Deep-dive into Tableau Part 2

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1. Data types & File types

2. Shelves & Cards

3. Sorting data

4. Blend, Join and relationship

Data types in Tableau

Icons	Data type
Abc	Text (string) values
📅	Date values
📅🕐	Date & Time values
#	Numerical values
T|F	Boolean values (relational only)
🌐	Geographic values (used with maps)
01:⋮	Cluster Group

You can change the data type for a field either on the **Data Source** page or in the **Data** pane
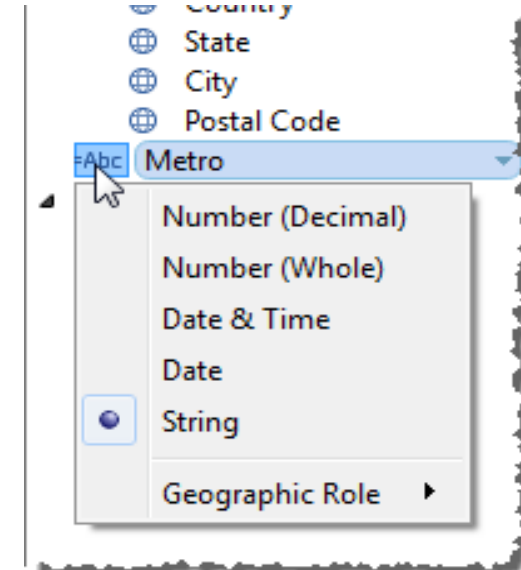
How to change the data type?

1. Data source page

- Click the data type icon for the field.

- Choose a new data type from the drop-down list:

Abc	▼

	Number (decimal)
	Number (whole)
	Date & Time
	Date
●	String
	Boolean
✓	Default
	Geographic Role ▶
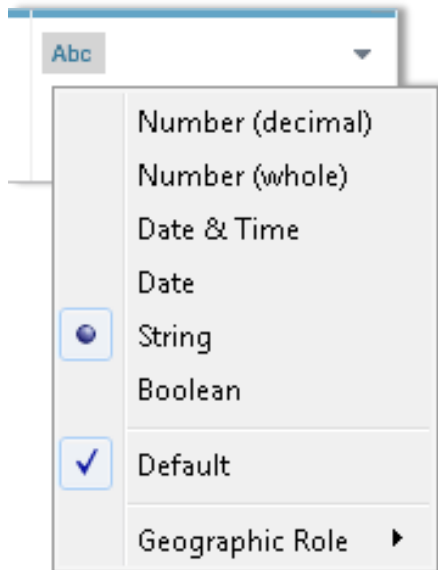
2. Data Pane

- Click the icon to the left of the field name.

- Choose a new data type from the drop-down list:

⊕	Country
⊕	State
⊕	City
⊕	Postal Code
Abc	Metro ▼

	Number (Decimal)
	Number (Whole)
	Date & Time
	Date
●	String
	Geographic Role ▶

What about the mixed values present in particular column?

File types in Tableau

Type	Meaning
Workbook (.twb)	Workbooks hold one or more worksheets, plus zero or more dashboards and stories.
Bookmarks (.tbm)	Bookmarks contain a single worksheet
Packed workbook (.twbx)	A packaged workbook is a single zip file that contains a workbook along with any supporting local file data and background images
Extract (.hyper/.tde)	Extract files are a local copy of a subset or entire data set
Data Source (.tds)	Data source files are shortcuts for quickly connecting to the original data
Packaged Data Source (.tdsx)	A packaged data source is a zip file that contains .tds ,.hyper or .tde, text files, Excel files, Access files.
Preference (.tps)	Tableau color palettes are defined
Map Source (.tms)	Tableau Map Source is a way to share custom maps and easy to import for generating custom map views.

Shelves and Cards

Shelves:

- Columns

- Rows

- Filters

- Pages

Card:

- Marks

Utility:

- Build the structure of your visualization.

- Control the number of marks in the view by including or excluding data.

- Marks with color, size, shape, text, and detail.

