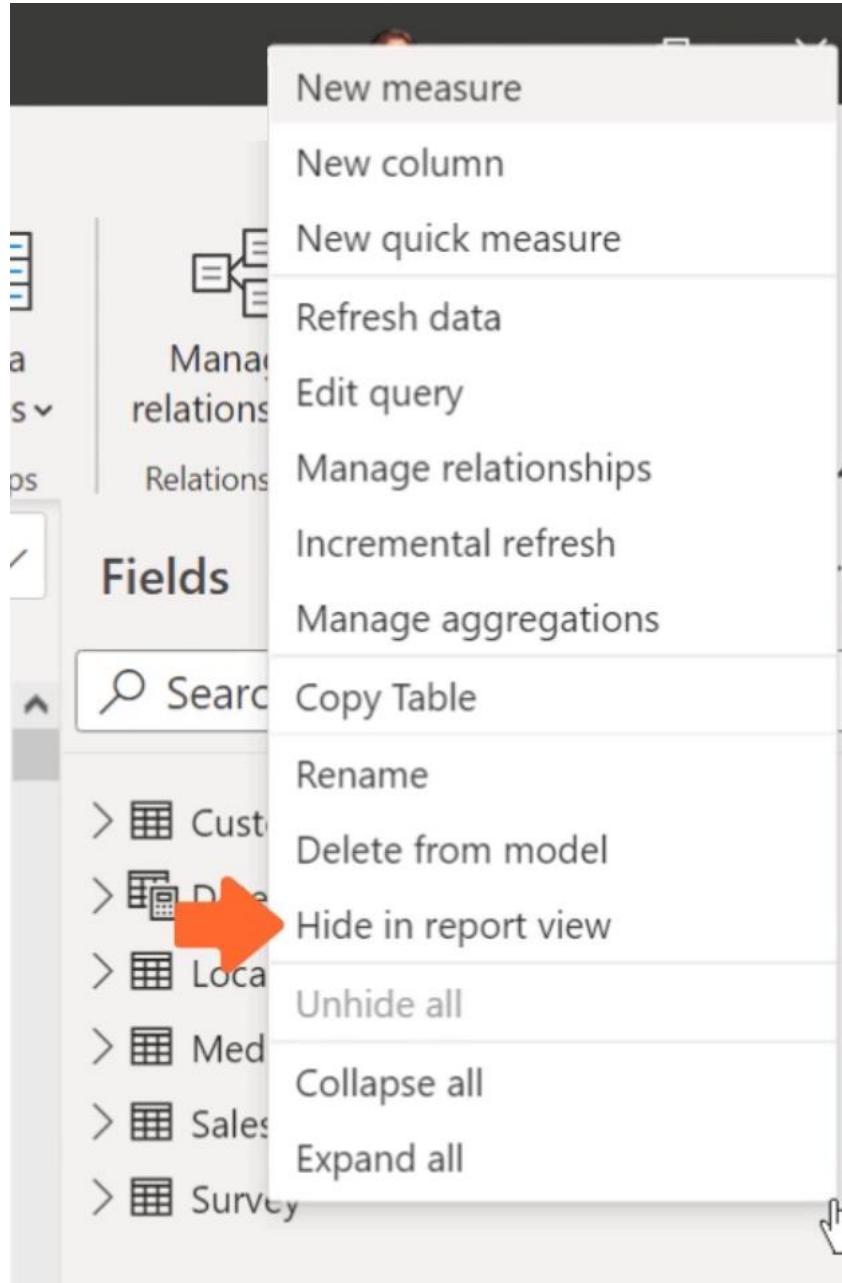
So there is not other reason having table here

We can't remove this because we need this data, so lets hide this

Fields

Search

- > Customer
- > Date
- > Location
- > Median Groups
- > Sales
- > Survey



File Home Insert Modeling View Help

Cut Paste Copy Format painter Clipboard

Get data v Excel Power BI datasets SQL Server Enter data Dataverse Recent sources v

