

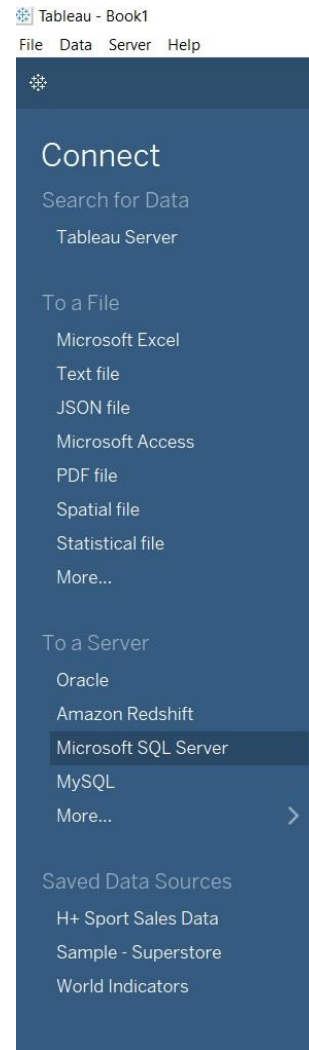
CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

For most databases, we can connect to a specific query rather than the entire data set. Because databases have slightly different SQL syntax from each other, the custom SQL we use to connect to one database might be different from the custom SQL we might use to connect to another. However, using custom SQL can be useful when we know exactly the information that we need and understand how to write SQL queries.

Though there are several common reasons why we might need to use custom SQL, we can use custom SQL to union the data across tables, recast fields to perform cross-database joins, restructure or reduce the size of the data for analysis, etc.

CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 1: Start Tableau and under **Connect > To a Server**, select **Microsoft SQL Server**

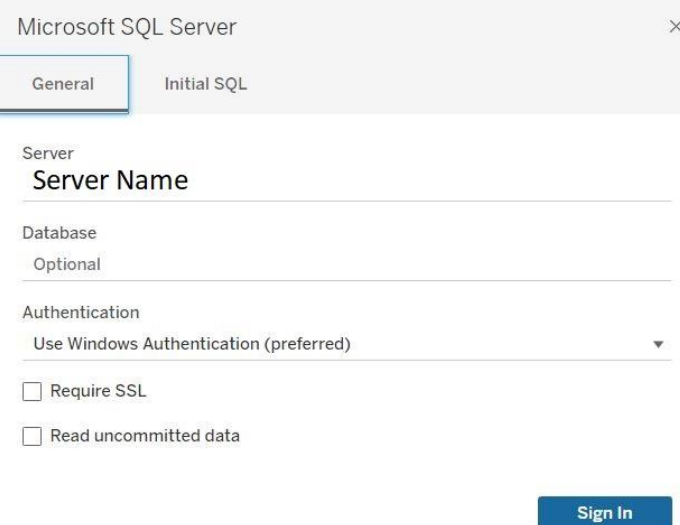


CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 2: Enter the below mentioned

- a) Enter the name of the server that is to be connected to
- b) (Optional) Enter a database name if we want to connect to a contained database
- c) Select how we want to sign into the server
Specify whether to use Windows Authentication or a specific user name and password