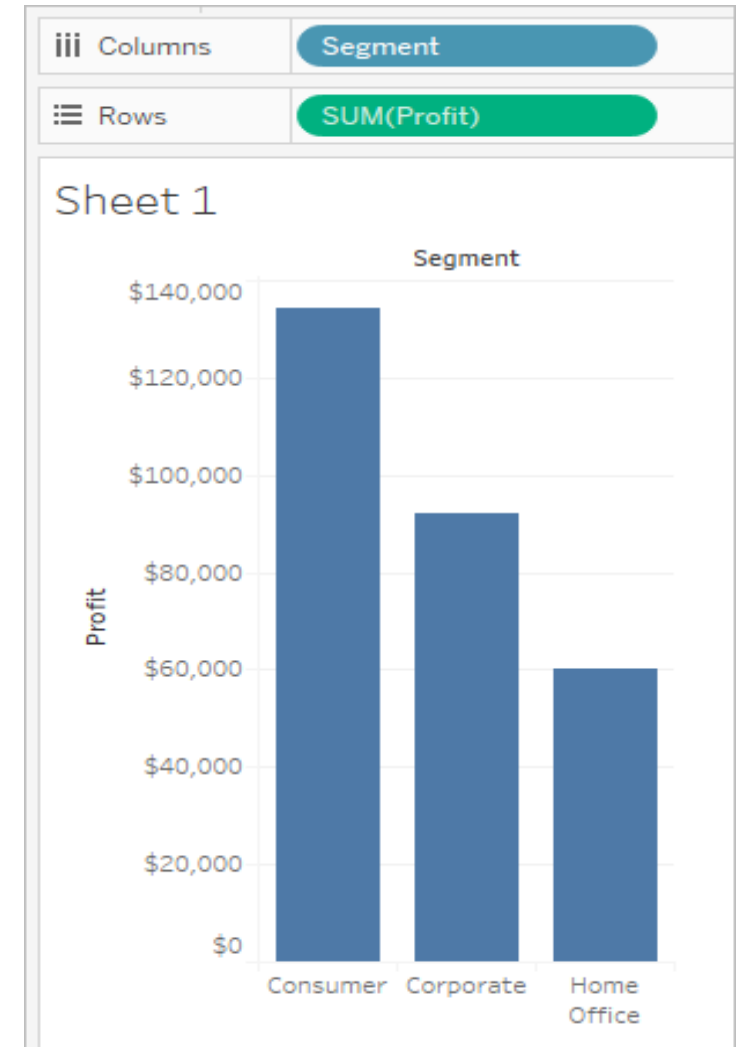- To find the optimal way to look at your data.

Columns and Rows shelves

The **Columns** shelf creates the columns of a table

Rows shelf creates the rows of a table.

You can place any number of fields on these shelves.

- If you place **dimension** in column or row shelf, **headers** are created

- If you place **measure** in column or row shelf, **axes** are created

Marks card

- The Marks card is a key element for visual analysis in Tableau

- As you drag fields to different properties in the Marks card, you add context and detail to the marks in the view

