

Lab 3: Building a Multi-Dataset Pizza Analytics Dashboard in MicroStrategy

1. Introduction and Lab Objectives

In the previous labs, we worked with a single dataset to build visualizations and explore MicroStrategy's core features. In this lab, we take a significant step forward by working with **multiple related datasets** to build a comprehensive analytics dashboard. This mirrors real-world scenarios where business data is rarely contained in a single table – instead, it is distributed across multiple sources that must be joined and linked to tell a complete story.

We will use a pizza restaurant dataset consisting of four CSV files that together describe the restaurant's menu, order history, and sales details. Through this lab, you will learn to:

- **Wrangle data** using MicroStrategy's Data Wrangling tools (duplicate columns, find-and-replace)
- **Create Multi-Form Attributes** to combine an ID field with its descriptive label
- **Import multiple datasets** and configure them for analysis
- **Link datasets** using shared attributes to resolve Cartesian join errors
- **Build KPI cards, Grid tables, Bar charts, and Line charts**
- **Create derived metrics** using the Formula Editor
- **Apply ranking and filtering** to isolate top-performing items

2. Understanding the Dataset

Our analysis is built on four CSV files that represent a relational data model for a pizza restaurant. Before importing, it is important to understand how these tables relate to each other.

File	Description	Key Fields
pizzas.csv	Individual pizza products with size and price	<code>pizza_id</code> , <code>pizza_type_id</code> , <code>size</code> , <code>price</code>
pizza_types.csv	Pizza type catalog with names, categories, and ingredients	<code>pizza_type_id</code> , <code>name</code> , <code>category</code> , <code>ingredients</code>
orders.csv	Order records with date and time	<code>order_id</code> , <code>date</code> , <code>time</code>
order_details.csv	Line items linking orders to specific pizzas and quantities	<code>order_details_id</code> , <code>order_id</code> , <code>pizza_id</code> , <code>quantity</code>

The relationships between these tables are as follows:

- `order_details` connects to `orders` through `order_id`
- `order_details` connects to `pizzas` through `pizza_id`
- `pizzas` connects to `pizza_types` through `pizza_type_id`

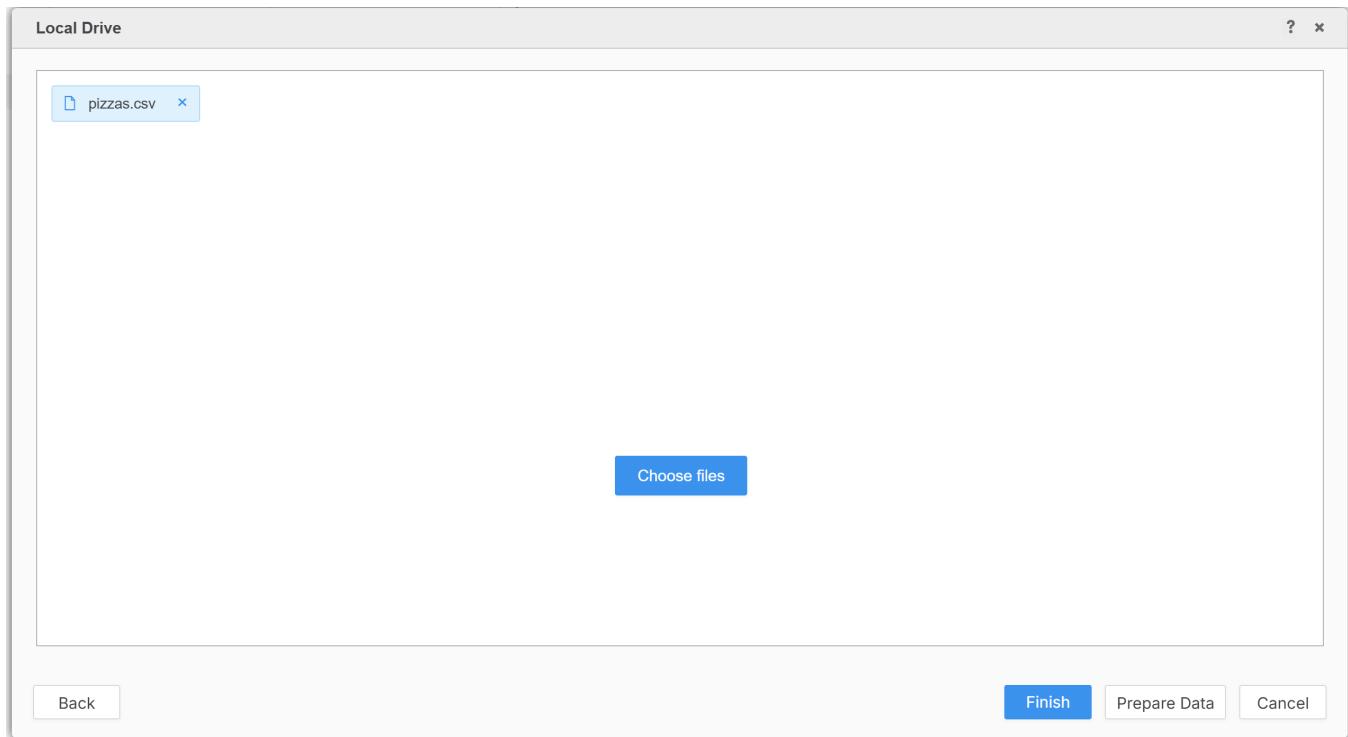
These links will be essential later when we need MicroStrategy to query across all four datasets without producing Cartesian join errors.

3. Importing and Preparing the `pizzas.csv` Dataset

The `pizzas.csv` file contains a `size` column with abbreviated values (`S`, `M`, `L`). For readability in our dashboard, we will create a descriptive version of this column and combine it with the original using a **Multi-Form Attribute**.

Importing the File

1. In the Data Set panel, click **New Data** and select **File from Disk**.
2. Choose the `pizzas.csv` file. Click **Prepare Data** (not Finish).



Duplicating and Transforming the Size Column

3. In the Data Wrangling view, right-click the `size` column header and select **Duplicate Column**. This creates a copy of the `size` column.

Data Wrangling

size ▾ Select Function ▾

Delete Column
Fill Down
Blank Down
To Title Case

Sample data: pizzas.csv

pizza_id	pizza_type_id	size	price
bbq_ckn_s	bbq_ckn	S	Rename
bbq_ckn_m	bbq_ckn	M	Delete Column
bbq_ckn_l	bbq_ckn	L	Duplicate Column
cali_ckn_s	cali_ckn	S	Fill Down
cali_ckn_m	cali_ckn	M	Text Selector
cali_ckn_l	cali_ckn	L	Numeric Selector
ckn_alfredo_s	ckn_alfredo	S	To Title Case
ckn_alfredo_m	ckn_alfredo	M	To Uppercase
ckn_alfredo_l	ckn_alfredo	L	To Lowercase
ckn pesto_s	ckn pesto	S	
ckn pesto_m	ckn pesto	M	
ckn pesto_l	ckn pesto	L	
southw_ckn_s	southw_ckn	S	
southw_ckn_m	southw_ckn	M	
southw_ckn_l	southw_ckn	L	
thai_ckn_s	thai_ckn	S	
thai_ckn_m	thai_ckn	M	
thai_ckn_l	thai_ckn	L	
big_meat_s	big_meat	S	

1 - 50 / 96 Rows

4. Rename the duplicated column to `size_desc`. With `size_desc` selected, use the **Find And Replace Characters In Cell** function to convert the abbreviations to full descriptions:

size_desc ▾

Search ▾

Delete Column

Fill Down

Blank Down

To Title Case

Sample data: pizzas.

pizza_id	pizz	price
bbq_ckn_s	bbq_	12.75
bbq_ckn_m	bbq_	16.75
bbq_ckn_l	bbq_	20.75
cali_ckn_s	cali	12.75
cali_ckn_m	cali	16.75
cali_ckn_l	cali	20.75
ckn_alfredo_s	ckn_	12.75
ckn_alfredo_m	ckn_	16.75
ckn_alfredo_l	ckn_	20.75
ckn_pesto_s	ckn_pesto	S S 12.75
ckn_pesto_m	ckn_pesto	M M 16.75
ckn_pesto_l	ckn_pesto	L L 20.75
southw_ckn_s	southw_ckn	S S 12.75
southw_ckn_m	southw_ckn	M M 16.75
southw_ckn_l	southw_ckn	L L 20.75
thai_ckn_s	thai_ckn	S S 12.75
thai_ckn_m	thai_ckn	M M 16.75
thai_ckn_l	thai_ckn	L L 20.75
big_meat_s	big_meat	S S 12

1 - 50 / 96 Rows

- Replace S with Small
- Replace M with Medium
- Replace L with Large

Your Script panel should show the following transformations:

Data Wrangling

size_desc ▾ Find And Repla... ▾ S Small

Delete Column

Fill Down

Blank Down

To Title Case

Sample data: pizzas.csv

pizza_id ▾	pizza_type_id ▾	size ▾	size_desc ▾	price ▾
bbq_ckn_s	bbq_ckn	S	Small	12.75

Script



- 1) Rename Column [size 1] To {size_desc}
- 2) Find And Replace Characters In Cell From 'S' To 'Small' [size_desc] (32 R...
- 3) Find And Replace Characters In Cell From 'M' To 'Medium' [size_desc] (31...
- 4) Find And Replace Characters In Cell From 'L' To 'Large' [size_desc] (33 R...

Creating a Multi-Form Attribute

A **Multi-Form Attribute** allows you to combine two related fields – such as an ID and a description – into a single logical attribute. When used in a visualization, MicroStrategy will display both forms together automatically.