Once ready click on **Sign In**



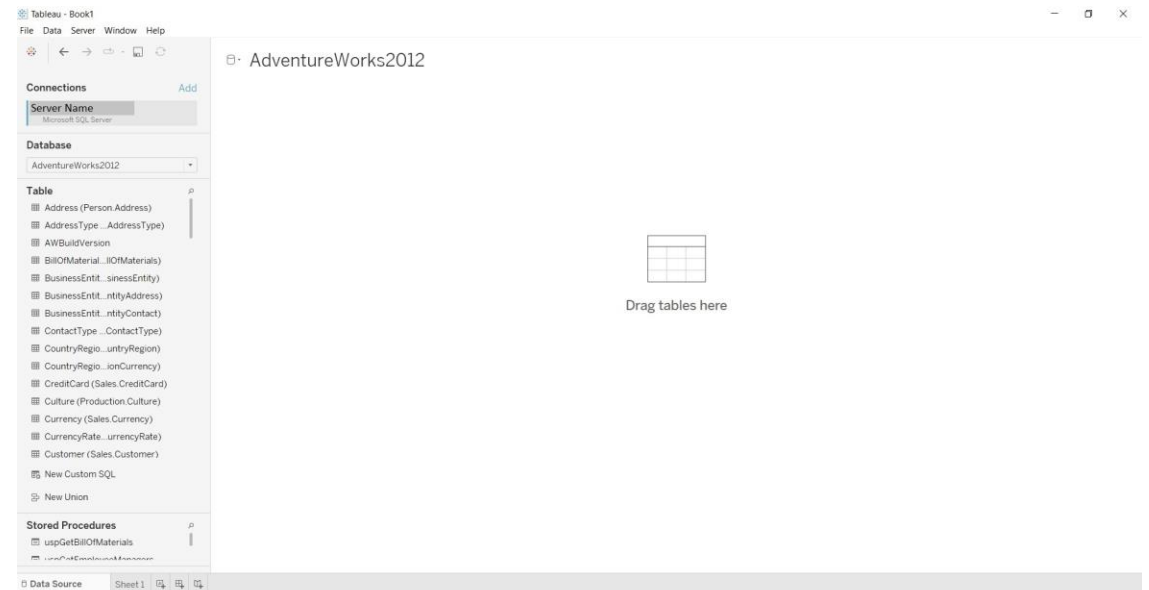
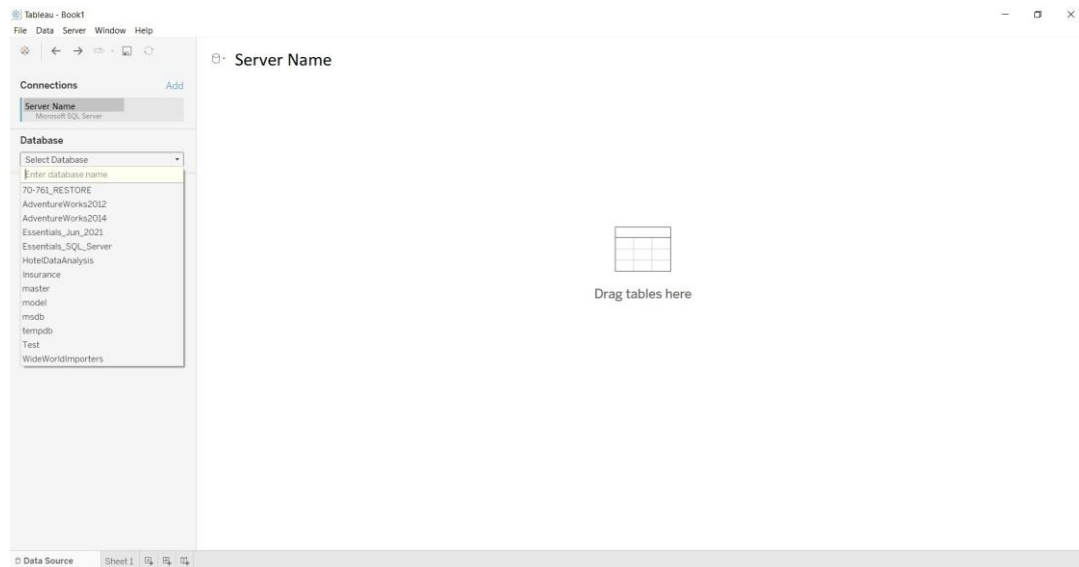
The screenshot shows the 'Microsoft SQL Server' connection dialog box. It has two tabs: 'General' (selected) and 'Initial SQL'. The 'General' tab contains the following fields and options:

- Server:** A text field labeled 'Server Name'.
- Database:** A text field labeled 'Optional'.
- Authentication:** A dropdown menu currently set to 'Use Windows Authentication (preferred)'.
- ☐ **Require SSL**
- ☐ **Read uncommitted data**

A blue 'Sign In' button is located at the bottom right of the dialog box.

CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 3: From the Database drop-down list, select a database or use the text box to search for a database by name e.g: **AdventureWorks2012**



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STEP 4: Under **Table**, select a table or use the text box to search for a table by name
e.g: **Address**

Tableau - Book1

File Data Server Window Help

Connections Add

Server Name
Microsoft SQL Server

Database
AdventureWorks2012

Table

- Address (Person.Address)
- AddressType ...AddressType)
- AWBuildVersion
- BillOfMaterial...lOfMaterials)
- BusinessEntit...sinessEntity)
- BusinessEntit...ntityAddress)
- BusinessEntit...ntityContact)
- ContactType ...ContactType)
- CountryRegio...untryRegion)
- CountryRegio...ionCurrency)
- CreditCard (Sales.CreditCard)
- Culture (Production.Culture)
- Currency (Sales.Currency)
- CurrencyRate...urrencyRate)
- Customer (Sales.Customer)
- New Custom SQL
- New Union

Stored Procedures

- uspGetBillOfMaterials
- uspGetEmployee

Go to Worksheet

Address (Person.Address) (AdventureWorks2012)

Connection
☒ Live ☐ Extract

Filters
0 Add

Address

Need more data?
Drag tables here to relate them. [Learn more](#)

Address

rows

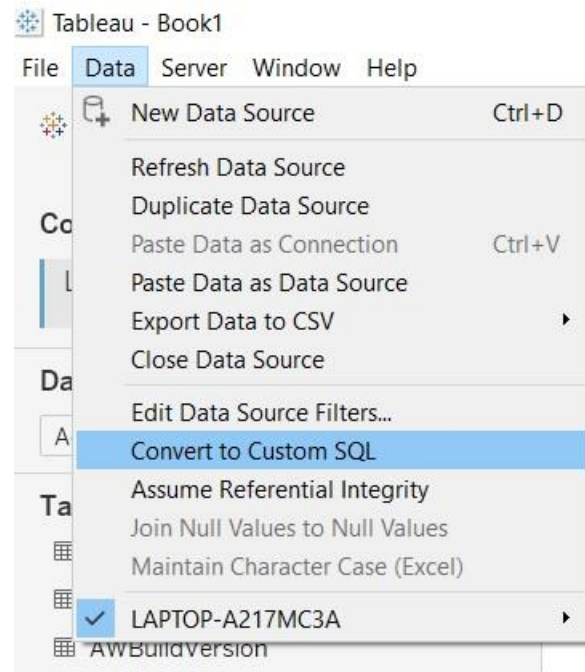
#	Address	Address ID	AddressLine1	AddressLine2	City	State Province ID	Postal Code	Spatial Location
Address	Address	Address ID	AddressLine1	AddressLine2	City	State Province ID	Postal Code	Spatial Location

Update Now

Update Automatically

CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

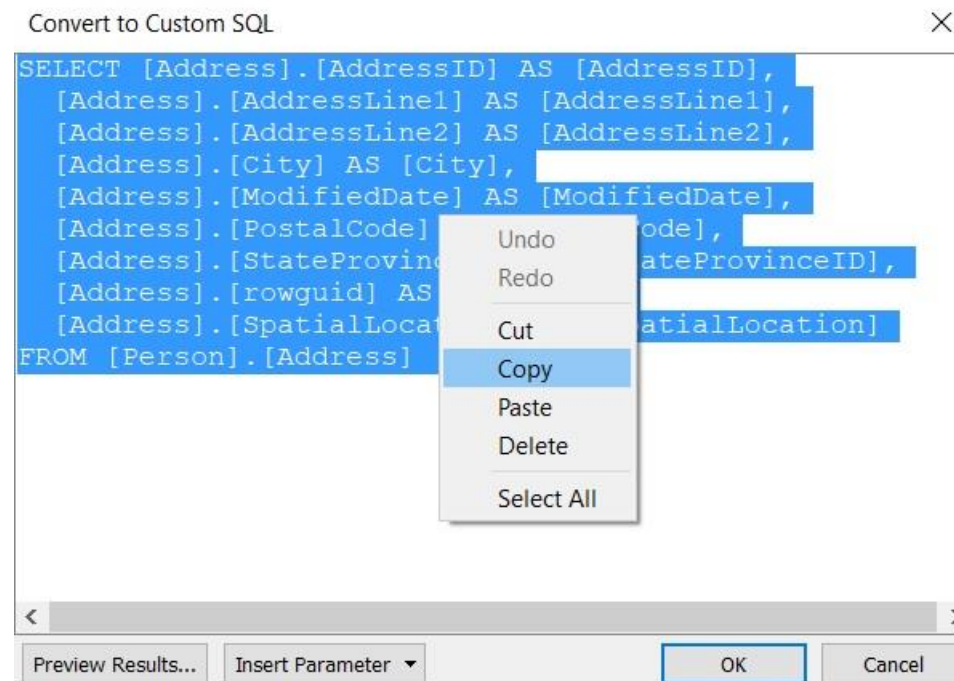
STEP 5: Go to Data > Convert to Custom SQL



CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 6: Select all the SQL code and Copy it

Click on **Cancel** (This is just for getting a template for SQL code)



CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 7: Right-click the **Address** table in Canvas and click on **Remove**

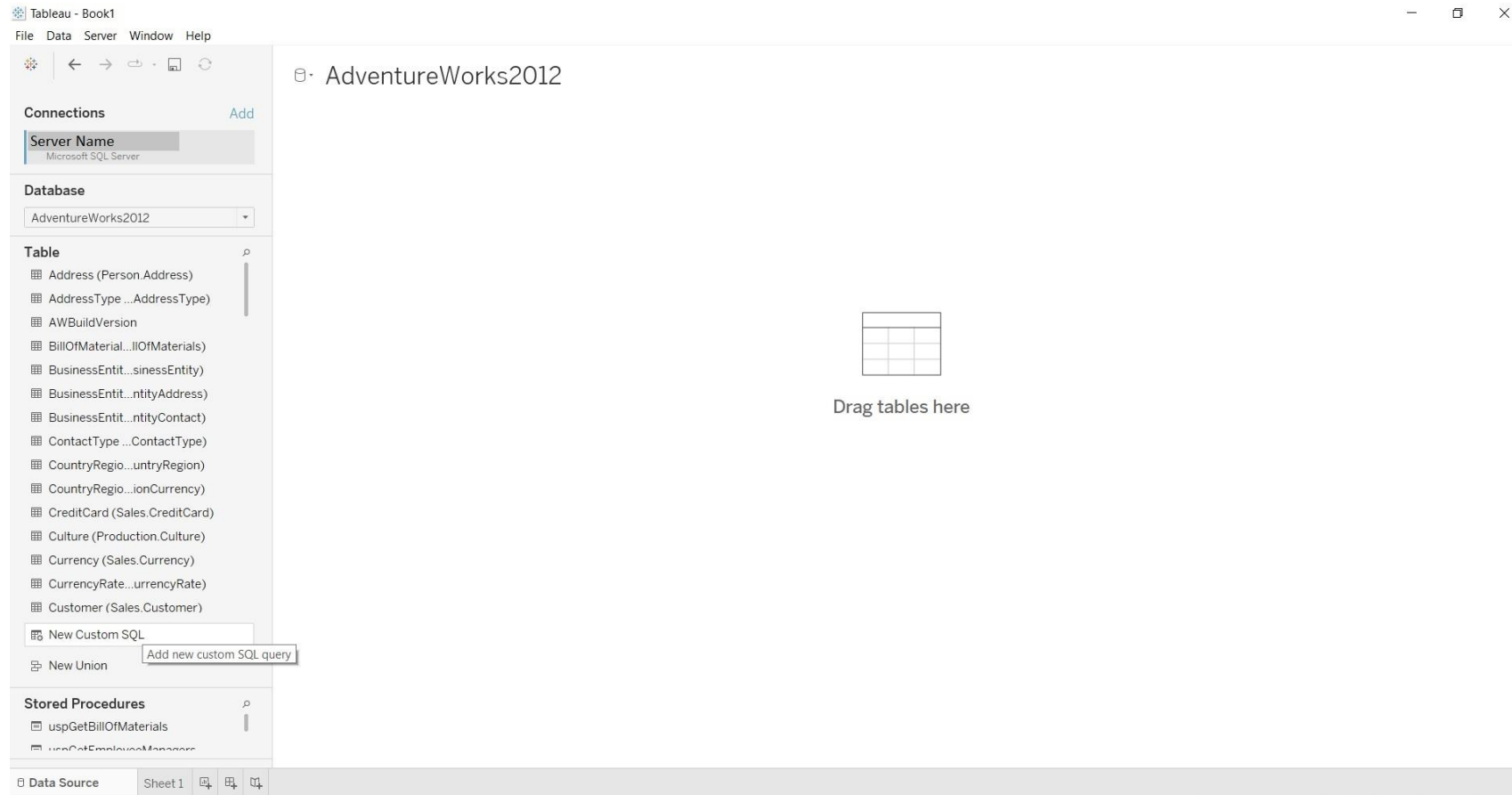
The screenshot shows the Tableau interface with the 'Address' table selected in the canvas. A right-click context menu is open over the 'Address' table, with the 'Remove' option highlighted. The menu options are: Open..., Rename, Reset Table Name, Convert to Custom SQL, Remove, and Convert to Union....