- You use the Marks card to set the mark type with color, size, shape, text, and detail
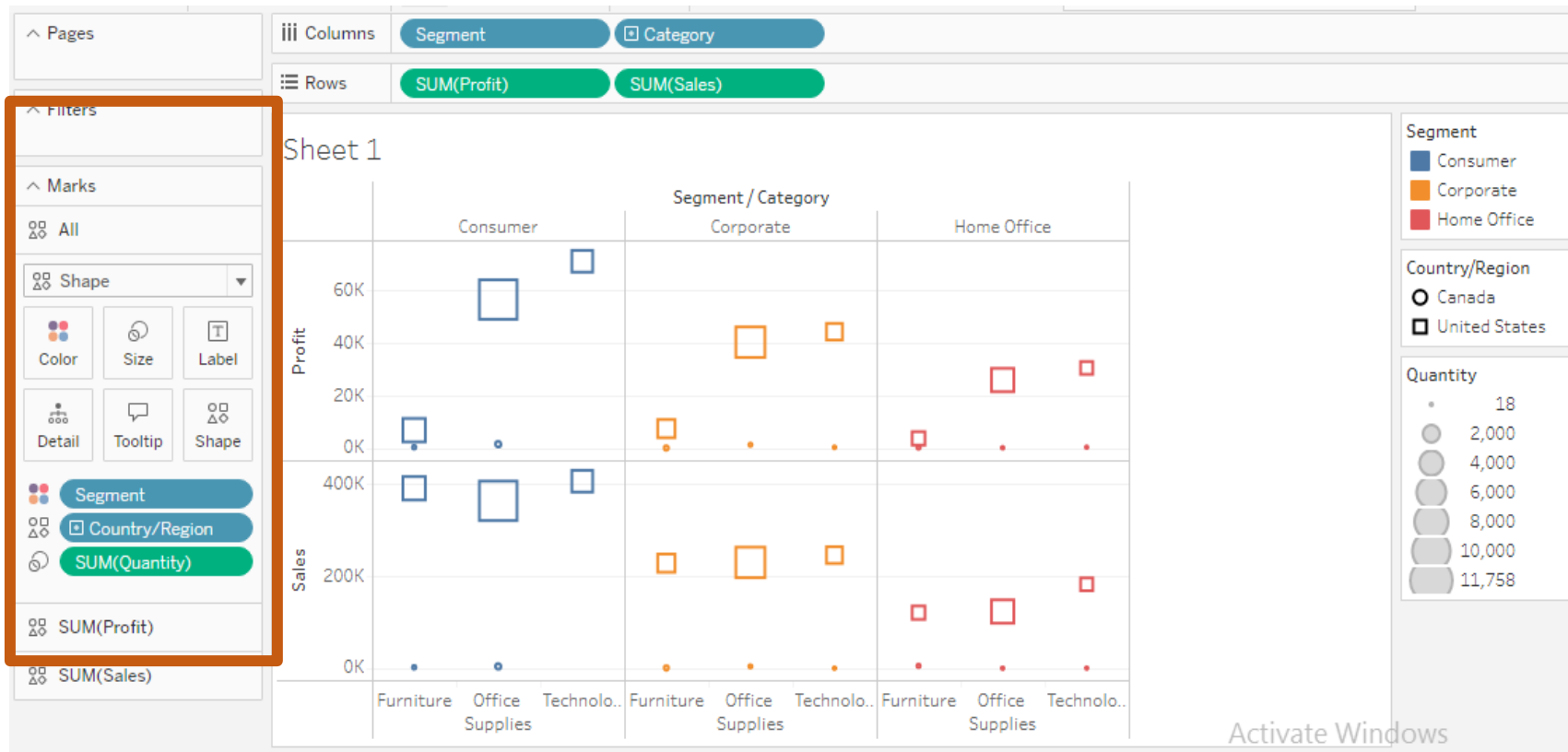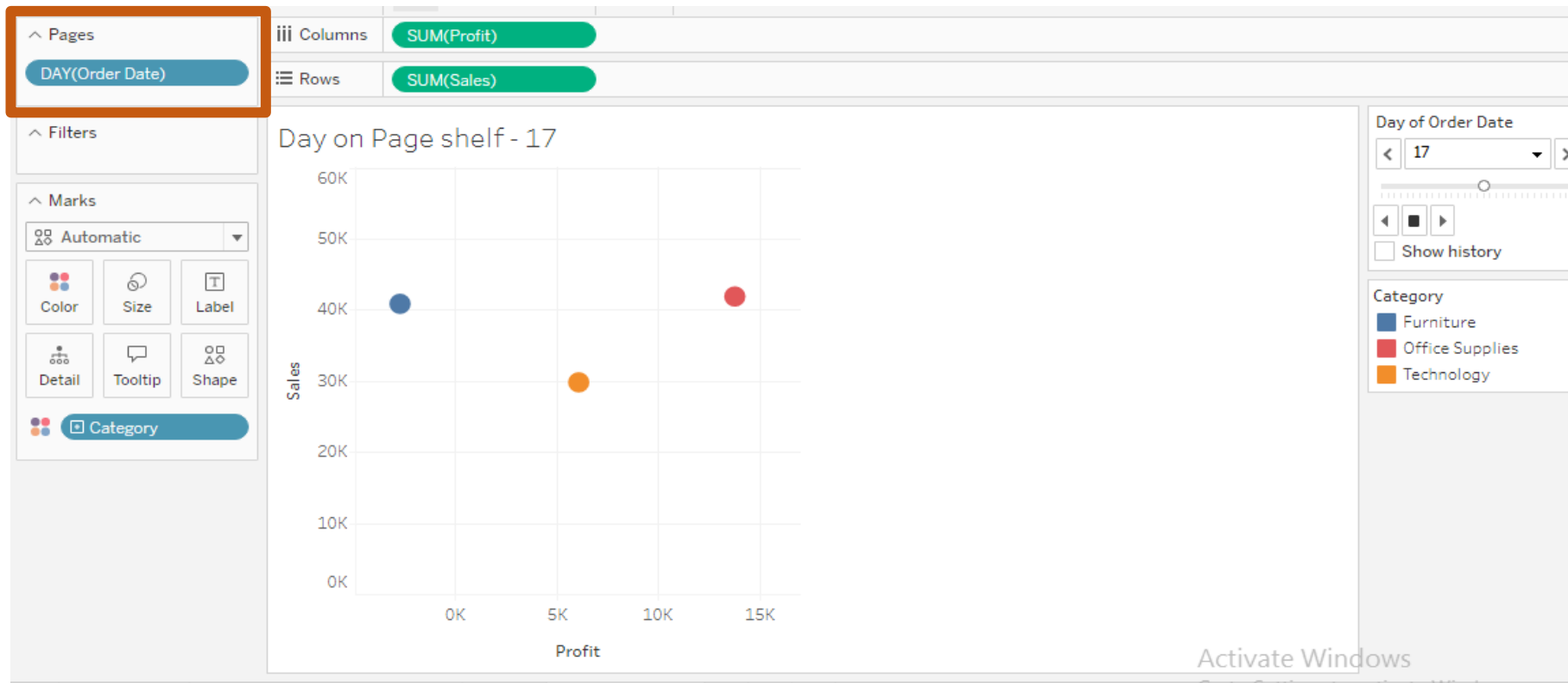
Filters shelf

