Intermediate Tableau Public Workshop

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Intermediate Tableau Public Workshop Handout

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Note: This handout assembles some materials from Tableau's free training videos

https://www.tableau.com/learn/training, no claims on its originality for that part.

Outline
1. Workshop objectives
2. Intermediate Tableau
    - I. Data Preparation with Excel Files
    - II. Merge data from different data sheets/datasets
    - III. Parameters
    - IV. Overview of calculations
    - V. Quick table calculations
    - VI. Regular calculations
    - VII. Adding Analytics objects to the view
    - VIII. Adding URL action to dashboard

Objectives

Participants will be able to
1) use Data Interpreter to clean data
2) do Join and Union, the two basic ways to merge data
3) create and use parameters and calculated fields
4) do basic quick table calculations
5) make regular calculations on date, string, number, and Boolean data type
6) add analytics objects to the view

I.   Data Preparation with Excel Files

Data can be organized in various ways. To take advantage of Tableau Desktop, Tableau recommends that you connect to data that has not been formatted. That is, data that has not already been organized in a crosstab, aggregated, or contains other extraneous information. If your data is like this, in most cases, you can connect directly to it from Desktop and use Data Interpreter or other cleaning options to work around the problematic structure of the data. In other cases, you might need to edit the Excel data directly before connecting to it from Desktop. For more details, go to Tips for Working with Your Data Within Tableau.

When data is formatted as in crosstab format, the table is column oriented. In a column oriented table, the variables are stored as column headers. However, Tableau Desktop is optimized for row oriented data. In a row-oriented table, the variables are stored in the row values.

Ideally, the Excel file should be prepared as the rules specified below.

- **a. The first row of data only includes column headers.**
- b. The sheet doesn't contain any comments/notes and column/row totals.
- c. Each column of data contains the same type of data throughout the column and each row of data is one data item.
- d. The sheet/table is row oriented. That means variables are stored in the row values. In contrast, in column orientated sheet/table, the variables are stored as column headers. See [Tips for Working with Data](#) for more details.

Tableau data source interface

Activity 1.1 Use Data Interpreter to clean data, use Pivot function to convert the data to a row oriented table, use Split function to split a field.

1) Open the Excel file *data_prep_-_flights.xlsx* with Excel.
   - a. The *Resolved Incidents* sheet has extra information other than raw data.
   - b. The *Resolved Incidents* sheet shows the number of resolved incidents per Employee per month. The table is wider. This is a typical column orientated table, which Tableau doesn't like.

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c. The *Ideal* sheet shows a "Date" column and each row contains the number of resolved incidents for each unique combination of date and employee. This data is taller, with more rows, rather than wider, with more columns. This is a typical row orientated table, which is the format Tableau prefers for optimal analysis.

2) In Tableau, connect to the Excel file data_prep_-_flights.xlsx, drag out the *Resolved Incidents* sheet to the canvas area.
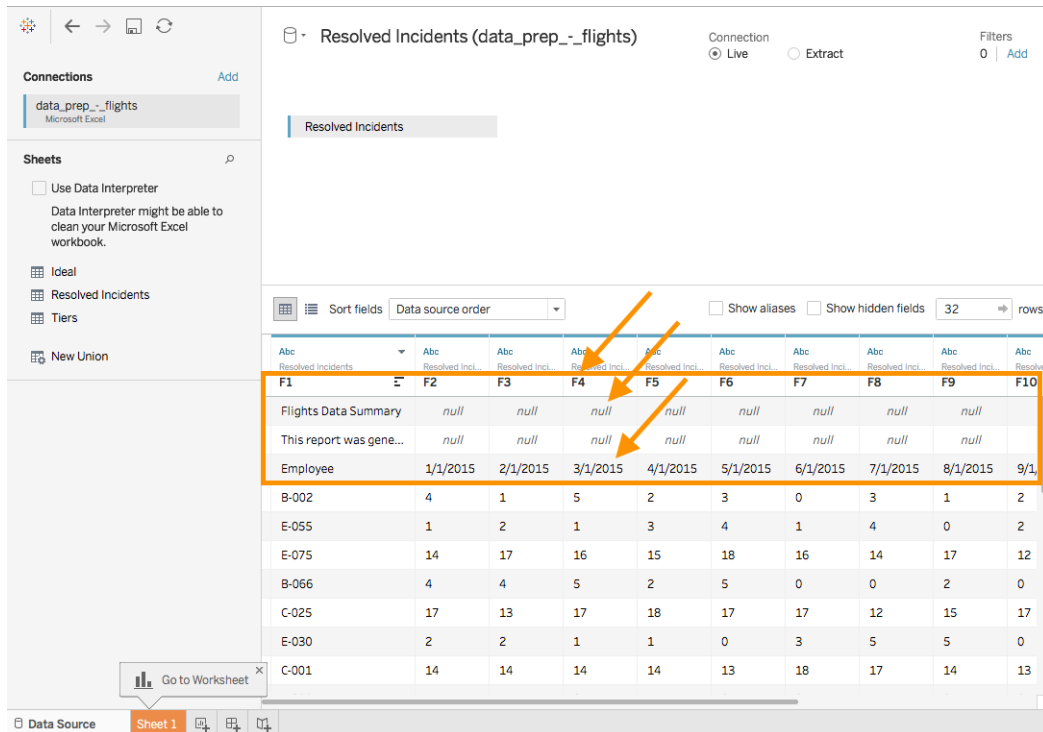
3) We see wrong field names, null values, column headers in the original Excel file mis-interpreted as values in the data.

