AGGREGATIONS

- Process of converting a set of values into a single value.
- Done based on Measures & Dimensions

- Aggregating Measures can be added to relational data sources
- Aggregating Dimensions can be done by Minimum, Maximum, Count or Count(Distinct)

Let's use the Sample Superstore Source

- Drag "Sales" to Rows, Columns, or Text (inside Marks box)
- Default is SUM
- Right-click on SUM(Sales)
- Choose Measure(SUM) & select desired aggregation from list (avg)

- You can change the aggregation of any measure by clicking on a measure from the left-hand side, select Default Properties and Aggregation & select one

PIVOT

- Select columns that need to be manipulated & formatting them into a typical dataset
- Need to REMEMBER to pivot from Columns to Rows (tall v. wide)

- Data not formatted exactly in preview pane:
  - Select all columns in the file
  - Select pivot from pop-up menu

DATA INTERPRETER

- Automatically cleans and prepares data
- Available under Connections Pane whenever a unique format is detected.

SPLIT

- String function used to split a column into multiple ones
- Used to make data analysis easier
- Offers both Automatic Split and Custom Split
  - Automatic: done by detecting a common separator
  - Custom: max of 10 new fields based on a separator in original field
  - Can split columns by clicking on column in preview pane and selecting
- Example: Moving “City, State: Denver, CO” to two different cells

DATA TYPES INSIDE TABLEAU

- Text Values
- Date Values
- Date and time Values
- Numerical Values
- Boolean Values
- Geographic Values

DATA ROLES

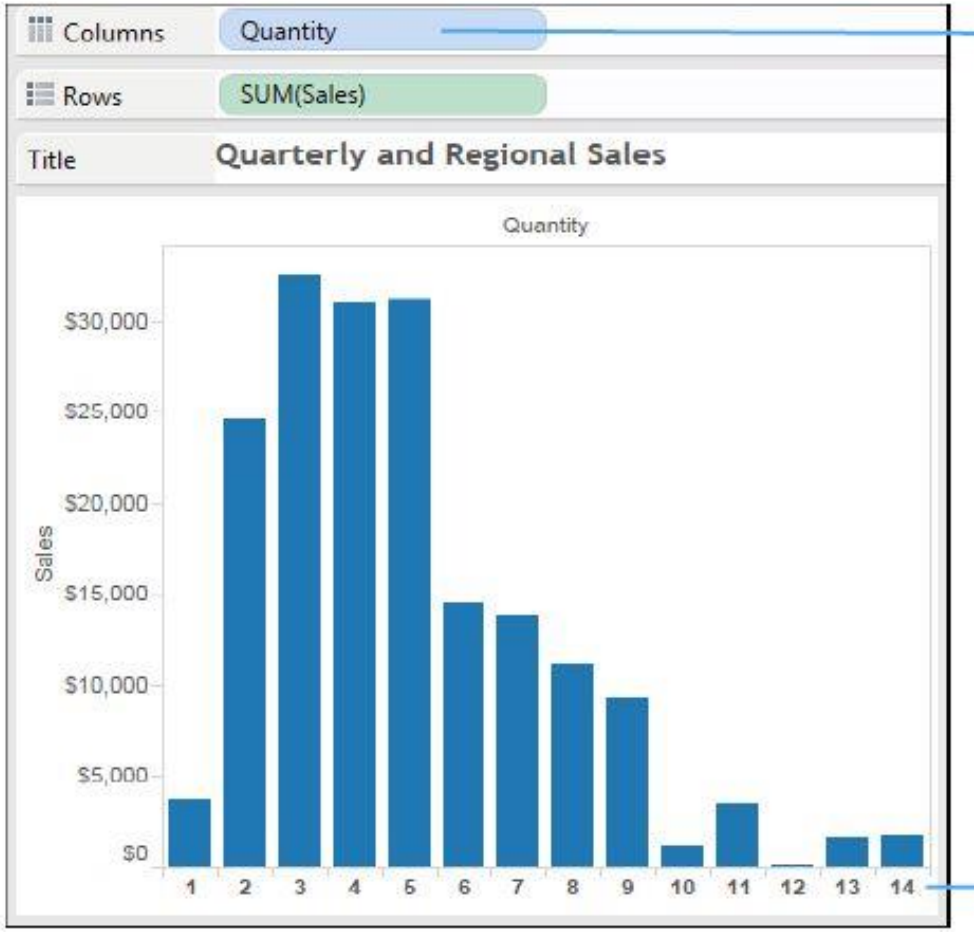
Dimensions v. Measures

- Data is both textual & numerical, automatically segregated into either role
- Dimensions: produce a header when added to row/column, categorical
- Measures: produce an axes when added to row/column, numeric