5. Go back to the Data Editor, select both **size** and **size desc**, right-click, and select **Create Multi-form Attribute**.

▼ Dashboard Parameters

 Create Parameter

▼ pizzas.csv

⋮

In memory

 Create Objects

 pizza id

 pizza type id

 size

 size desc

 price

 Row Count - piz...

6. MicroStrategy will display the two forms: the `ID` form (the original abbreviation) and the `DESC` form (the full description).

Lab3 instructions

The screenshot shows a data preview of a CSV file named 'pizzas.csv'. The file contains five columns: pizza id, pizza type id, size, size desc, and price. The 'size' column has two distinct values: 'L' and 'Large'. A context menu is open over the 'size' column, with the 'Create Multi-form Attribute' option highlighted. This option has three sub-options: 'Convert to Metric', 'Do Not Import', and 'Create Multi-form Attribute'. Below the preview, a modal window titled 'Create Multi-form Attribute' is displayed. It shows the new attribute name 'size' and two form categories: 'size' and 'size desc'. Under 'size', the display form is set to 'ID'. Under 'size desc', the display form is set to 'DESC'. At the bottom of the modal are 'Submit' and 'Cancel' buttons.

pizza id	pizza type id	size	size desc	price
bbq_ckn_l	bbq_ckn	L	Large	20.75
big_meat_l	big_meat	L	Large	20.5
calabrese_l	calabrese	L	Large	20.25
call_ckn_l	call_ckn	L	Large	20.75

- Click **Submit**. Notice the **size** attribute now consists of two fields. Click **Update Dataset**.

The screenshot shows a data preview interface. On the left, there's a dashed box labeled "Add a new table". To its right is a table titled "pizzas.csv" with the following structure:

Attributes	Metrics
pizza id	
pizza type id	
size	
	price

Below this, a "Data preview" section shows the first 50 rows of data:

pizza id	pizza type id	size	price
bbq_ckn_l	bbq_ckn	L	20.75
big_meat_l	big_meat	L	20.5
calabrese_l	calabrese	L	20.25

Buttons at the bottom right of the preview area include "Update Dataset" and "Cancel".

8. You may be asked to confirm the data source. Click **OK** to proceed.

A publishing status dialog box is overlaid on the data preview interface. The dialog has a title "pizzas.csv Publishing Status" and contains the following fields:

Data Source	Refresh Policy
pizzas.csv	Upload Replace existing data

At the bottom of the dialog are "Finish" and "Cancel" buttons.

9. **Verification:** Drag the **size** attribute onto the canvas. Notice it will automatically show both the ID and description forms.

The screenshot shows the Data Studio interface with the following details:

- DATASETS** panel on the left:
 - All
 - Dashboard Parameters
 - + Create Parameter
 - pizzas.csv (In memory)
 - + Create Objects
 - pizza id
 - pizza type id
 - size
 - price
 - Row Count - pizzas...
- EDITOR** panel on the left:
 - Visualization 1
 - Rows: size
 - Columns: (empty)
 - Metrics: (empty)
- Visualization 1** (main area):

size	
L	Large
M	Medium
S	Small
XL	XLarge
XXL	XXLarge

10. Rename `Row Count - pizzas.csv` to `Number of Pizzas`.

The screenshot shows the Data Studio interface with the following details:

- EDITOR** panel on the left:
 - Visualization 1
 - Rows: pizza id, pizza type id, size
 - Columns: Metric Names
 - Metrics: price
- Visualization 1** (main area):

pizza id	pizza type id	size	price	
bbq_ckn_l	bbq_ckn	L	Large	20.75
bbq_ckn_m	bbq_ckn	M	Medium	16.75
bbq_ckn_s	bbq_ckn	S	Small	12.75
big_meat_l	big_meat	L	Large	20.5
big_meat_m	big_meat	M	Medium	16
big_meat_s	big_meat	S	Small	12
	brie_carre	S	Small	23.65
calabrese_l	calabrese	L	Large	20.25
calabrese_m	calabrese	M	Medium	16.25
calabrese_s	calabrese	S	Small	12.25
cali_ckn_l	cali_ckn	L	Large	20.75
cali_ckn_m	cali_ckn	M	Medium	16.75
cali_ckn_s	cali_ckn	S	Small	12.75
ckn_alfredo_l	ckn_alfredo	L	Large	20.75
ckn_alfredo_m	ckn_alfredo	M	Medium	16.75
ckn_alfredo_s	ckn_alfredo	S	Small	12.75
ckn_pesto_l	ckn_pesto	L	Large	20.75
ckn_pesto_m	ckn_pesto	M	Medium	16.75
ckn_pesto_s	ckn_pesto	S	Small	12.75
classic_dlx_l	classic_dlx	L	Large	20.5
classic_dlx_m	classic_dlx	M	Medium	16

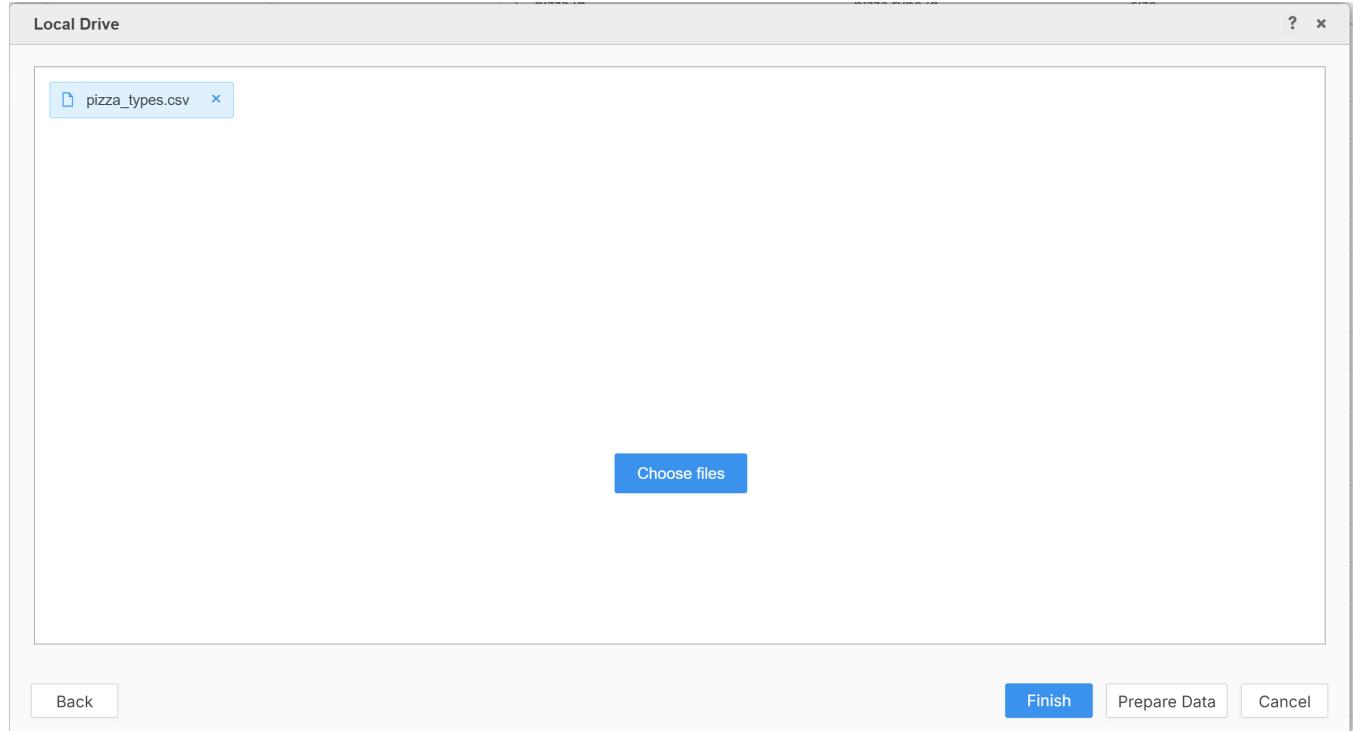
4. Adding the Remaining Datasets

With `pizzas.csv` configured, we now import the three remaining datasets. Each requires a slightly different level of preparation.

Adding `pizza_types.csv`

1. In the Data Set panel, click **New Data** and import the `pizza_types.csv` file. Click **Finish** – no additional

preparation is needed.