4) In the side panel, click to turn on the Data Interpreter. Instantly, the data sheet has been cleaned up. All the original column headers have been correctly

identified.

5) Click on *Review the results* link on the left pane. This will open an Excel file describing what Tableau has done to clean the data. Click on *Resolved Incident* sheet, we see which fields are being used as headers, in red, and which are considered data, in green.

	Employee	1/1/15	2/1/15	3/1/15	4/1/15	5/1/15	6/1/15	7/1/15	8/1/15	9/1/15	10/1/15	11/1/15	12/1/15	Header
1	Flights Data Summary													
2	This report was generated on 1-1-16													
3														
4	Employee	1/1/15	2/1/15	3/1/15	4/1/15	5/1/15	6/1/15	7/1/15	8/1/15	9/1/15	10/1/15	11/1/15	12/1/15	Header
5	B-002	4	1	5	2	3	0	3	1	2	0	2	5	Data
6	E-055	1	2	1	3	4	1	4	0	2	1	4	0	Data
7	E-075	14	17	16	15	18	16	14	17	12	13	14	12	Data
8	B-066	4	4	5	2	5	0	0	2	0	1	0	3	Data
9	C-025	17	13	17	18	17	17	12	15	17	17	14	15	Data
10	E-030	2	2	1	1	0	3	5	5	0	2	4	1	Data
11	C-001	14	14	14	14	13	18	17	14	13	18	15	14	Data
12	E-038	4	1	0	4	0	2	5	0	2	2	2	2	Data
13	C-054	2	5	4	4	2	3	0	5	5	5	3	5	Data
14	A-081	3	2	4	5	2	2	2	4	1	4	2	0	Data
15	B-031	14	14	14	14	15	13	15	14	12	16	12	18	Data
16	D-019	2	3	0	0	4	4	1	2	5	0	5	5	Data
17	E-096	2	0	4	4	5	3	3	0	5	4	2	0	Data
18	D-026	0	2	0	2	5	3	1	0	0	2	5	4	Data
19	E-022	3	3	4	3	4	2	0	3	2	3	3	1	Data
20	C-015	1	5	3	5	2	1	3	3	1	1	5	2	Data
21	B-062	14	12	16	16	16	18	12	12	18	16	12	17	Data
22	E-029	5	1	2	4	0	3	5	4	5	3	4	5	Data
23	A-037	2	2	0	2	3	4	2	0	2	1	2	2	Data
24	E-087	14	17	13	17	18	13	13	12	13	16	13	16	Data
25	C-040	5	0	4	5	3	5	2	1	1	4	2	1	Data
26	A-077	3	5	3	5	2	3	5	3	4	5	4	4	Data
27	C-041	18	18	15	15	15	17	17	12	18	17	16	16	Data
28	D-005	4	0	5	3	2	3	5	1	0	2	3	3	Data
29	E-046	12	13	14	17	16	14	14	18	13	16	15	17	Data
30	C-053	2	5	5	0	2	1	0	4	5	1	1	3	Data
31														
32														
33	This report is generated once a month													
34	For questions, contact flights@support.com													
35	Employee field consists of Location-Employee ID													
36														

6) Back to Tableau, we want to change the table from column orientated to row orientated.

7) Click on the first column header 1/1/2015 to select the first column, scroll to the right, shift-click the last column header 12/1/2015 to select all the dates column, open the menu, select Pivot.
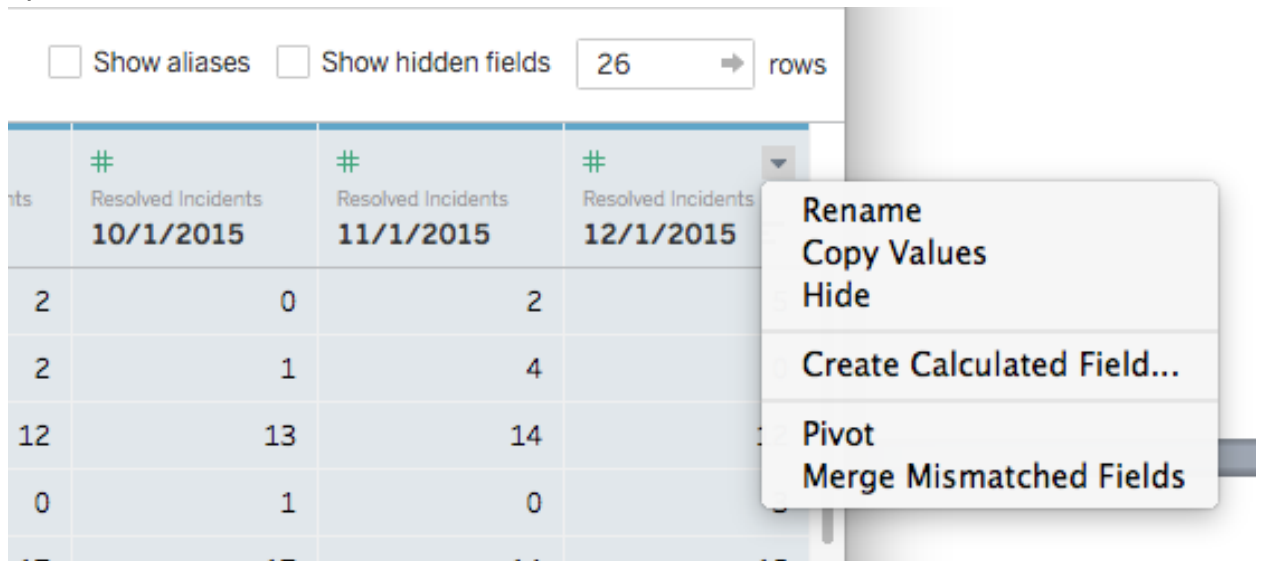
8) This pivot feature essentially merges the information from the original columns and rows into two new columns – Pivot field names, and Pivot field values. We can see that *Pivot field names* is actually our Date, double click to rename to Date, and *Pivot field values* can be renamed *Resolved Incidents.*
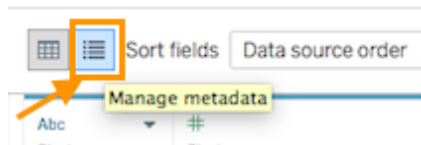
9) Click on Metadata Grid icon   to view the original/remote field names.