- The Filters shelf allows you to specify which data to include and exclude

- You can filter data using measures, dimensions, or both at the same time
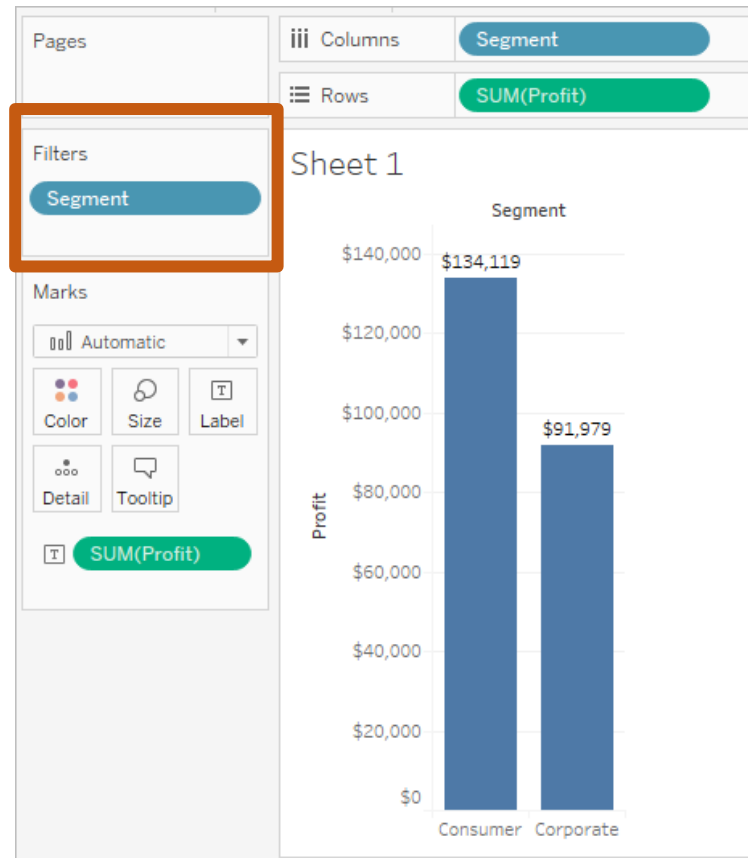
Pages shelf

- The **Pages** shelf ,break a view into a series of pages so you can better analyze how a specific field affects the rest of the data in a view.

- We can try Day(order date) for break the view on workbook.

Let's try ourselves

- Create workbook which displays sales per segment for Furniture and technology only.

- Display Names of customer start with letter A with their Sales.

- State-wise Sales in UK Country.

- Monthly sales trends from Jan to Dec for 2017 and 2018

Sorting data

Data can be sorted in visualization view using:

- Quickly sort from axis, header, or field label

- Sort options while creating viz

- Nested sorts

Quickly sort from an axis, header, or field label

1. **Sort from an axis** :

- Hover over a numerical axis to bring up the sort icon

- Click the icon to sort

2. **Sort from a header** :

- Hover over a header to bring up the sort icon

- Click the icon to sort

3. **Sort from a field label :**

- Hover over a field label to bring up the sort icon

- Click the A-Z icon to sort alphabetically

Sort options while creating Viz

1. **Sort from the toolbar :**

    - Select the dimension you wish to sort

    - Choose the appropriate sort button (ascending or descending) in the toolbar

2. **Sort by drag and drop:**

    - To manually sort, select a header in a Viz or on a legend and drag it to the

      correct location

Nested sorts

When the values to be sorted occur in multiple panes, there are two ways to sort:

1. **Nested :**

   - A nested sort considers each pane independently and sorts the rows per pane

   - Don't convey the aggregated information

   - Sorting from an axis gives a nested sort by default.