Transform data v Refresh data v New visual Text box More visuals v

New measure Quick Sensitivity (preview) v Publish Calculations Sensitivity Share

LastName SalesAmount

Adams	\$75,629.3228
Agbonile	\$89.97
Alan	\$7.28
Alexander	\$91,038.2692
Allen	\$54,794.6696
Alonso	\$20,282.93
Alvarez	\$14,178.62
Anand	\$21,527.48
Andersen	\$13,712.8907
Anderson	\$59,292.3407
Arthur	\$2,748.9496
Arun	\$2,754.14
Ashe	\$6,393.9725
Bailey	\$87,140.7221
Baker	\$53,522.7914
Barnes	\$63,387.8249
Bebbington	\$5,794.05
Beck	\$5,959.02
Becker	\$296.22
Bell	\$16,733.3225
Total	\$9,352,497.5738

Visualizations Fields

Filters

Customer Date Location Median Groups Sales

Add data fields here

Drill through Cross-report Off Keep all filters

Page 1 +

File Home Help Table tools **Column tools**

Name Date Format *3/14/2001 (m/d/y...)
Data type Date/time \$ % , : 00 Auto ↑
Summarization Don't summarize
Data category Uncategorized

Structure Formatting Properties Sort by column Sort Groups Relationships Calculations

Date Year MonthYear MonthSort

1/1/2011	2011 Jan 2011	2011-01
1/2/2011	2011 Jan 2011	2011-01
1/3/2011	2011 Jan 2011	2011-01
1/4/2011	2011 Jan 2011	2011-01
1/5/2011	2011 Jan 2011	2011-01
1/6/2011	2011 Jan 2011	2011-01
1/7/2011	2011 Jan 2011	2011-01
1/8/2011	2011 Jan 2011	2011-01
1/9/2011	2011 Jan 2011	2011-01
1/10/2011	2011 Jan 2011	2011-01
1/11/2011	2011 Jan 2011	2011-01
1/12/2011	2011 Jan 2011	2011-01
1/13/2011	2011 Jan 2011	2011-01
1/14/2011	2011 Jan 2011	2011-01
1/15/2011	2011 Jan 2011	2011-01
1/16/2011	2011 Jan 2011	2011-01
1/17/2011	2011 Jan 2011	2011-01
1/18/2011	2011 Jan 2011	2011-01

Let's hide Location
It is just a bridge between **Customer** and **Surveys**

Fields

- > **Customer**
- > **Date**
- > **Location**
- > **Median Groups**
- > **Sales**
- > **Survey**

File Home Insert Modeling View Help

Cut Copy Format painter Clipboard

Get data Excel Power BI datasets SQL Server Enter data Dataverse Recent sources

Last Name Sales Amount

Adams	\$75,629.3228
Agbonile	\$89.97
Alan	\$7.28
Alexander	\$91,038.2692
Allen	\$54,794.6696
Alonso	\$20,282.93
Alvarez	\$14,178.62
Anand	\$21,527.48
Andersen	\$13,712.8907
Anderson	\$59,292.3407
Arthur	\$2,748.9496
Arun	\$2,754.14
Ashe	\$6,393.9725
Bailey	\$87,140.7221
Baker	\$53,522.7914
Barnes	\$63,387.8249
Bebbington	\$5,794.05
Beck	\$5,959.02
Becker	\$296.22
Bell	\$16,733.3225
Total	\$9,352,497.5738

Hide the below columns

- HomeOwnerFlag
- FirstName
- LastName
- MiddleName
- Suffix
- CommuteDistanceSort
- EducationSort
- MedianGroupID
- SurveyMedian
- Title

Check Create hierarchy Add to hierarchy > New measure New column New quick measure Rename Delete from model Hide View hidden Unhide all Collapse all Expand all New group Add to filters > Add to drill through < homeOwnerFlag Keep all filters

Fields

Search

CustomerName Education EducationSort FirstName Gender Homeowner HomeOwnerFlag LastName Location Marital Status MedianGroupID MiddleName NumberCarsOwned

Quick measure Sensitivity (preview) Share Publish

Page 1 +

File Home Insert Modeling View Help Table tools Column tools

Name Suffix Format Text Summarization Don't summarize Data category Uncategorized

Data type Text \$ % , . : Auto Sort by column Data groups Manage relationships New column

Structure Formatting Properties Sort Groups Relationships Calculations

LastName	SalesAmount
Adams	\$75,629.3228
Agbonile	\$89.97
Alan	\$7.28
Alexander	\$91,038.2692
Allen	\$54,794.6696
Alonso	\$20,282.93
Alvarez	\$14,178.62
Anand	\$21,527.48
Andersen	\$13,712.8907
Anderson	\$59,292.3407
Arthur	\$2,748.9496
Arun	\$2,754.14
Ashe	\$6,393.9725
Bailey	\$87,140.7221
Baker	\$53,522.7914
Barnes	\$63,387.8249
Bebbington	\$5,794.05
Beck	\$5,959.02
Becker	\$296.22
Bell	\$16,733.3225
Total	\$9,352,497.5738