10) Click on the menu on the upper right corner of *Employee* field, choose *Split*. The field Employee is automatically split into two fields. Double click to rename them

to *Location* and *EmployeeID*.

11) Click on Sheet 1, drag Incident Resolved to Columns shelf, and EmployeeID to Rows shelf, sort it in Decending order.
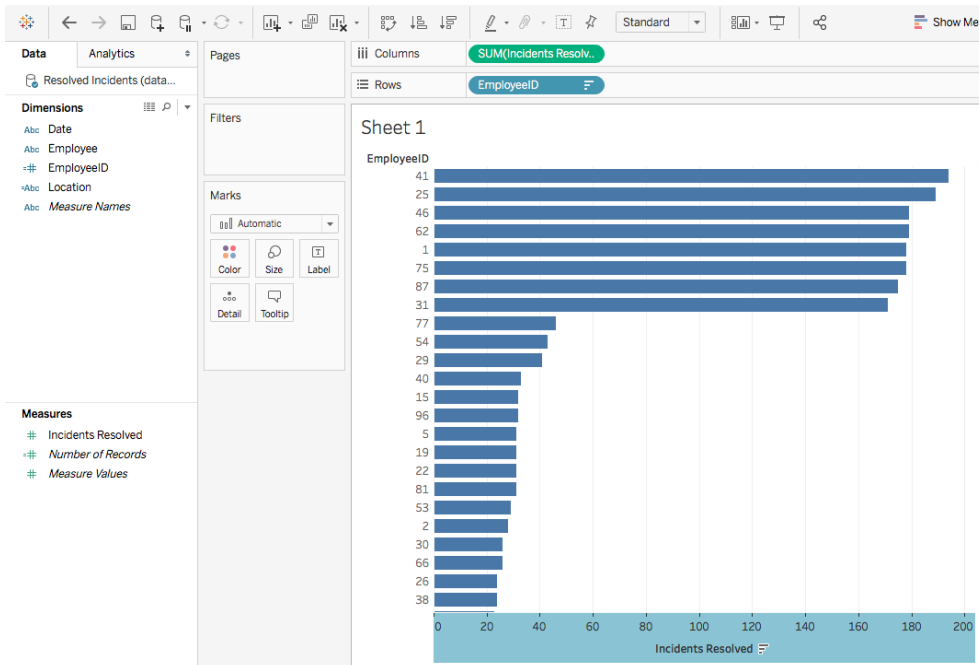
II.　Merge data from different data sheets/datasets

It's not practical to store all data in a single sheet/table/dataset. There are two basic ways to merge datasets. They are Join and Union.

Join will combine columns of two datasets. It merges different columns for matching rows, aligning them next to each other. Tableau tries to automatically decides which field to use to match up the rows. To join, the tables may come from different connections.

- Inner Joins – preserves only the rows that have the same key filed.
- Left Joins – brings in all the information for the rows from the table on the left and any information from table on the right for rows with the same key field.
- Right Joins - brings in all the information for the rows from the table on the right and any information from table on the left for rows with the same key field.
- Outer Joins – brings in all names listed in all tables, and fills in nulls wherever there isn't information for a given column for that row.

Union will merge rows of two or more datasets. It merges different rows for matching columns, stacking more datasets on top of each other. This is usually used when more data comes in during the project. Tableau tries to match up columns with identical names automatically. To union data, the tables must come from the same connection.

For more, go to Join Your Data.

Activity 2.1 Join Data from two different sources

1) We have two different file-based data sources – one Excel, one CSV. The data is structured such that the sales data has a product ID but no other information about the product sold. The product data in the CSV file is a simple table of product ID, category, sub-category, and the product name. If we perform a left join Product data to the Sales data on Product ID, we'll add that product information to each relevant sales transaction.
2) In Tableau, connect to *Sales 2016.xlsx* Excel file.
3) Click the Add button by the Connections area, Choose Text File, and open *Products 2016.csv* file.
4) The sheet has already been added to the canvas. Name the data source more descriptively *Sales and Products 2016*.