2. **Non-nested (or comparative) :**

   - A non-nested sort considers the value across panes and will have the same order of values per pane.

   - Consistently convey how the aggregated values compare overall.

   - Sorting from a field label gives a non-nested sort by default.

Blend ,Join and Relationship

- These are used to combined different related tables horizontally having some common filed

- For understanding this concepts , consider tables

  1. customer.xlsx

  2. customer orders.xlsx

  3. Product.xlsx

Customer.xlsx

Customer ID	Name	Last Name	Salary
Customer01	John	Clad	50000
Customer02	Mario	Clue	50000
Customer03	Julee	Oshe	50000
Customer04	Browzer	Armit	50000
Customer05	Princess	Peach	50000

Products.xlsx

Product ID	Category	Subcategory	Product Name
PD202011	Furniture	Bookcase	Story Bookcase
PD202012	Furniture	Chair	Rotating Chair
PD202013	Office supplies	Labels	Name Labels
PD202014	Furniture	Tables	laptop Tables
PD202015	Office supplies	Storage	File Storage
PD202016	Furniture	Furnishing	Kitchen Furnishing
PD202017	Office supplies	Art	Fine Art
PD202018	Technology	Phone	Smart Phone
PD202019	Office supplies	Binders	Binders
PD202020	Office supplies	Appliances	Home Appliances

Customer order.xlsx

| Customer ID	Product ID	Sales	Order ID
Customer01	PD202011	261.33	OI101134
Customer02	PD202012	329.39	OI101135
Customer02	PD202013	400	OI101136
Customer03	PD202014	100.33	OI101137
Customer03	PD202015	800.33	OI101138
Customer03	PD202016	261.33	OI101139
Customer04	PD202017	300	OI101140
Customer04	PD202018	261.33	OI101141
Customer04	PD202019	211	OI101142
Customer04	PD202020	261.5	OI101143

Blend :

- When two or more sheets have different level of details
- Different queries for different data sources are linked by common filed
- By default left outer join
- Work on **Primary** and **Secondary** data source