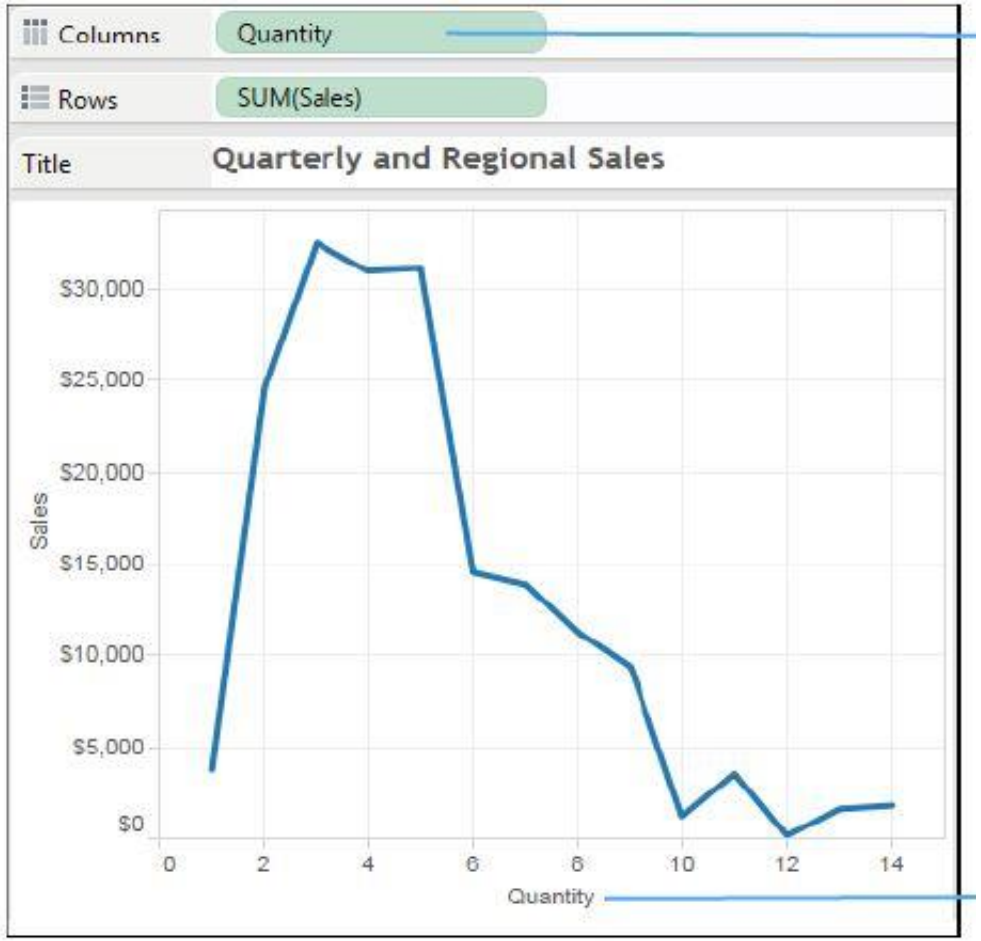
Discrete v. Continuous

- Every field is categorized as either discrete or continuous

Discrete: every quantity as a header at the bottom



Continuous: quantity values are shown in a continuous axis



WORKING W/ METADATA

- Rename: sheet, column names
- Hide: columns you don’t want to use
- Unhide
- Sort

WORKING WITH DEFAULT FIELDS

Adding a comment to a field

- Right-click on field
- Select Default Properties
- Select Comment

- You can view the comment when you put your cursor over the field

Changing a decimal number to a whole number

- Right-click on field
- Select Default Properties
- Select Number Format
- Select Number (Customer)
- Set Decimal Place to Zero

WORKING WITH DEFAULT FIELDS

Change the Fiscal Year!

- Right click on field
- Select Default Properties
- Select Fiscal Year Start
- Select Month needed

Changing a decimal number to a whole number

- Right-click on field
- Select Default Properties
- Select Number Format
- Select Number (Customer)
- Set Decimal Place to Zero

YOU CAN CREATE ALIASES!

- Right-click on any column and select Aliases
- Update the alias name and click okay
    - Second Class would be where you would rename

YOU CAN FILTER YOUR DATA

DIMENSION FILTER

- General: selects one or multiple members from the domain
- Wildcard: Matches values based on the presence of a string, the same starting and ending characters, or the same set of characters.
- Condition: Matches values based on field or formula
- Top: Highlights top values by field or formula

PRACTICE

- Connect the SuperStore dataset
- Drag “Orders” over to Canvas & go to Worksheet
- Put SUM(Sales) in Columns
- Put Sub-Category in Rows
- Drag Sales to Label
- Click on Entire View
- Click on the sort option
- Drag Sub-Category to Filters area
- Create filter
- You can remove filter by dragging Sub-Category outside of the filters area

MEASURE FILTER

- Range of values: filter to identify sales representatives within a range of sales totals
- At least: filter to identify sales reps with sales ABOVE a certain level
- At most: filter to identify sales reps with sales BELOW a certain level
- Special: filter to identify all values, null values and non-null values

PRACTICE

- Connect the SuperStore dataset
- Drag "Orders" over to Canvas & go to Worksheet
- Put Sub-Category in Rows
- Put Sales in Text
- Resize for visibility
- Sort in descending order

- Drag Sales to filters
- Click next
- Set your filter

- You can remove filter by dragging Sales outside of the filters area

DATE FILTER

- Relative Dates: can specify range of dates that is updated based on the date and time.
- Range of Dates: can specify a range of dates to define a fixed range of dates to filter.
- Discrete Dates: can specify a discrete date value in the dialog box
- Individual Dates: can select individual dates to filter specific dates from the view
- Additional date filter Options: can select null dates, non-null dates or all dates by specifying a start/end date.