5) Click on the join icon, and we'll select a left join. We can see that our data has been joined at the row level on Product ID.
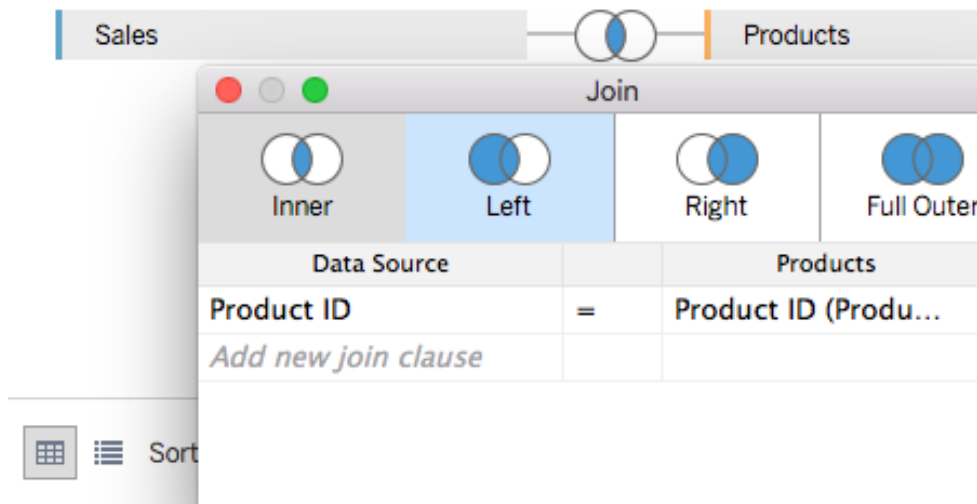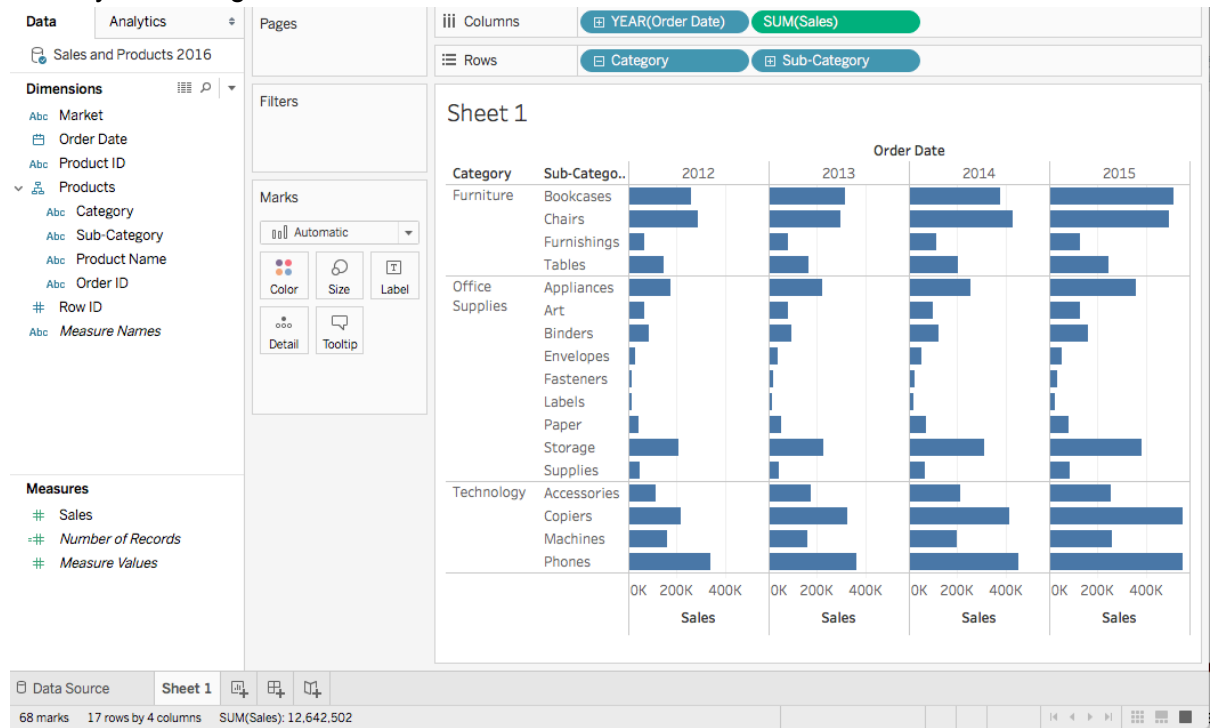

6) In the grid, we can see the product information (in yellow) has been added to each row from the Sales data (in blue).
7) Test out our newly joined single data source