DS1

DS2

Query1

Query2
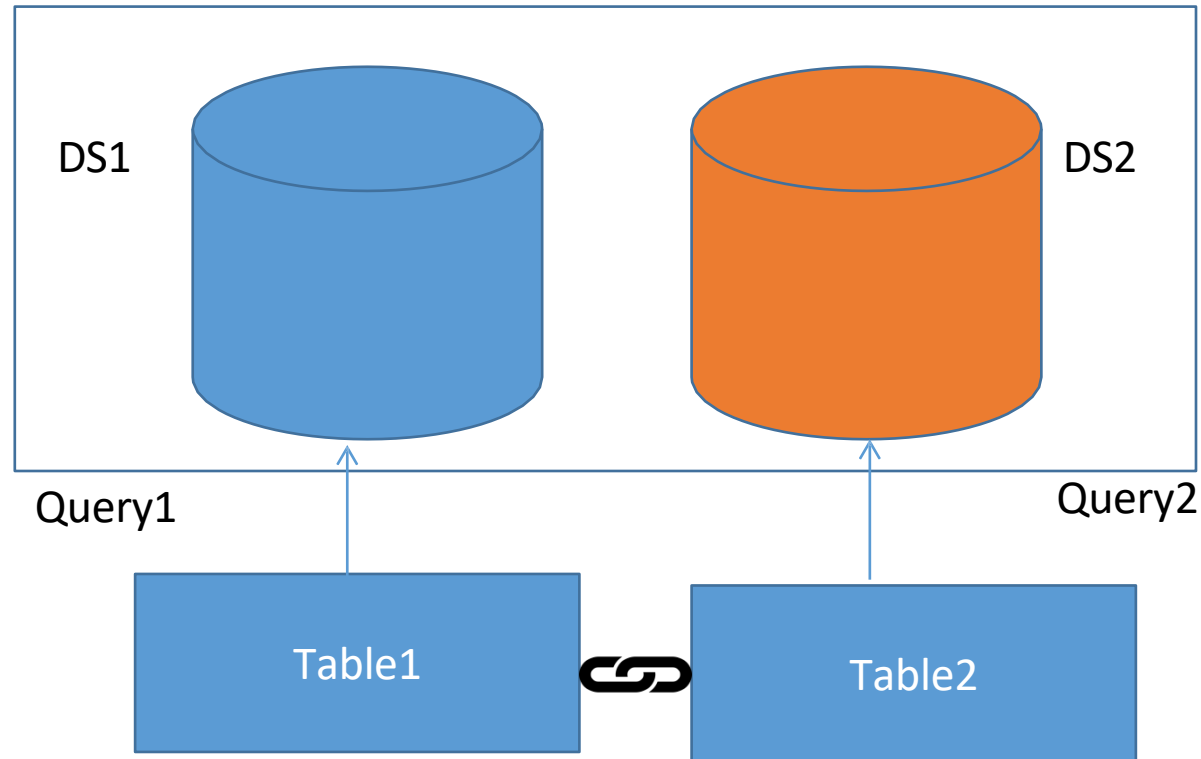
Table1

Table2

More than one row for blending is not supported

Data Model(version 2020 onwards)

- Data model as a diagram that tells Tableau how it should query data in the connected database tables.
- Two Layers:
  1. Logical Layer
  2. Physical Layer
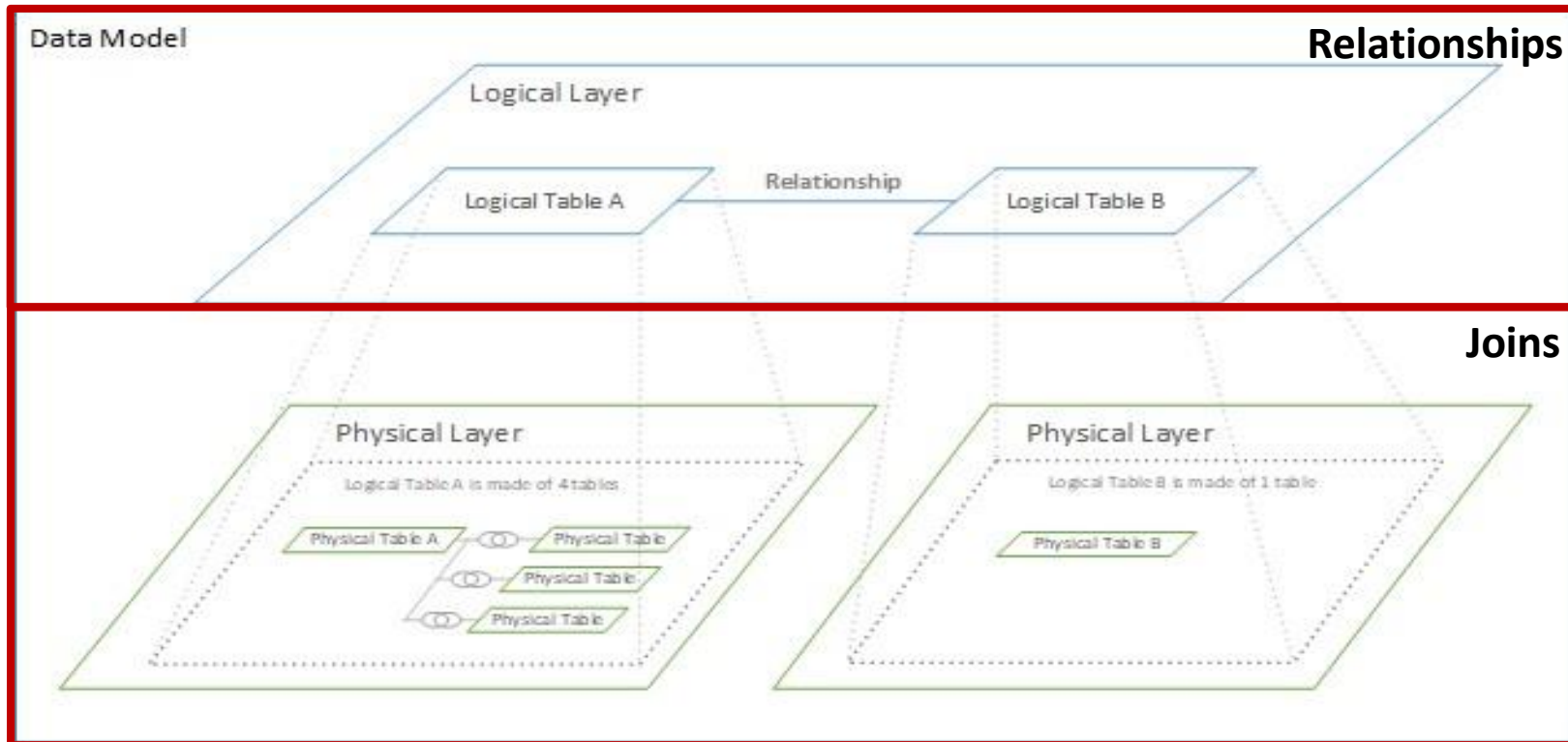
Difference between Logical layer and Physical Layer