2. Create a new Page and inspect the pizza types to verify the data loaded correctly.

pizza type id	category	ingredients	name
bbq_ckn	Chicken	Barbecued Chicken, Red Peppers, Green Peppers, Tomatoes, Red Onions, Barbecue Sauce	The Barbecue Chicken Pizza
big_meat	Classic	Bacon, Pepperoni, Italian Sausage, Chorizo Sausage	The Big Meat Pizza
brie_carre	Supreme	Brie Carre Cheese, Prosciutto, Caramelized Onions, Pears, Thyme, Garlic	The Brie Carre Pizza
calabrese	Supreme	Calabrese Salami, Pancetta, Tomatoes, Red Onions, Friggitello Peppers, Garlic	The Calabrese Pizza
cali_ckn	Chicken	Chicken, Artichoke, Spinach, Garlic, Jalapeno Peppers, Fontina Cheese, Gouda Cheese	The California Chicken Pizza
ckn_alfredo	Chicken	Chicken, Red Onions, Red Peppers, Mushrooms, Asiago Cheese, Alfredo Sauce	The Chicken Alfredo Pizza
ckn_pesto	Chicken	Chicken, Tomatoes, Red Peppers, Spinach, Garlic, Pesto Sauce	The Chicken Pesto Pizza
classic_dlx	Classic	Pepperoni, Mushrooms, Red Onions, Red Peppers, Bacon	The Classic Deluxe Pizza
five_cheese	Veggie	Mozzarella Cheese, Provolone Cheese, Smoked Gouda Cheese, Romano Cheese, Blue Cheese, Garlic	The Five Cheese Pizza
four_cheese	Veggie	Ricotta Cheese, Gorgonzola Piccante Cheese, Mozzarella Cheese, Parmigiano Reggiano Cheese, Garlic	The Four Cheese Pizza
green_garden	Veggie	Spinach, Mushrooms, Tomatoes, Green Olives, Feta Cheese	The Green Garden Pizza
hawaiian	Classic	Sliced Ham, Pineapple, Mozzarella Cheese	The Hawaiian Pizza
ital_cpcllo	Classic	Capocollo, Red Peppers, Tomatoes, Goat Cheese, Garlic, Oregano	The Italian Capocollo Pizza
ital_supr	Supreme	Calabrese Salami, Capocollo, Tomatoes, Red Onions, Green Olives, Garlic	The Italian Supreme Pizza
ital_veggie	Veggie	Eggplant, Artichokes, Tomatoes, Zucchini, Red Peppers, Garlic, Pesto Sauce	The Italian Vegetables Pizza
mediterraneo	Veggie	Spinach, Artichokes, Kalamata Olives, Sun-dried Tomatoes, Feta Cheese, Plum Tomatoes, Red Onions	The Mediterranean Pizza
mexicana	Veggie	Tomatoes, Red Peppers, Jalapeno Peppers, Red Onions, Cilantro, Corn, Chipotle Sauce, Garlic	The Mexicana Pizza
napolitana	Classic	Tomatoes, Anchovies, Green Olives, Red Onions, Garlic	The Napolitana Pizza
pepperoni_mushroom	Classic	Pepperoni, Mushrooms, Green Peppers	The Pepperoni, Mushroom, and

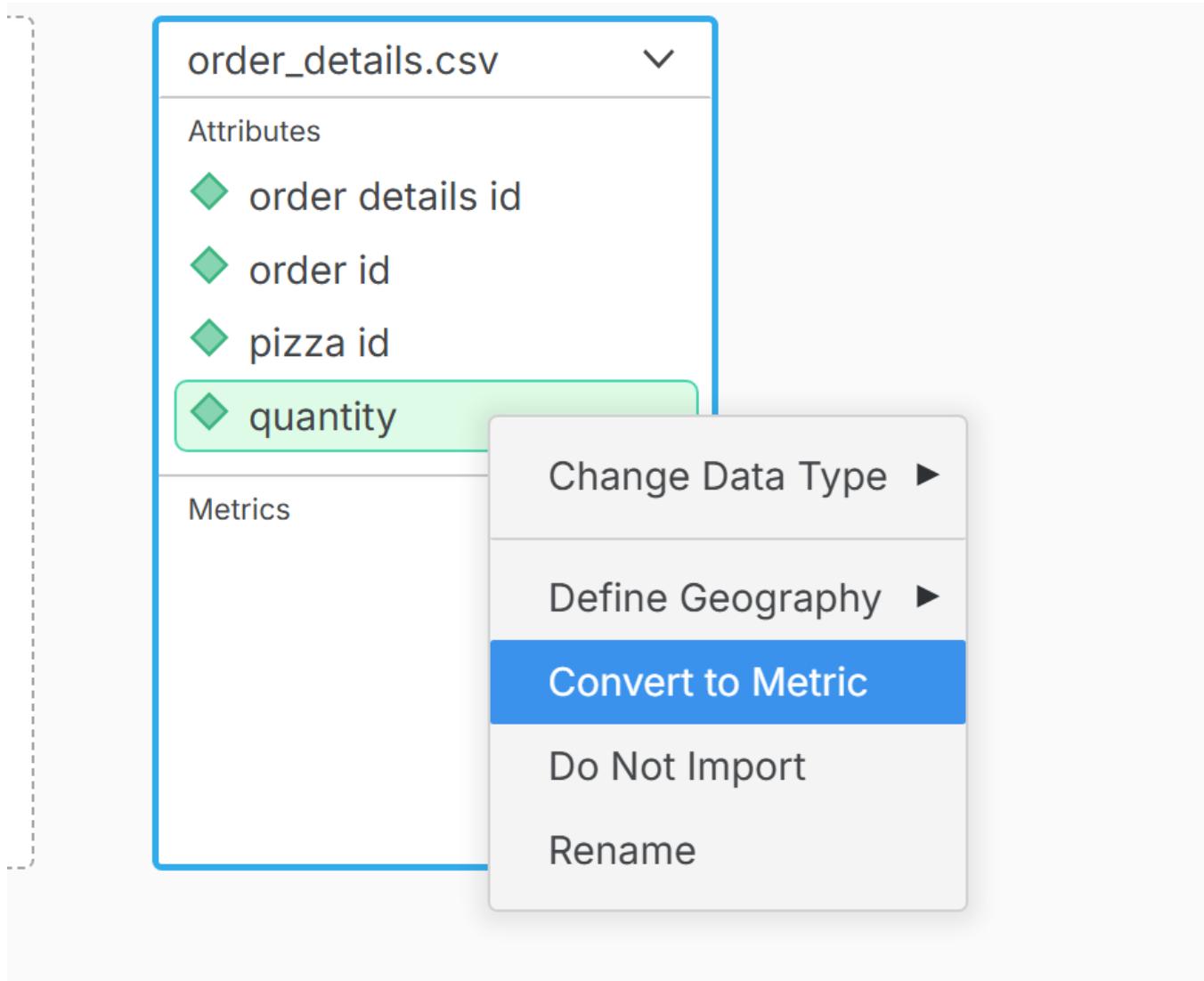
3. Rename Row Count - pizza_types.csv to Number of Pizza Types.

Adding orders.csv

4. Import orders.csv. Nothing needs to be updated – you can load it as is. Rename Row Count - orders.csv to Number of Orders.

Adding order_details.csv

5. Import `order_details.csv` and click **Prepare Data**. Notice that `quantity` has been incorrectly identified as an **attribute** rather than a **metric**. Right-click `quantity` and select **Convert to Metric**, then click **Finish**.



5. Linking Datasets with Shared Attributes

At this point, all four datasets are loaded but **isolated from each other**. If you try to drag attributes from different datasets onto the same visualization (e.g., `order id` from `orders.csv` and `name` from `pizza_types.csv`), you will encounter a **Cartesian join error**. This occurs because MicroStrategy does not know how the datasets relate to each other.

The screenshot shows the Data Studio interface. On the left, the 'DATASETS' panel lists three datasets: 'pizzas.csv' (in memory), 'pizza_types.csv' (in memory), and 'orders.csv' (in memory). 'pizzas.csv' contains fields like 'pizza id', 'pizza type id', 'size', 'Number of Pizzas', and 'price'. 'pizza_types.csv' contains fields like 'category', 'ingredients', 'name', 'pizza type id', and 'Number of Pizzas'. 'orders.csv' contains fields like 'date', 'order id', 'time', and 'Row Count - or...'. On the right, the 'EDITOR' panel shows 'Visualization 1' with a query editor. The query is as follows:

```

SELECT
    o.order_id,
    o.name
FROM
    pizzas AS p
    CROSS JOIN pizza_types AS pt
    CROSS JOIN orders AS o
    WHERE p.pizza_id = pt.pizza_type_id
    AND o.order_id = p.order_id

```

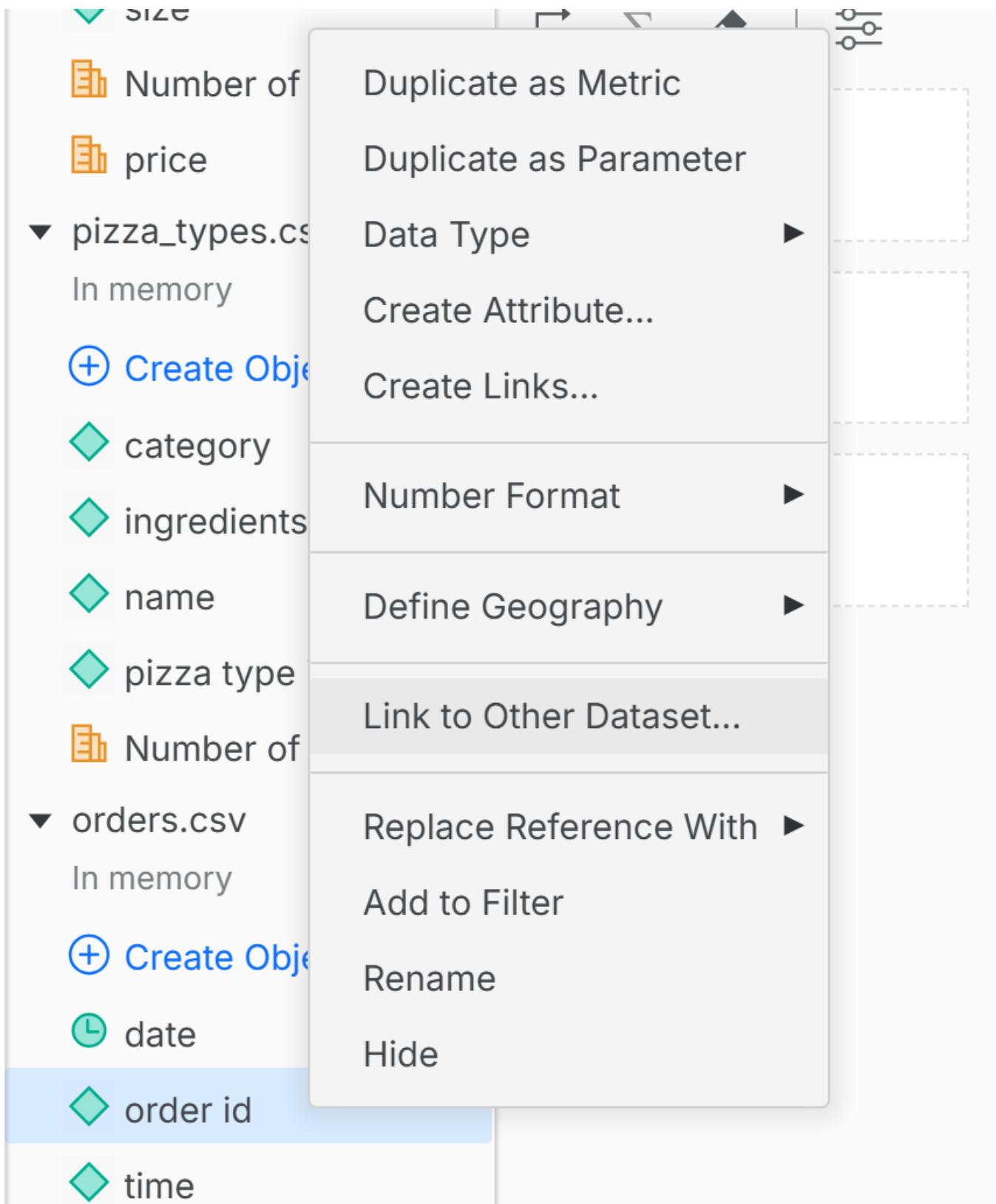
A tooltip message indicates: '(A cartesian join is detected and execution is aborted per "Cartesian Join Governing" setting. Please review the design of the report/visualization. Excerpt of the query: Ex12_tempcube0 cross join Ex12_tempcube1.[Strategy Error Instance: 5A4D695245F81614B03B9CAD5DB8621B])'