a. We see we have a single data source in the data pane, but our fields are broken out by table.
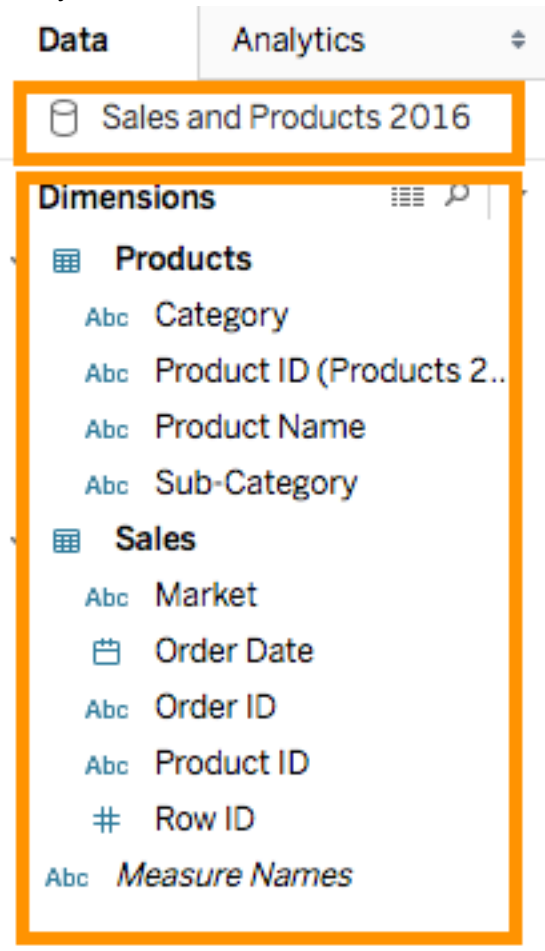
b. Right click inside the data pane, choose *Group by Folder* instead of Group by Data Source Table.
c. Make a hierarchy for Products.
   i. Drag Sub-Category on top of Category, name it Products.
   ii. Drag Product Name under Sub-Category
   iii. Drag Product ID under Product Name.
d. Right click over *Product ID(Products 2016)*, Hide it. Because it's just there for the join clause.
e. Drag Category to rows, and expand it out. Drag Sales to Columns. Drag Order Date to Columns and put it in front of Sales. An integrated data source functions

like any other single-source data source.

The sheet *DMC-charges-2017* has some notes in the beginning of the sheet. We need to remove that after loading. In addition, we need to add the rows of data in the sheet *DMC-charges-2017* to the sheet *DMC-charges-2014-2016*.

1) Open Tableau and connect to *DMC-charges-data-sheet-2014-2016-sheet-2017.xlsx.*
2) The Excel file contains 2 sheets: DMC-charges-2014-2016, DMC-charges-2017.
3) Drag the sheet *DMC-charges-2017* to the canvas area. Because the original Excel sheet contains some introductory text in the beginning of the sheet, the field names and the

first row of data are not loaded properly.
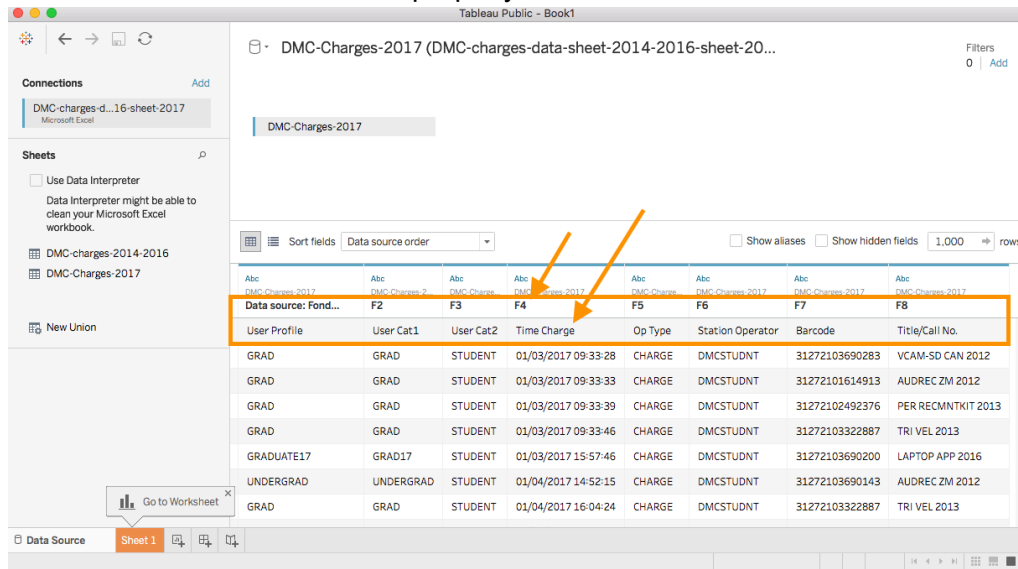
4) You could do some data cleanup after the data is loaded. Check *Use Data Interpreter* on the left pane.