LOGICAL LAYER	PHYSICAL LAYER
Relationships canvas in the Data Source page	Join/Union canvas in the Data Source page
Tables that you drag here are called logical tables	Tables that you drag here are called physical tables
Logical tables can be related to other logical tables	Physical tables can be joined or unioned to other physical tables
Logical tables are like containers for physical tables	Double-click a logical table to see its physical tables
Level of detail is at the row level of the logical table	Level of detail is at the row level of merged physical tables
Logical tables remain distinct (normalized), not merged in the data source	Physical tables are merged into a single, flat table that defines the logical table

Joins

- Used to combine data horizontally

- Combines the tables in same data source
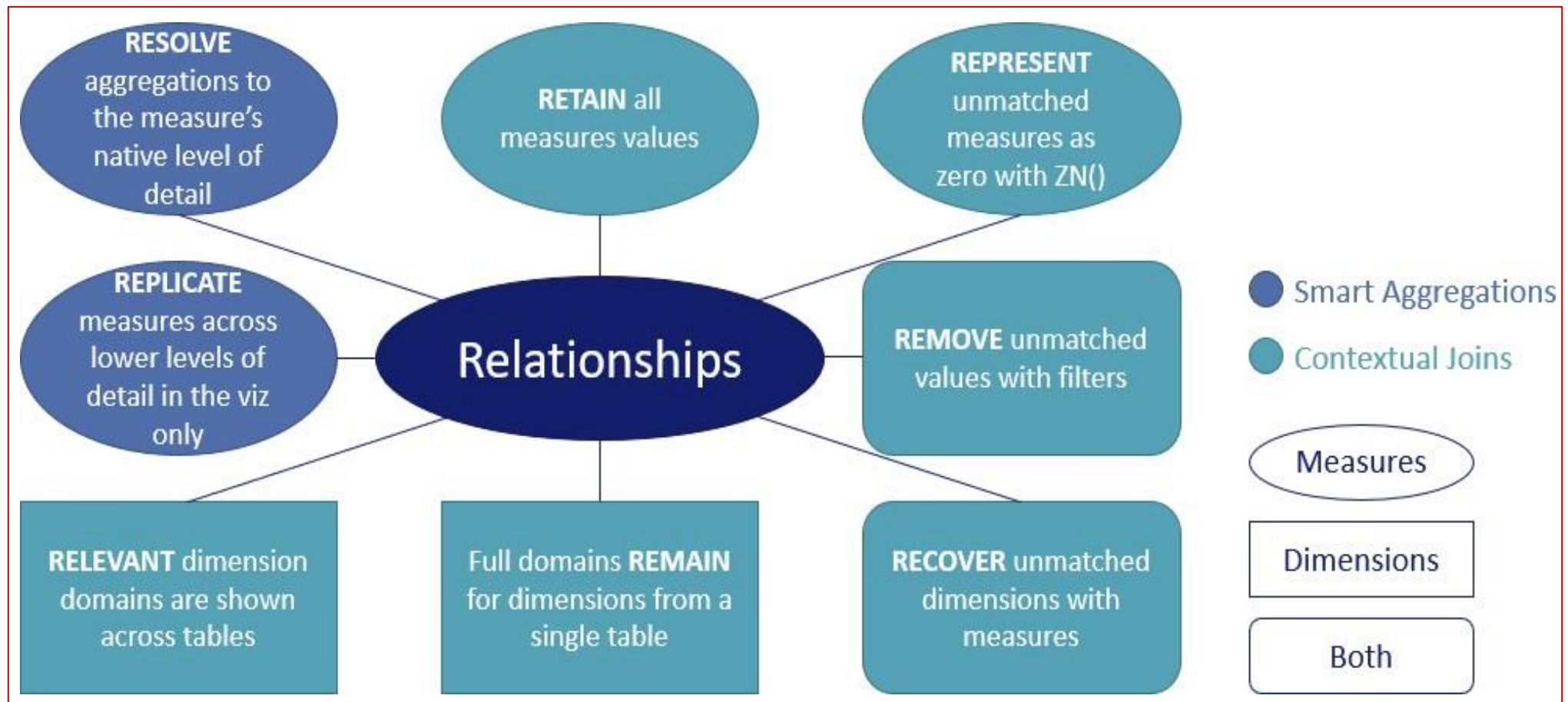
- Represented by Venn diagram.