To resolve this, we must create **links** between datasets using their shared key columns. We will establish three links:

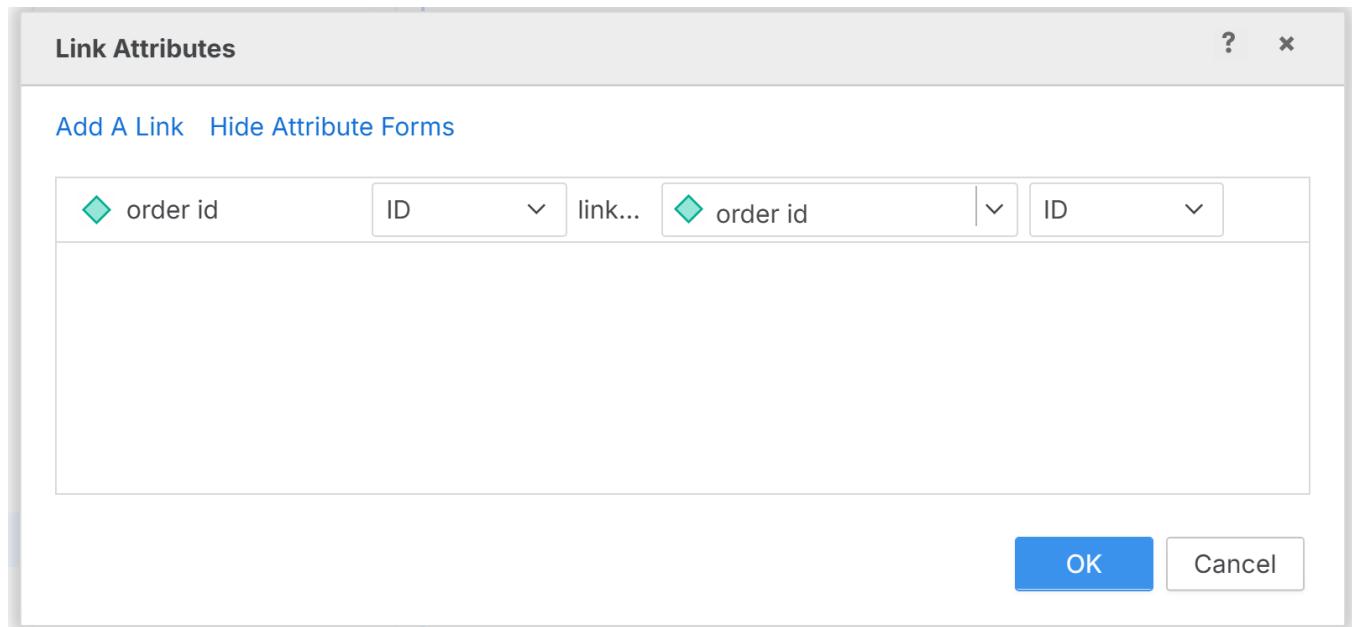
Link	From Dataset	To Dataset	Through Column
Orders ↔ Order Details	order_details.csv	orders.csv	order_id
Pizzas ↔ Pizza Types	pizzas.csv	pizza_types.csv	pizza_type_id
Order Details ↔ Pizzas	order_details.csv	pizzas.csv	pizza_id

Link 1: order_id (Order Details → Orders)

1. In the Data Set panel, right-click `order_id` (under `order_details.csv`) and select **Link to Other Dataset...**



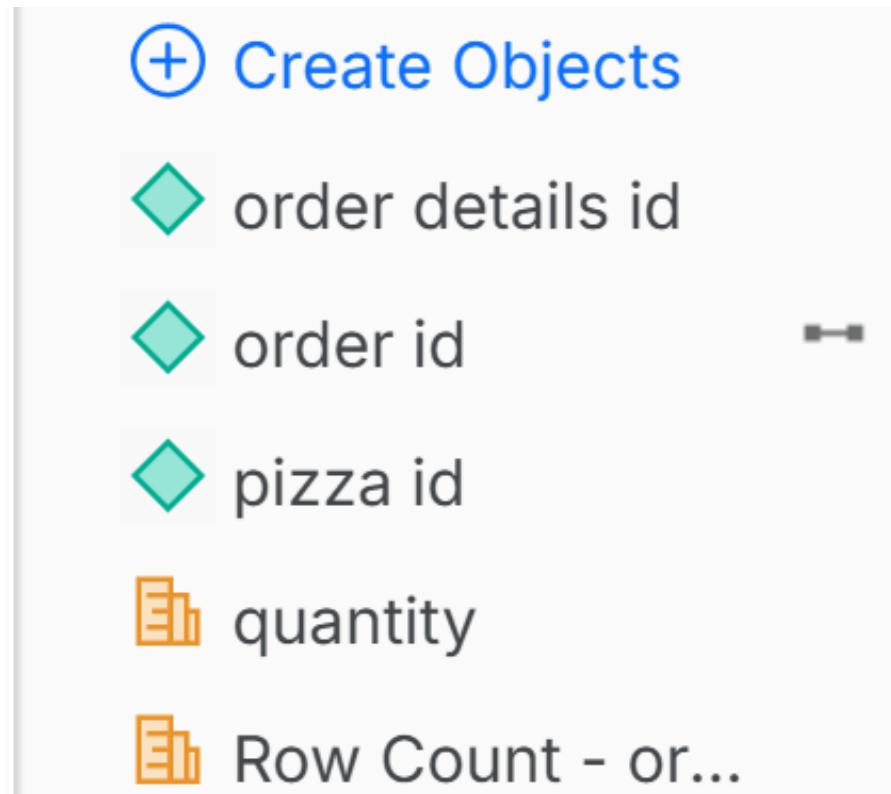
2. In the **Link Attributes** dialog box, click **Show Attribute Forms** to verify the mapping. You should see `order_id (ID)` linked to `order_id (ID)`. Click **OK**.



3. Notice the link icons that now appear next to the linked fields in the Data Set panel.

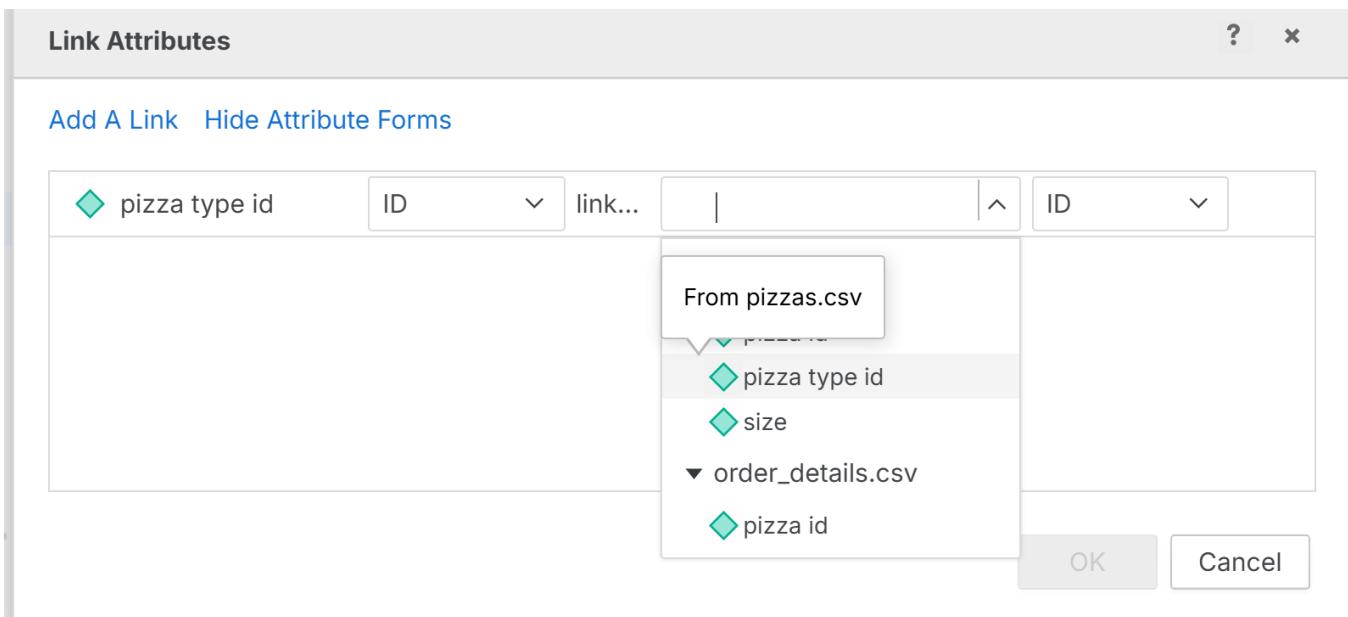
The screenshot shows the Data Set panel with two entries:

- orders.csv**:
 - In memory
 - Create Objects**
 - date**
 - order id** (linked field, indicated by a green diamond icon)
 - time**
 - Row Count - or...**
- order_details.csv**:
 - In memory



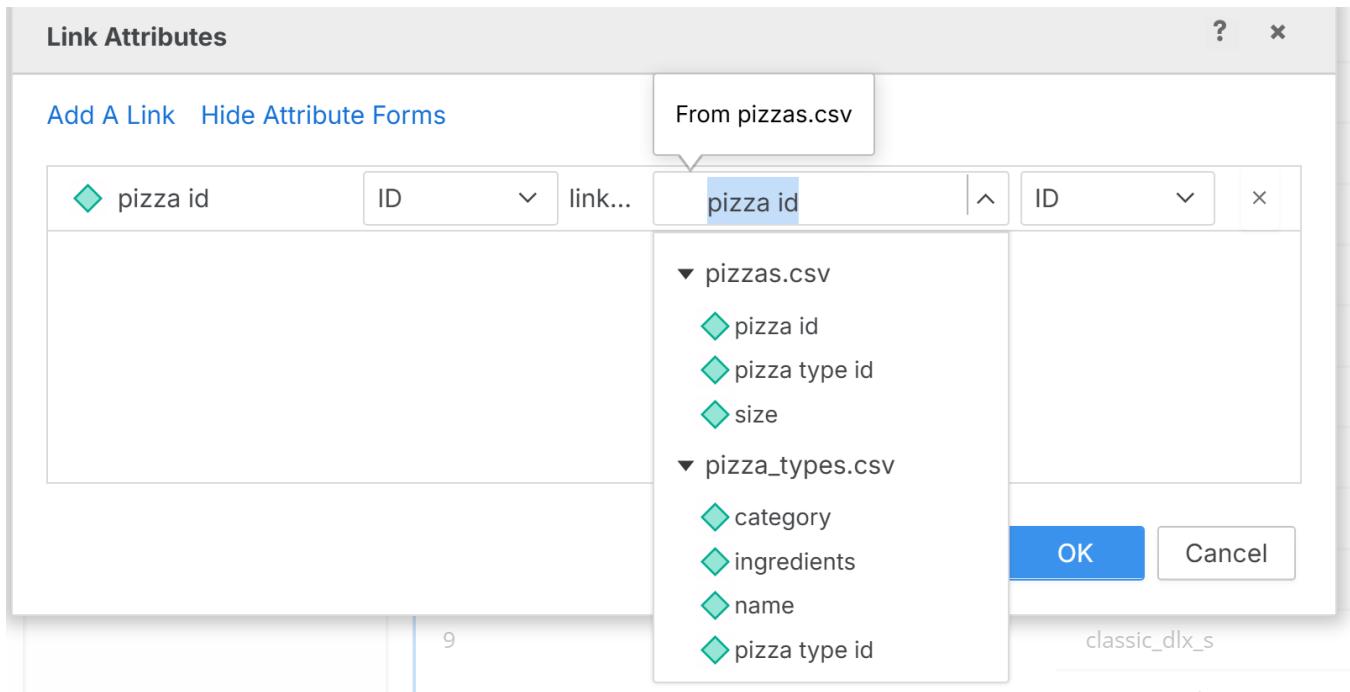
Link 2: pizza_type_id (Pizzas → Pizza Types)

- Right-click `pizza_type_id` (under `pizzas.csv`) and select **Link to Other Dataset...** to link it to the `pizza_types.csv` dataset through the `pizza_type_id` column.



Link 3: pizza_id (Order Details → Pizzas)

- From `order_details.csv`, right-click `pizza_id` and link it to the `pizzas.csv` dataset through the `pizza_id` column.



With all three links established, MicroStrategy can now query across all four datasets seamlessly.

6. Building KPI Cards and Derived Metrics

KPI cards provide at-a-glance summary statistics – the executive view of our restaurant's performance. We will create three KPI cards: Total Number of Orders, Number of Ordered Pizzas, and Average Pizzas per Order.

KPI 1: Total Number of Orders

1. Add a new visualization and select **KPI** from the visualization type menu.

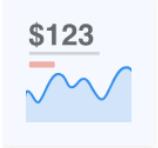
-  Grid
-  KPI
-  Bar
-  Line
-  Pie
-  Map
-  More
-  Custom

KPI

Provides quick performance indications as a single numeric or with an additional trend indicator

Uses 1+  attributes and 1  metric

Example: View daily unique visitor counts for a website over the last month



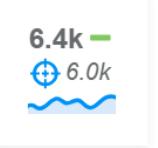
\$123





-12% 
16% 



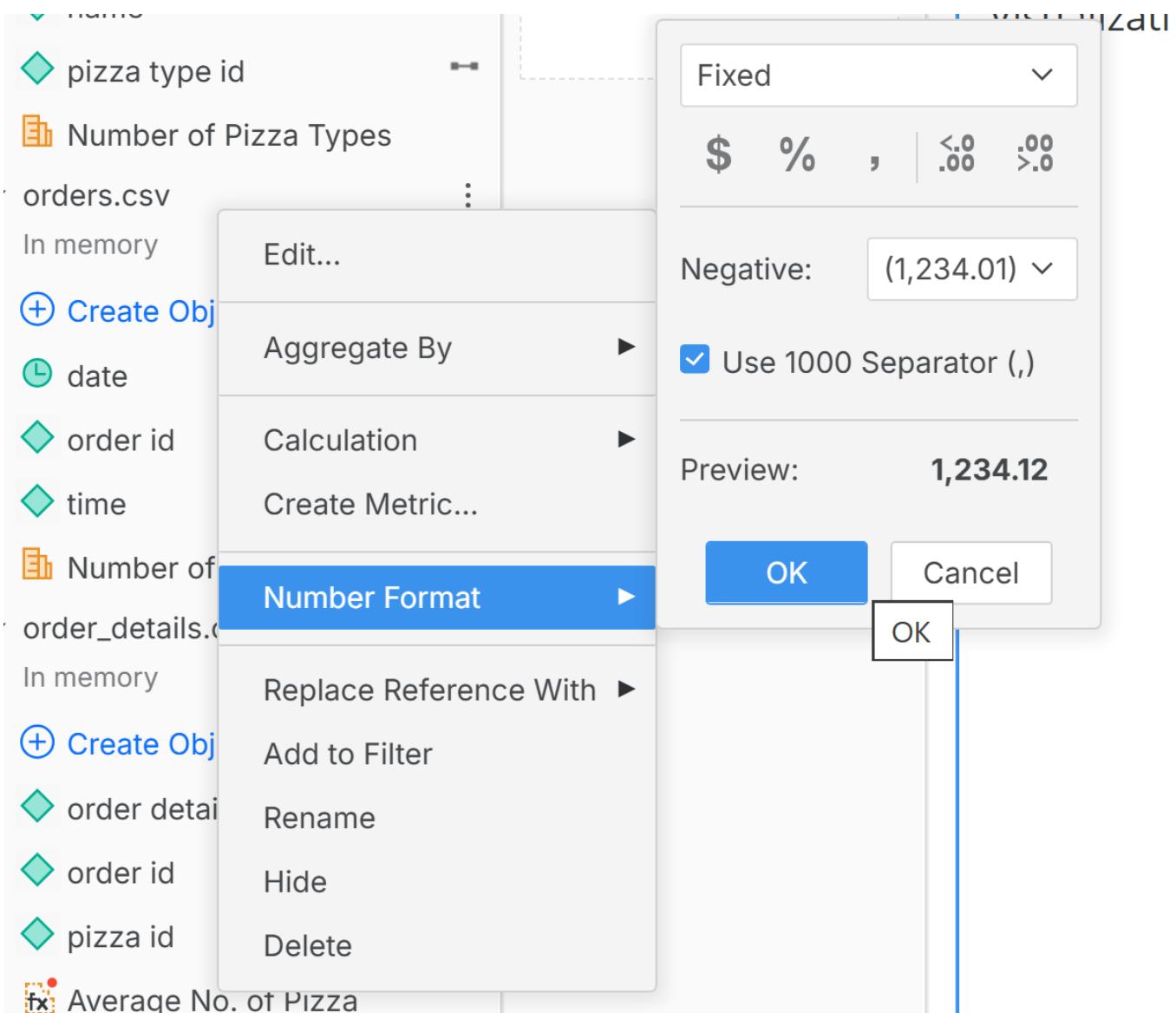


6.4k 
6.0k





2. Drag **Number of Orders** into the KPI. Optionally, format the number to use a thousands separator (right-click the metric > **Number Format** > enable **Use 1000 Separator**).