5) You will get a clean view like below. The notes have been removed and the column headers have been correctly interpreted as field names.
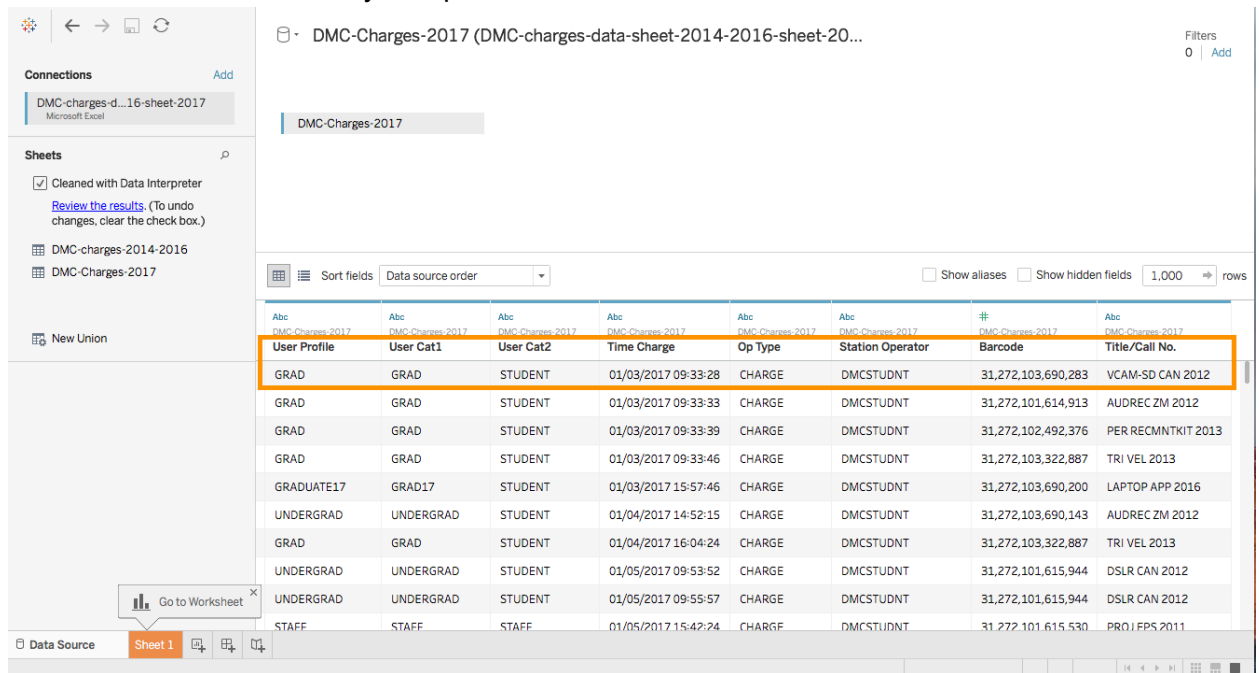

6) Tableau loads the entire data as is. It uses Data Interpreter to clean up the data after loading.

7) Change the field to the correct data type.

   a. Change **Time Charge** from *String Abc* to *Date & Time*
   b. Change **Barcode** from *Number #* to *String Abc.*

8) Union data

a. Drag the sheet *DMC-charges-2014-2016* to canvas and drop it over to the sheet *DMC-charges-2017.* You will see **Drag table to union** orange text box popped up briefly. Drop the sheet *DMC-charges-2014-2016* over the orange box. If you didn't drop the sheet over this orange text box, you will create a **join** instead of a **union**.
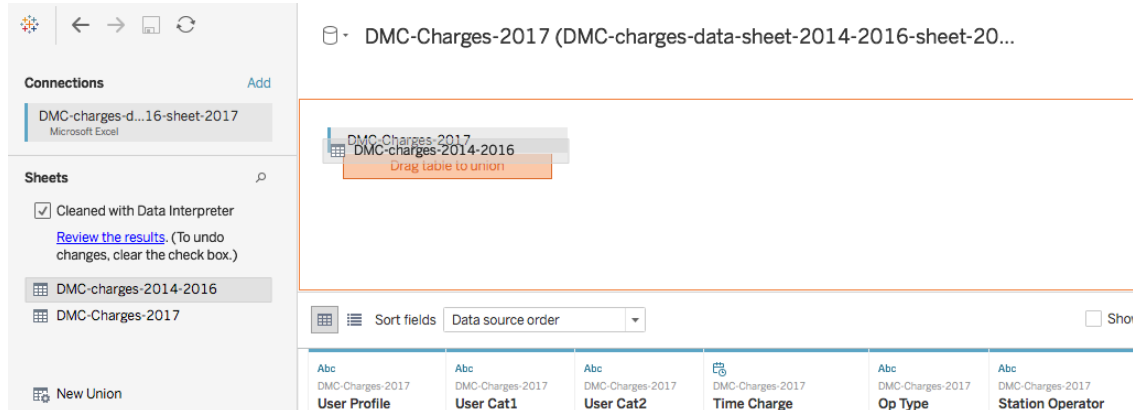

b. If you get the two sheets union properly, it should look like below. Tableau has added two new columns *Sheet* and *Table Name* to show where the rows originally came from. This may become very helpful later.
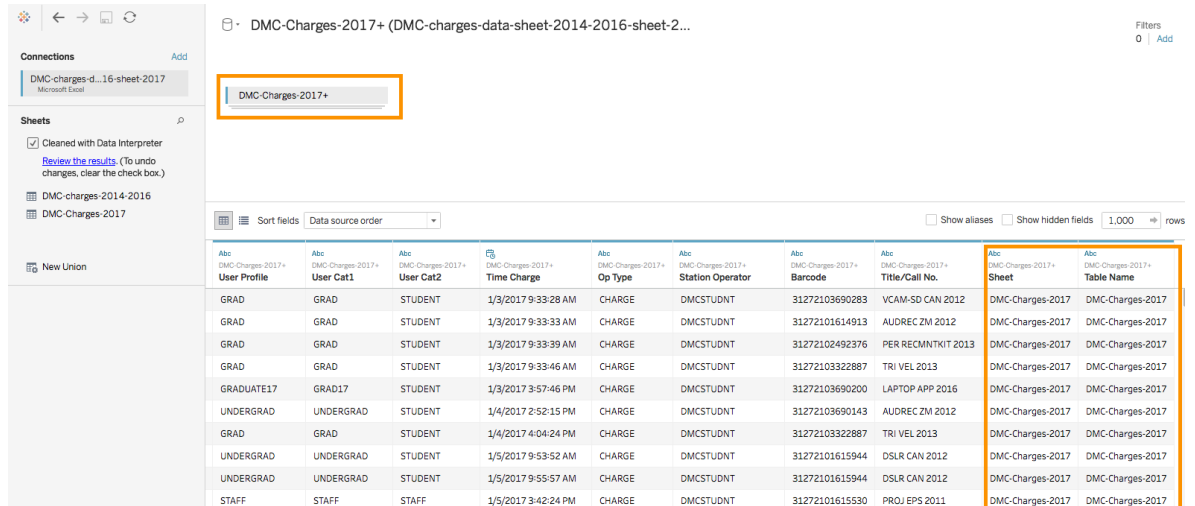
9) Note: Since you haven't created any worksheets, dashboards yet, Tableau Public's save functions are greyed out. That means you can't save your work to anywhere at the moment. So if you clean the canvas area, and drag and drop the sheet again, remember