BusinessEntityID
Also use to find the
relationship between
sales, so lets hide from
here

Visualizations Fields

Filters

Values

Add data fields here

Drill through

Cross-report

Off

Keep all filters

Search

Customer

- AddressLine1
- AddressLine2
- AddressType
- BusinessEntityID
- City
- CityState
- CommuteDistance
- CommuteDistanceSort
- CountryRegionName
- CustomerName
- Education
- EducationSort
- Gender

Page 1 +

File Home Insert Modeling View Help **Table tools** **Column tools**

Name MedianGroupKey Format Whole number Summarization Don't summarize Data category Uncategorized Sort by column Data groups Manage relationships New column

Data type Whole number \$ % , . 0 Groups Relationships Calculations

Structure

Formatting Properties

LastName	SalesAmount
Adams	\$75,629.3228
Agbonile	\$89.97
Alan	\$7.28
Alexander	\$91,038.2692
Allen	\$54,794.6696
Alonso	\$20,282.93
Alvarez	\$14,178.62
Anand	\$21,527.48
Andersen	\$13,712.8907
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Bailey	\$87,140.7221
Baker	\$53,522.7914
Barnes	\$63,387.8249
Bebbington	\$5,794.05
Beck	\$5,959.02
Becker	\$296.22
Bell	\$16,733.3225
Total	\$9,352,497.5738

LastNames SalesAmount

Visualizations Fields

Filters

Add data fields here

Drill through

Cross-report

Off

Hide this field

Median Groups

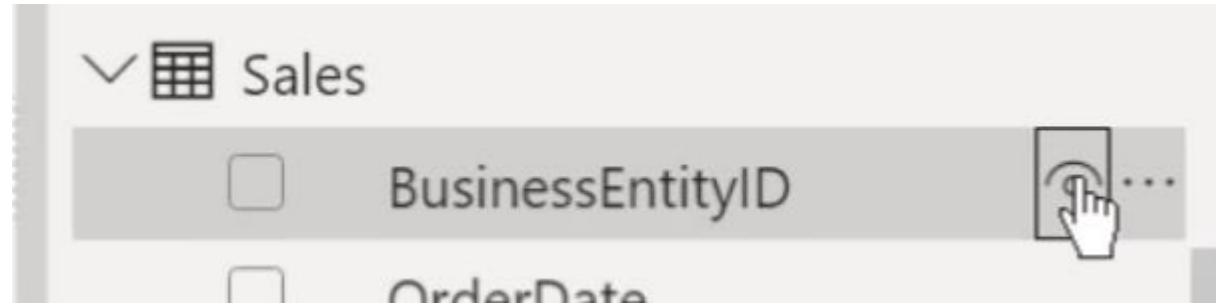
MedianGroup

MedianGroupKey

Sales

Page 1 +

Hide BusinessEntityID from Sales



File Home Help Table tools **Column tools**

Name: MonthYear Format: Text Summarization: Don't summarize Data category: Uncategorized

Data type: Text Structure: Formatting Properties: Sort by column, Data groups, Manage relationships, New column, Calculations

Fields

MonthYear (highlighted)

Date

MonthSort

Year

Search: Customer, Date, Calendar, Year, MonthYear, Date, MonthSort, MonthYear, Year, Location, Median Groups, Sales, Survey

Table: Date (1,461 rows) Column: MonthYear (48 distinct values)

The screenshot shows the Power BI Desktop interface with the 'Column tools' tab selected in the ribbon. A context menu is open for the 'MonthYear' column, displaying options such as 'Sort by column', 'Data groups', 'Manage relationships', and 'New column'. Two blue arrows point from the bottom right towards the 'MonthYear' entry in the 'Fields' pane, which lists 'Date', 'MonthSort', and 'Year'. The 'MonthYear' entry in the 'Fields' pane is highlighted. The left sidebar shows a table structure with columns 'Date', 'Year', 'MonthYear' (selected), and 'MonthSort'. The main area displays a table with data from January 1, 2011, to January 18, 2011.