The 'Connections' pane on the left shows the 'AdventureWorks2012' database selected. The 'Table' list on the left includes 'Address (Person.Address)' and other tables. The 'Table Details' pane at the bottom shows the 'Address' table with 9 fields and 19614 rows. The table data is displayed in a grid view.

#	Address	Address	Address	#	Address	Address	Address	Address	Address
Address ID	AddressLine1	AddressLine2	City	State Province ID	Postal Code	Spatial Location	Rowguid	Modified Date	
1	1970 Napa Ct.	null	Bothell	79	98011	Point	9AADC80D-36CF-483F-84D...	04-01-2002 00:00:00	
2	9833 Mt. Dias Blv.	null	Bothell	79	98011	Point	32A54B9E-E034-4BFB-B573...	01-01-2003 00:00:00	
3	7484 Roundtree Drive	null	Bothell	79	98011	Point	4C506923-6D1B-452C-A07C...	08-04-2007 00:00:00	
4	9539 Glenside Dr	null	Bothell	79	98011	Point	E5946C78-4BCC-477F-9FA1...	07-03-2003 00:00:00	
5	1226 Shoe St.	null	Bothell	79	98011	Point	FBAFF937-4A97-4AF0-81FD...	20-01-2003 00:00:00	
6	1399 Firestone Drive	null	Bothell	79	98011	Point	FEBF8191-9804-44C8-877A...	17-03-2003 00:00:00	

CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 8: Double-click the **New Custom SQL** option on the Data Source page



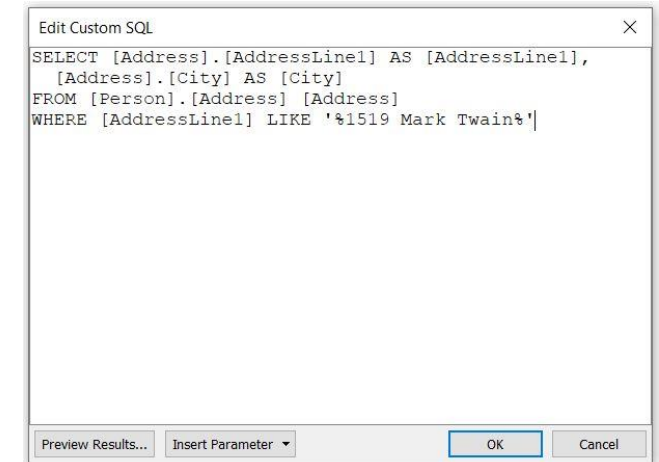
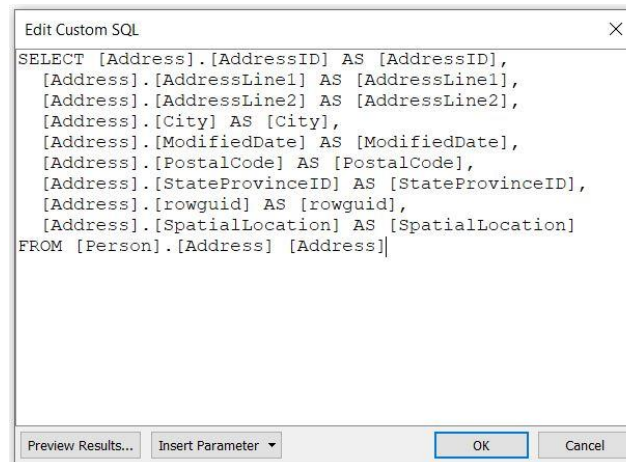
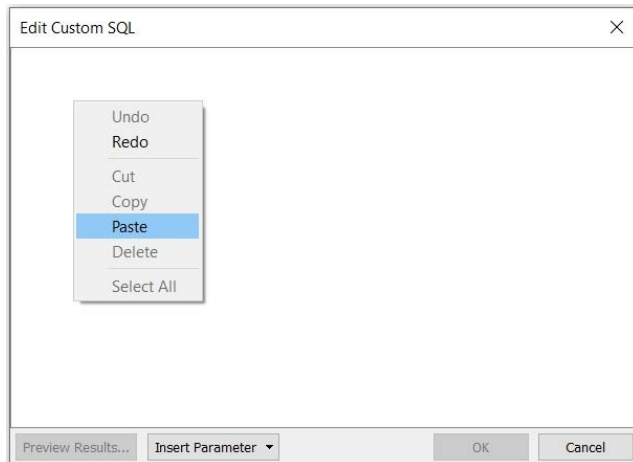
CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 9: Type or paste the query into the text box.