to check the data type. Make sure all the fields have the right data types.
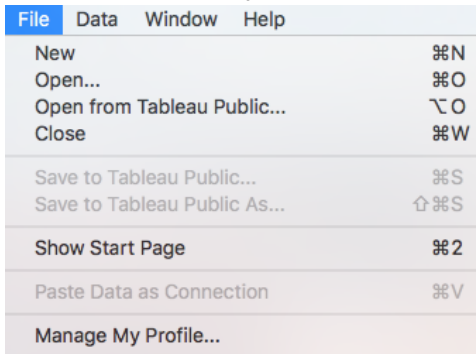
10) Test out our newly union single data source by creating a bar chart.

III.   Parameters

Parameters are dynamic values that can replace constant values in calculations, filters, and reference lines. Parameters allow you to give your users control over the visualization.

<mark>Activity 3.1 Create a parameter to show Top N most checked out items.</mark>
1) Follow the previous activity 2.2.
2) Create a parameter named *Top N*.
    a. Click on the drop down menu on Data pane. Choose create Parameter…
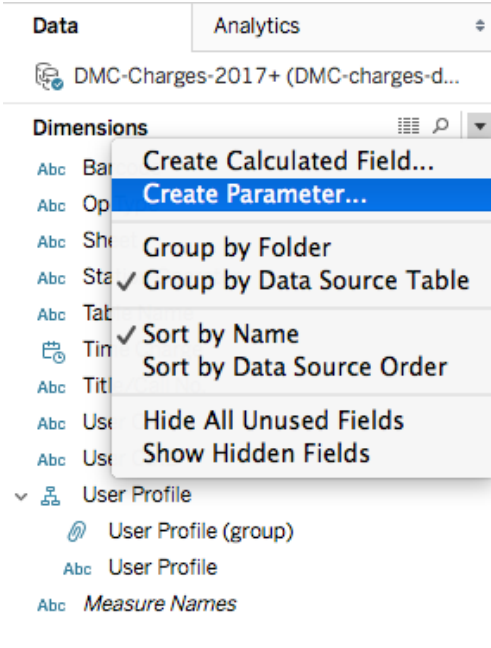
b. Change the settings as below.

Edit Parameter [Top N]

Name: Top N   Comment >>

Properties

Data type: Integer

Current value: 1

Display format: Automatic

Allowable values: ○ All   ○ List   ● Range

Range of values

☑ Minimum: 1   Set from Parameter ▶

☑ Maximum: 78   Set from Field ▶

☐ Step size: 1

Cancel   OK

c. Right click on the *Top N* parameter, choose *Show Parameter Control*.

3) Create a new worksheet and build a view.

a. Drag Number of Records to Columns shelf, Time Charge to Rows shelf, Title/Call No. to Color mark, change the chart type to a circle chart.

b. Drag Title/Call No. to Filters shelf. Choose Top -> By field -> Top -> Top N. click OK.

Filter [Title/Call No.]