KPI 2: Number of Ordered Pizzas

3. Add another **KPI** card. Drag `quantity` (from `order_details.csv`) into it. Name this KPI `Number of Ordered Pizzas`.

Total Number of Orders

21,350

Number of Ordered Pizzas

96

4. To break this KPI down by pizza category, drag `category` (from `pizza_types.csv`) into the **Break By** zone.

Number of Ordered Pizzas



Chicken

Classic

Supreme

Veggie

18

26

25

27

5. Drag **date** into the **Trend** zone and resize the KPI card by dragging it downward to give it more display space.

Total Number of Orders

21,350

Average No. of Pizzas per Order

2.32

Number of Ordered Pizzas



Chicken

Classic

Supreme

Veggie

13

+ 8.3%

2

- 90.0%

17

+ 70...

3

- 85.0%

Previous date: 12

Previous date: 20

Previous date: 10

Previous date: 20

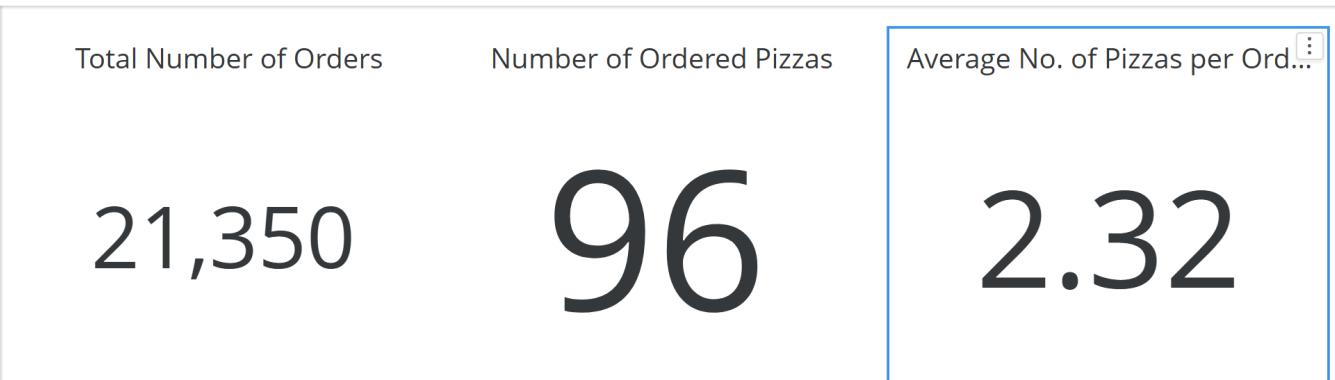
KPI 3: Average Pizzas per Order (Derived Metric)

6. Create a new metric by switching to the **Formula Editor**. Enter the formula:

```
1 | quantity / [Number of Orders]
```

Click **Validate** to confirm the formula is correct, then click **Save**.

7. Add this derived metric as a third KPI card and name it `Average No. Pizzas per Order`. You should now have three KPIs displayed at the top of your dashboard:



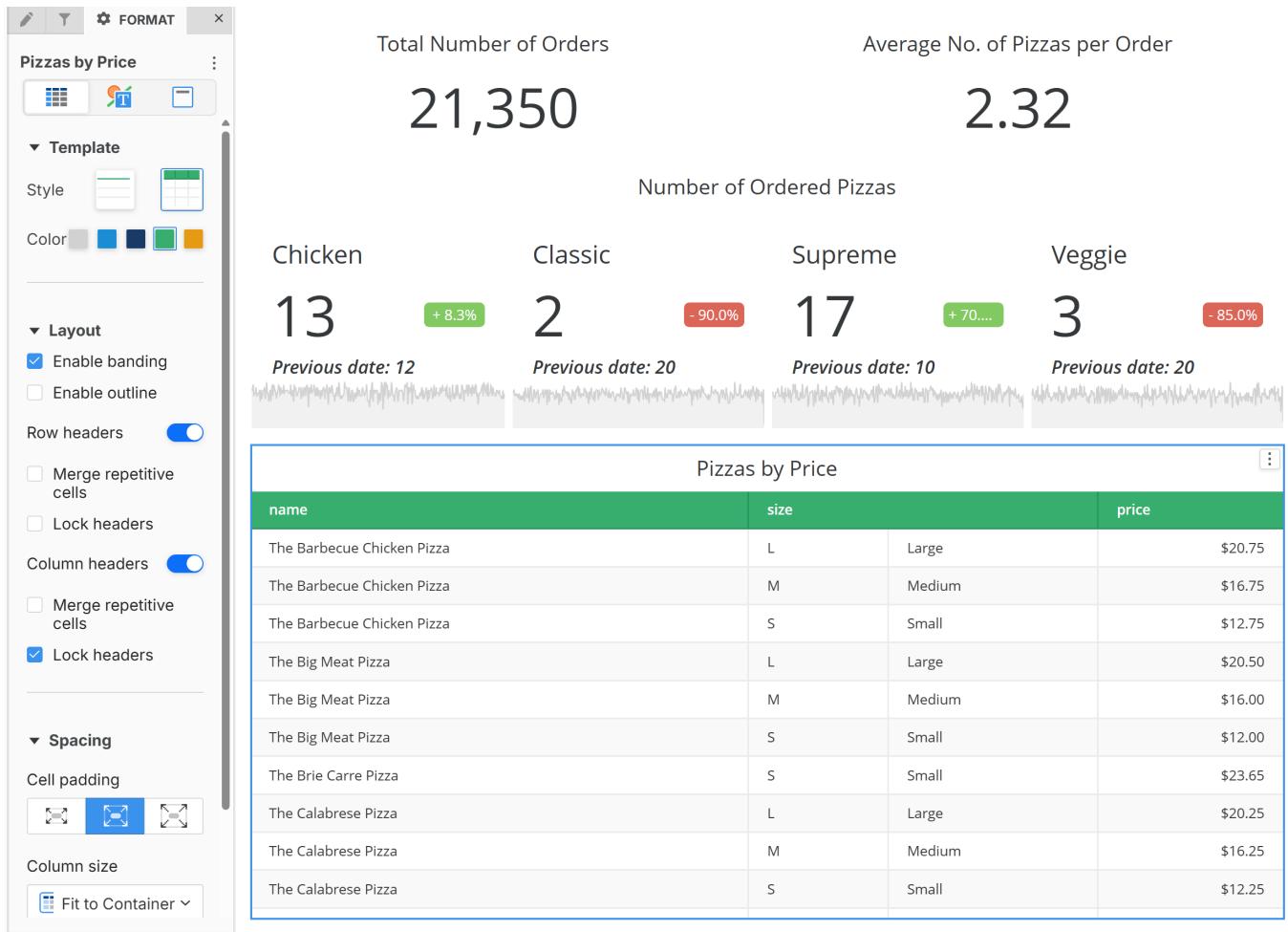
7. Building a Grid Visualization: Pizzas by Price

A **Grid** visualization displays data in a tabular format, ideal for detailed inspection of individual records.

1. Add a new **Grid** visualization below the KPI cards.

The screenshot shows a visualization editor interface. On the right, there is a large red text area displaying the number "21,350" with the title "Total Number of Orders" above it. On the left, a sidebar titled "FORMAT" contains several sections: "Total Number of Ord..." (with a dropdown menu), "Font" (with "Text Size" set to "Fit to Container"), "Open Sans" font selection, and "B", "I", "U", "BOLD", "ITALIC", "UNDERLINE" buttons. Below these are "T+", "T-", and a color picker. The "Shape" section includes "Area" (set to 100%) and "Thresholds". Under "Thresholds", there is a checked entry for "Threshold 1" with "From" set to 2000 and "To" set to 22000, and a color picker set to red. At the bottom of the sidebar, there is a note: "Add 1 or more attributes and/or 1 or more metrics".

2. Drag the following fields into the Grid: `name`, `size`, and `price`. Format the price column as currency if desired.
3. Name the visualization `Pizzas by Price`.



8. Building a Top 5 Selling Pizzas Chart

To identify the restaurant's best sellers, we will create a **Horizontal Bar Chart** filtered to display only the top 5 pizzas by quantity sold. This requires using MicroStrategy's **Rank** function and a visualization-level filter.

Creating the Bar Chart

1. Add a **Horizontal Bar Chart** to the right of the Grid visualization.
2. Drag `name` to the vertical axis and `quantity` to the horizontal axis.

Creating a Rank Metric

3. Create a new metric using the **Rank** function on `quantity`. Name it `Rank for Quantity`. Sort the chart descending by `quantity`.

Metric Editor - New Metric

fx Functions

rank Search result

PercentRank
PercentRankRelative
Rank

Metric Name: Rank for Quantity

Description:

Function: Rank

Rank*:

Rank Order: Ascending

Display As: [Number (1,2,3)] [Percentage (10%,50%,100%)]

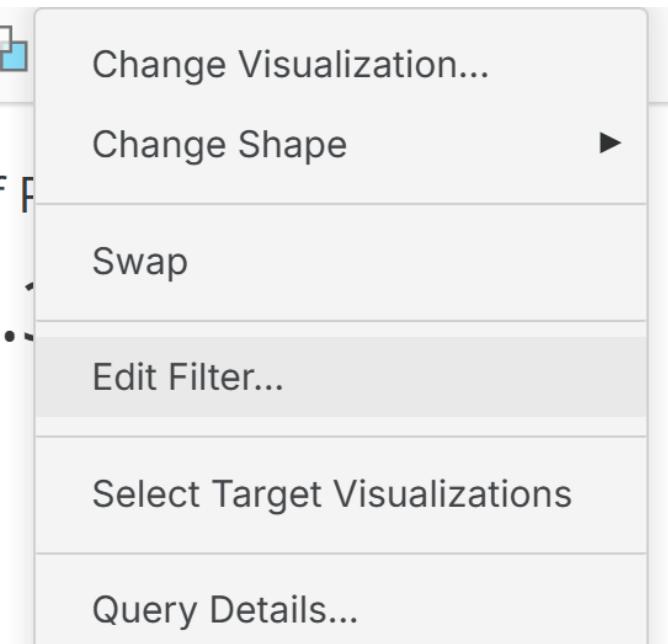
Treat Null Value As: Default

Break By: Automatic
Search for attribute

Rank(ValueList)
Returns the rank of the values in a list, relative to the other values. [Details...](#)

Filtering to Top 5

4. Add the `Rank for Quantity` metric as a **filter** to the visualization (not a global filter).



Average No. of Pizzas Ordered

2. Supreme

of Ordered Pizzas

Change Visualization...
Change Shape ►
Swap
Edit Filter...
Select Target Visualizations
Query Details...