PRACTICE

- Connect Sample Superstore
- Drag orders to canvas
- Add Order Date to Rows
- Add Sales to Text
- Expand Order Date to Quarter and Month
- Restructure it by adding Year to Column
- Drag Order Date to Filters
- Click on Range of Dates
- Click on Individual Dates

VISUAL FILTER

Filters that are applied straight from Tables, Maps and Charts

PRACTICE

- Connect Sample Superstore
- Drag orders to canvas
- Sub-Category > Rows
- Sales > Columns & Text
- Sort in descending order
- Select Sub-Category & apply inclusion filter.

CONTEXT FILTER

- The ONLY filter that is independent & used for:
  - Improving the performance of Tableau reports
  - Creating a dependent numerical filter
- Any other filter defined alongside this one is a dependent one:
  - It's dependent on the output of the context filter

PRACTICE

- Connect Sample Superstore
- Drag Orders to canvas
- Drag Sub-Category to Rows
- Drag Sales to Columns
- Click on Entire View and sort in descending order
- Add Sales to Label
- Drag Category to Filters
  - Click on Furniture
- Drag Sub-Category to Filters
  - Apply the filter

DATA SOURCE FILTER

- Applied to data sources that are connected to Tableau to make the worksheet work more efficiently.
- The changes are done across ALL worksheets
- Considered an efficient way to limit scope of data for performance/security purposes.

- Extract filters are the same as data source filters, just applied to the extract connection.
- Worksheet filters

Field Types

- Dimensions (Region or product name)
- Measures (Sales or profit)
- Dates (Year or month)

PRACTICE

- Connect Sample Superstore
- Drag orders to canvas
- Add Regions to Rows
- Add Sales to Text
- Drag Region to Color
- Sub-Category to Rows
- Sales to Text & Columns

- Click on Data Source & Add
- Select add in the box
- Click on City & OK & OK again

- Can View entire worksheet filter in the top right corner.

INTERACTIVE FILTER

- Allows users to interact with the data via Drop-down, List, Radio Button or Checkbox
- Can be applied to: numbers, dates and strong

PRACTICE

- Connect Sample Superstore
- Drag orders to canvas
- Drag Sub-Category to Rows
- Sales to Columns & Label
- Sort in Descending order
- Select Sub-Category and click on show filter

LET'S DO SOME SORTING

- Based on data course order, field, ABC order or manual
- On a measure, can be applied through a dimensional sort

GROUPS

- Aggregate the data of dimension members
- Example: top 5 sales reps by total salary are in a single row
- Once grouped, can be used inside of any filters

SETS

- Custom fields that define a subset of data based on some conditions
- Example: customers with sales over a certain level
- CONSTANT sets: do not change after they are created
- COMPUTED sets: types of sets that change with the change in data
- COMBINED sets: two sets combined to compare different members
- BUILDING sets: created through manual selection, condition, ranking

BINS

- Equal-sized containers that store data values that correspond to or fit within the bin size.
- Can use any discrete field to create them
- Right click on field, select Create and then Bins
  - Create new field name & designate size
  - Press OK

HIERARCHIES

- An arrangement where entities are present at various levels
- Created by adding one dimension as a level under the principal one
- Example: Category & Sub-Category in Rows and SUM(Sales) in Text
- Can be used as dimensions
    - Right-click, click Hierarchy > Create Hierarchy > Add Hierarchy > Add dimensions

CREATING CHARTS

- Easier to understand then tables with numbers
- Click on “Show Me” button on upper right corner

Working with Sample-Superstore dataset

Orders sheet on Canvas

TEXT TABLE & CROSS TABLE

- Drag Sub-Category to Rows
- Drag Region to Columns
- Drag Sales to Text under Marks

HIGHLIGHT TABLES

- Region > Columns
- Sub-Category > Rows
- SUM(Sales) > Text
- Change drop-down to Square
- Sales > Colors in Marks Card
- Edit Colors > Select color palette

HEAT MAPS

- 2-D representation of data that uses colors to convey info
- As the density of records per mark increases, the color intensity increases.

- **Sub-Category > Rows & Region > Columns**
- **Marks > Square**
- **SUM(Sales) on Color in Marks Card and edit it**

STACKED BAR CHART

- Used to highlight one measure against several other values
- Each category is divided into subcategories for detailed analysis
- Can split bar into categories

- **Sub-category > Columns & SUM(Sales) > Rows**
- **Region > Color under Marks Card**

LINE CHART

- Shows trend of data over a period of time
- Normally used when there's a date data type

- **Order Date > Columns**
- **Sales > Rows (Marks type should change automatically to line)**
- **Date can be discrete or continuous (Right-click on Order Date)**