The query must be a single SELECT* statement

If required, make changes to SQL code copied from the **Convert to Custom SQL**

Once ready click on **OK**



CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

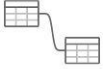
STEP 10: After we click OK, the query runs, and the **Custom SQL Query** table appears in the logical layer of the canvas. Click on **Update Now**

Custom SQL Query (AdventureWorks2012)

Connection
☒ Live ☐ Extract

Filters
0 | [Add](#)

Custom SQL Query



Need more data?
Drag tables here to relate them. [Learn more](#)

Custom SQL Query

→ rows ⚙️ ▼

Name
Custom SQL Query

Fields

Type	Field Name	Physical Table	Remote Fiel...
Abc	AddressLine1	Custom SQL Query	AddressLine1
	City	Custom SQL Query	City

Abc
Custom SQL Query
AddressLine1

Custom SQL Query
City

Update Now

Update Automatically

CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

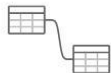
STEP 11: Only relevant fields from the **Custom SQL Query** are displayed in the data grid on the Data Source page.

Custom SQL Query (AdventureWorks2012)

Connection
☒ Live ☐ Extract

Filters
0 | [Add](#)

Custom SQL Query



Need more data?
Drag tables here to relate them. [Learn more](#)

Custom SQL Query ▼ 2 fields 1 rows

1 → rows ⚙️ ▼

Name
Custom SQL Query

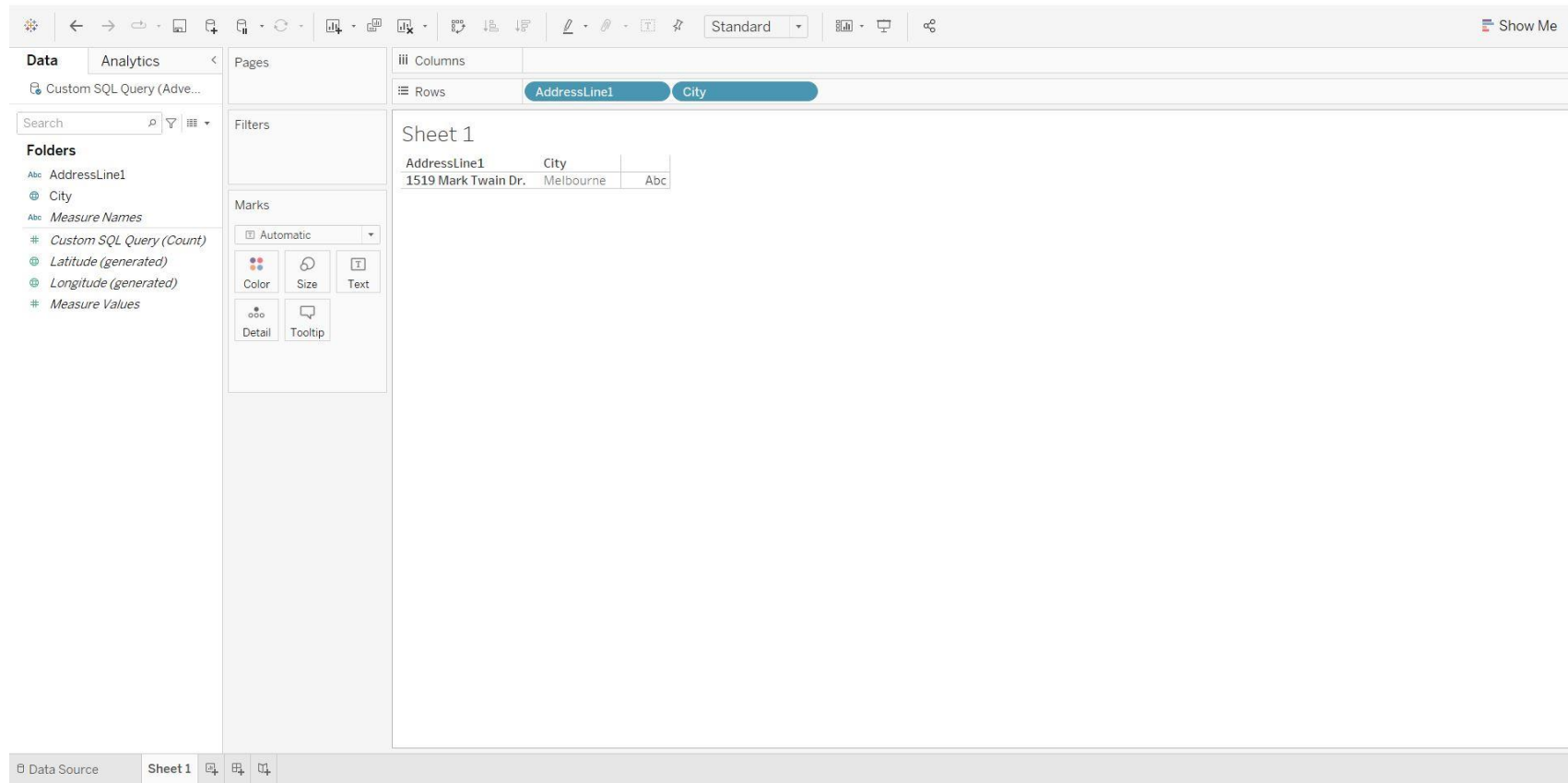
Fields

Type	Field Name	Physical Table	Remote Fiel...
Abc	AddressLine1	Custom SQL Query	AddressLine1
🌐	City	Custom SQL Query	City

Abc Custom SQL Query AddressLine1	🌐 Custom SQL Query City
1519 Mark Twain Dr.	Melbourne

CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 12: Go to **Sheet1** and drag the **AddressLine1** and **City** to the **Rows** shelf
This confirms that the **Custom SQL Query** table now contains only 1 record



CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 13: Right-click the **Custom SQL Query** table in Canvas and click on **Edit Custom SQL Query** (If required we can edit the SQL query)

Custom SQL Query (AdventureWorks2012)

Connection ☒ Live ☐ Extract Filters 0 [Add](#)

Custom SQL Query

- Open...
- Rename
- Convert to Custom SQL
- Remove
- Edit Custom SQL Query

Need more data?
Drag tables here to relate them. [Learn more](#)