.0%

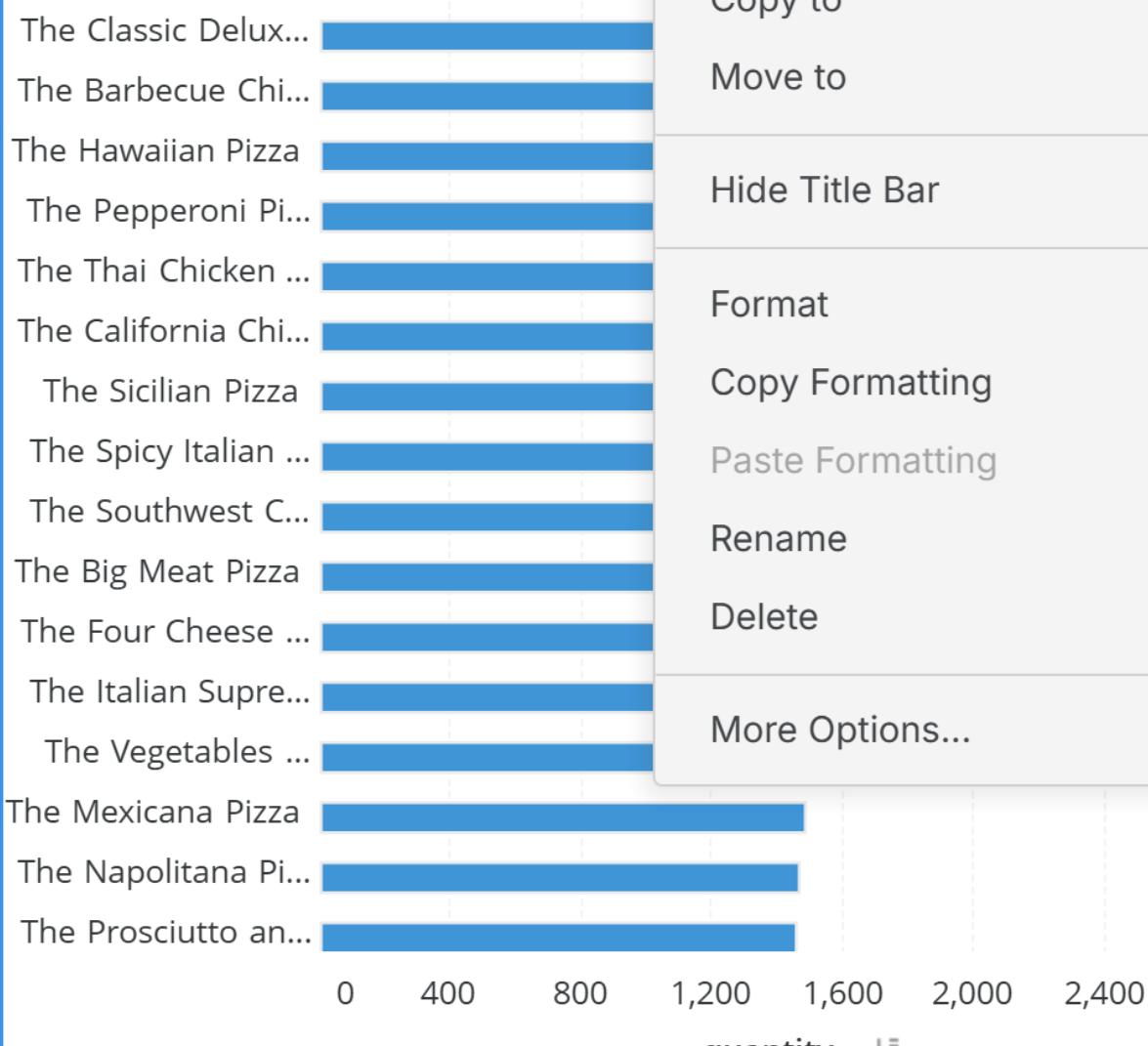
17

+ 70....

Previous date: 10

Visualization 1

name



Show Data

Remove Data

Data Source

Export

Duplicate

Copy to

Move to

Hide Title Bar

Format

Copy Formatting

Paste Formatting

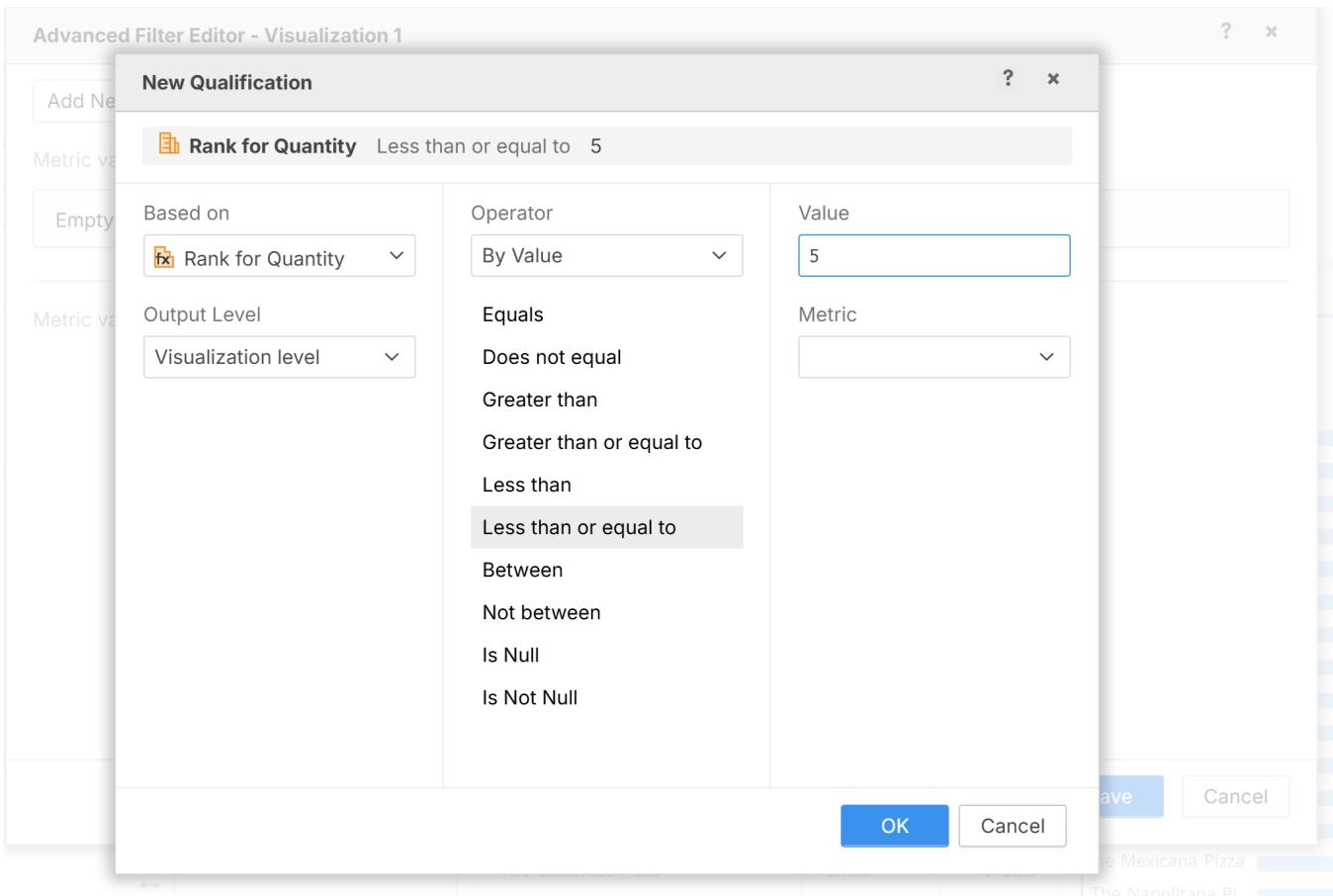
Rename

Delete

More Options...

5. Click **Add Qualification**. In the **New Qualification** window:

- Set **Based on** to the `Rank for Quantity` metric
- Set **Operator** to `Less than or equal to`
- Set **Value** to `5`



6. Click **Save**.

Correcting the Rank Order

7. If the results do not show the top sellers as expected, inspect the `Rank for Quantity` metric and change the **Rank Order** from Ascending to **Descending**.