How Join works?
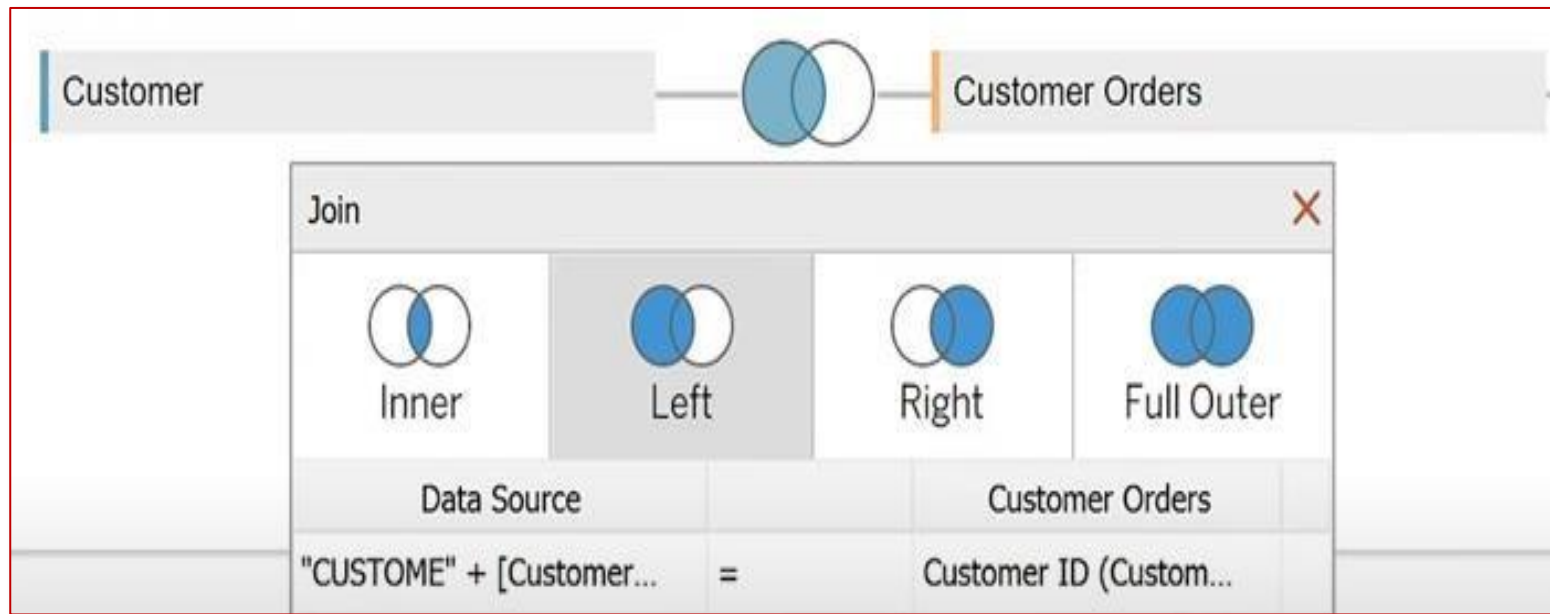
Note: Not all data sources support all types of Join

Relationships

- Flexible way to combine data for multi-table analysis in Tableau

- Easily handle unmatched data for different tables

- Represented by NOODLE

	BLEND	JOIN	RELATIONSHIP
Visual cues		Inner / Left / Right / Full Outer	———————
No. of data Sources	At least 2	1	1
No. of connections	At least 1 per data source	Can be multiple	Can be multiple
Structure	Retain Original table	New Combined form	Retain Original table
How tables are combined	Separate queries ;Linking field	Physical Join	Logical; Context specific
How numbers are aggregated	Based on primary	Based on join level Granularity	Smart; context specific

Thank you