Custom SQL Query 2 fields 1 rows

1 → rows ⚙️

Name
Custom SQL Query

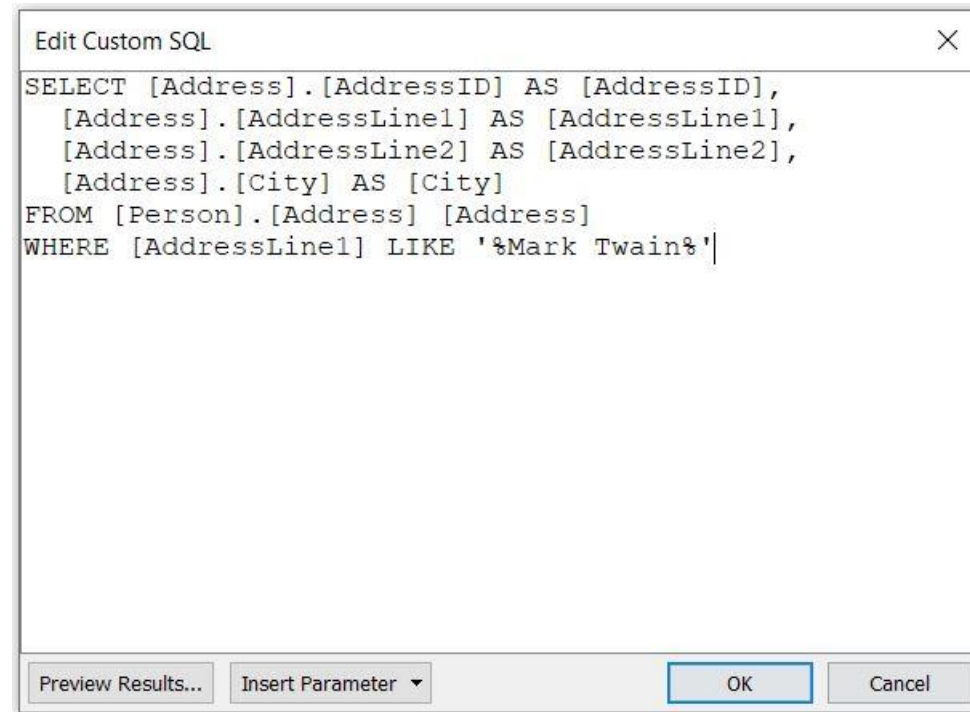
Fields

Type	Field Name	Physical Table	Remote Fiel...
Abc	AddressLine1	Custom SQL Query	AddressLine1
🌐	City	Custom SQL Query	City

Abc	🌐
Custom SQL Query	Custom SQL Query
AddressLine1	City
1519 Mark Twain Dr.	Melbourne

CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 14: Edit the SQL query in the **Edit Custom SQL** window
Once ready click on **OK**



CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 15: Click on Update Now

Custom SQL Query (AdventureWorks2012)

Connection: ☒ Live ☐ Extract Filters: 0 | Add

Custom SQL Query

Need more data?
Drag tables here to relate them. [Learn more](#)

Custom SQL Query

Update Now

Update Automatically

Type	Field Name	Physical Table	Remote Fi...
+	AddressID	Custom SQL Query	AddressID
Abc	AddressLine1	Custom SQL Query	AddressLine1
Abc	AddressLine2	Custom SQL Query	AddressLine2

Custom SQL Query (AdventureWorks2012)

Connection: ☒ Live ☐ Extract Filters: 0 | Add

Custom SQL Query

Need more data?
Drag tables here to relate them. [Learn more](#)

Custom SQL Query					4 fields 10 rows	10	→	rows	⚙	▼
Name					Custom SQL Query					
Custom SQL Query					+	Abc	Abc	+		
					AddressID	AddressLine1	AddressLine2	City		
					26,294	1519 Mark Twain Dr.	null	Melbourne		
					16,144	2120 Mark Twain Dr	null	Woodburn		
					18,949	3229 Mark Twain ...	null	Hamburg		
					24,713	6385 Mark Twain	null	Bendigo		
					25,944	6385 Mark Twain	null	Seattle		
					26,994	665 Mark Twain Dr.	null	Berkeley		

CONNECT TO RELATIONAL DATABASES AND PULL DATA BY USING CUSTOM SQL QUERIES

STEP 16: Go to **Sheet1** and now the view contains the updated records of the **Custom SQL Query** table

The screenshot displays a data visualization tool interface. On the left, the 'Data' pane shows a search bar and a list of folders: 'AddressLine1', 'AddressLine2', 'City', and 'Measure Names'. The 'City' folder is selected. The 'Columns' pane at the top right shows 'AddressLine1' and 'City' as selected columns. The 'Rows' pane shows 'AddressLine1' and 'City' as selected rows. The 'Marks' pane shows 'Automatic' as the mark type. The main view area displays a table titled 'Sheet 1' with the following data:

AddressLine1	City	
665 Mark Twain Dr.	Berkeley	Abc
872 Mark Twain Dr.	Goulburn	Abc
	Palo Alto	Abc
917 Mark Twain Dr.	Grossmont	Abc
1519 Mark Twain Dr.	Melbourne	Abc
2120 Mark Twain Dr.	Woodburn	Abc
3229 Mark Twain Dr.	Hamburg	Abc
6385 Mark Twain	Bendigo	Abc
	Seattle	Abc
8006 Mark Twain Dr.	Novato	Abc