Metric Editor - Rank for Quantity ? ×

Display Name: Rank for Quantity [Metric Options](#)

Description:

Function: Rank

Rank*:

Rank Order:

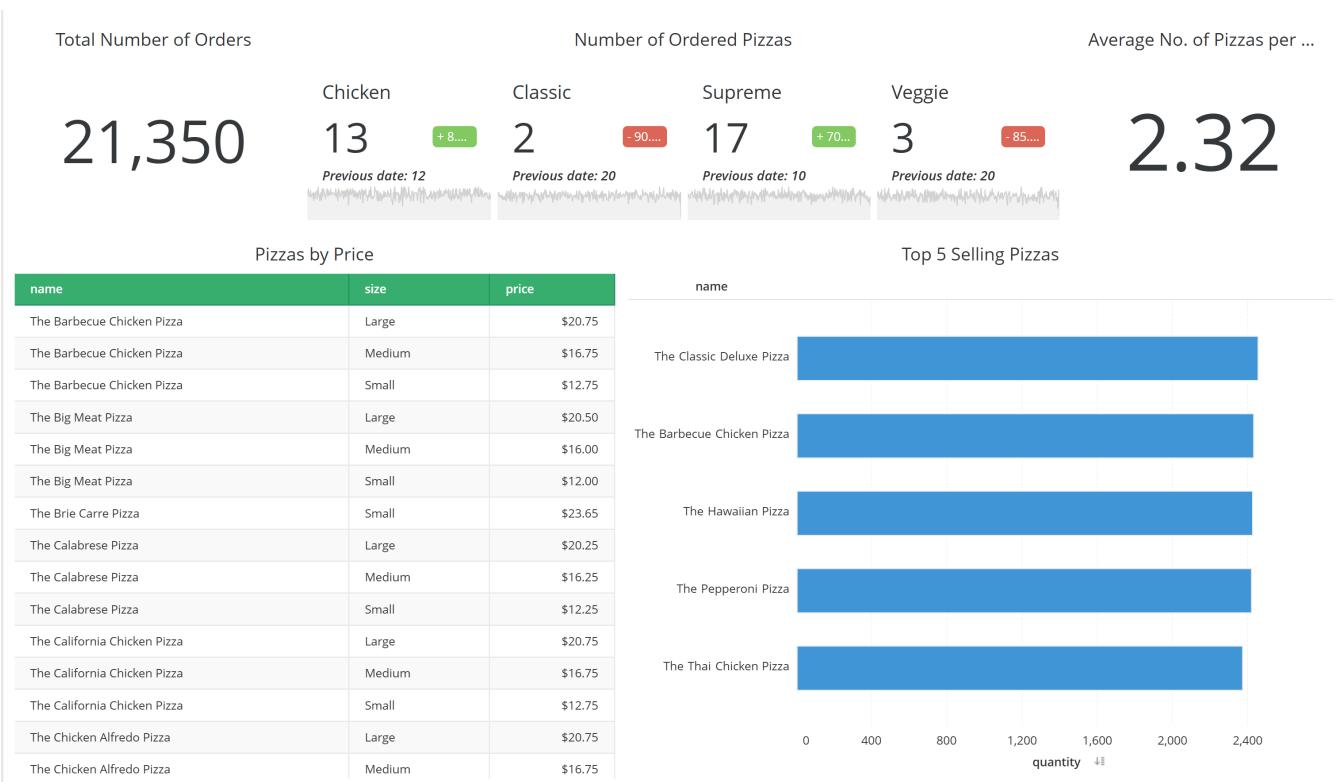
Display As: [Number (1,2,3)] [Percentage (10%,50%,100%)]

Treat Null Value As:

Break By:

Rank(ValueList)
Returns the rank of the values in a list, relative to the other values. [Details...](#)

8. Name this visualization **Top 5 Selling Pizzas**. Rearrange the KPIs to be on the same row to create more space for the visualizations below.



9. Analyzing Order Trends Over Time

To observe seasonal patterns and monthly fluctuations in order volume, we will add a **Line Chart** that plots the number of orders over time.

Generating Date Attributes

1. Right-click the `date` field (from `orders.csv`) to generate new date-based attributes such as `Month of Year` and `Month`.

The screenshot shows the Tableau interface with a context menu open over a dataset field. The menu options include:

- Duplicate as Metric
- Duplicate as Parameter
- Data Type
- Create Attribute...
- Create Links...
- Number Format
- Create Time Attributes** (highlighted in blue)
- Link to Other Dataset...
- Replace Reference With
- Add to Filter
- Rename
- Hide

A secondary context menu is visible on the right side of the screen, titled "Create Time Attributes". It contains the following options:

- Year
- Quarter of Year
- Quarter
- Month of Year
- Month
- Week of Year
- Week
- Day of Year
- Day of Month
- Day of Week

At the bottom of this menu are "OK" and "Cancel" buttons.

Building the Line Chart

2. Add a new **Line** chart visualization.
3. Replace the raw `date` field with the `date (Month)` field to aggregate orders at the monthly level. Drag `Number of Orders` to the vertical axis.

4. Name this visualization **Number of Orders per Month**.

10. Creating the Order Volume Metric

As a final exercise, create a derived metric called **Order Volume** that calculates the total revenue per line item. In the Formula Editor, enter:

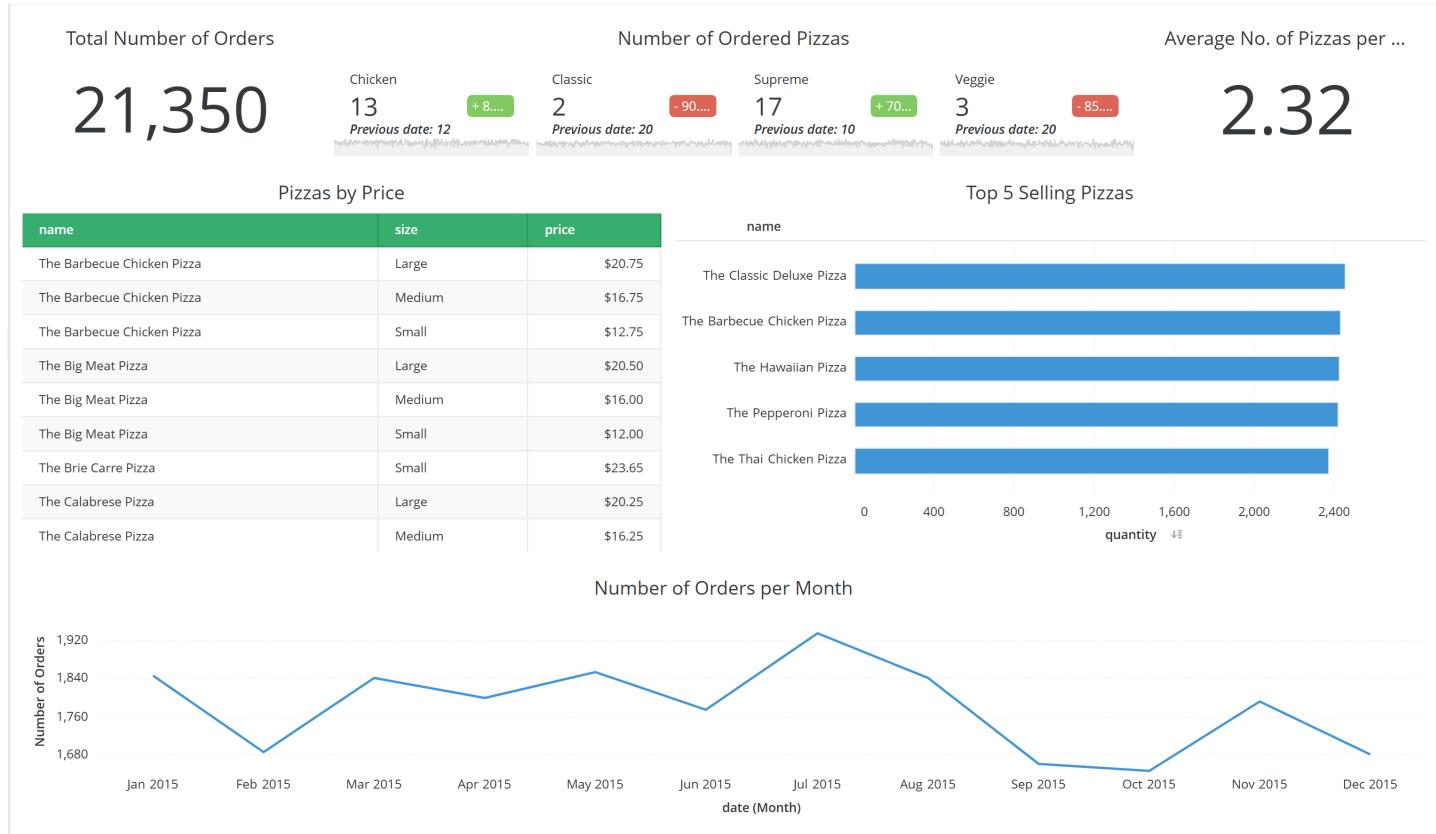
1 | Order Volume = Quantity x Price

This metric multiplies the number of pizzas ordered by their unit price, giving you a revenue figure that can be used in further analysis.

Final Dashboard

Your completed dashboard should include the following components:

- **3 KPI Cards** at the top: Total Number of Orders, Number of Ordered Pizzas (broken down by category with trend), and Average No. Pizzas per Order
- **Pizzas by Price** Grid table (left)
- **Top 5 Selling Pizzas** Horizontal Bar Chart (right)
- **Number of Orders per Month** Line Chart (bottom)



Conclusion

Save your Dossier. In this lab, you successfully built a multi-dataset analytics dashboard from four separate CSV files. You learned how to wrangle raw data, create multi-form attributes for cleaner display, link datasets through shared keys to avoid Cartesian join errors, and build a variety of visualizations including KPI cards, grids, ranked bar charts, and time-series line charts. These skills form the foundation for working with relational data models in MicroStrategy.