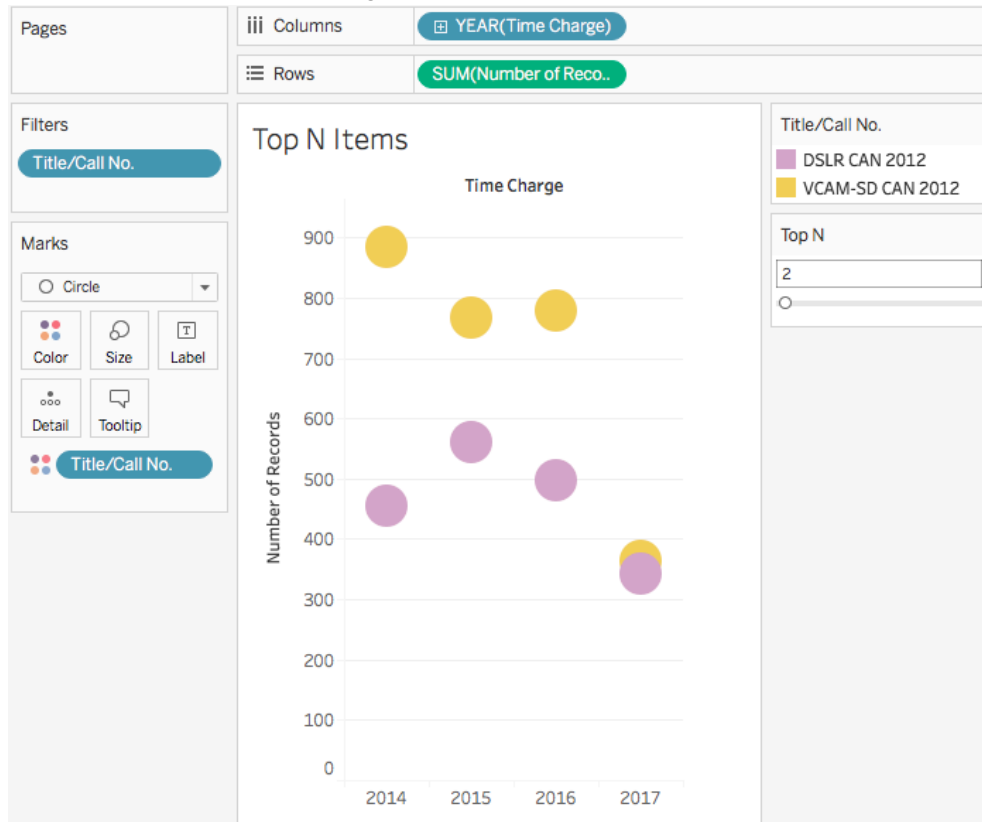General   Wildcard   Condition   **Top**

○ None
● By field:

Top   10   by

                   Enter a Value...
Number of Reco   Create a New Parameter...
                   Top N

○ By formula:

Top   10   by

c. The view will look something like below.

1) Duplicate the worksheet created in the previous activity.
2) Drag Number of Records to the Rows shelf again.
3) Create a running total table calculation.
   Right click on the first field on the Rows shelf, choose Quick Table Calculation -> Running Total.
4) Create a Dual Axis view.
   Right click on the second field on the Rows shelf, choose Dual Axis.
5) Right click on the left or right Y axis, choose Synchronize Axis.
6) The final view look like below.
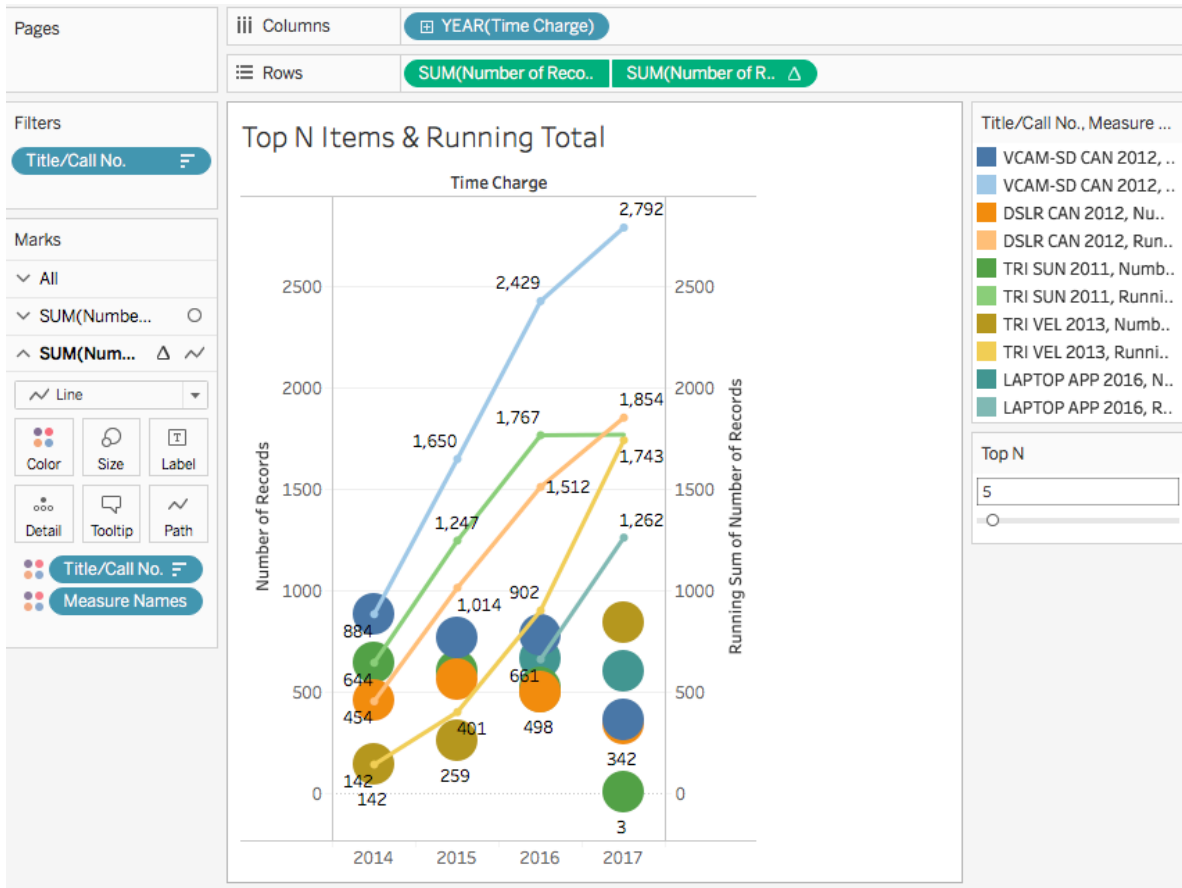
1) Create a parameter
   a. From the data pane, click on the drop-down menu, choose Create Parameter…

b. Name it Pick a Number and set it as below.

c. Right click over the parameter *Pick a Number*, choose *Show Parameter Control*

2) Create a Calculated Field
   a. From the data pane, click on the drop-down menu, choose Create Calculated Field…
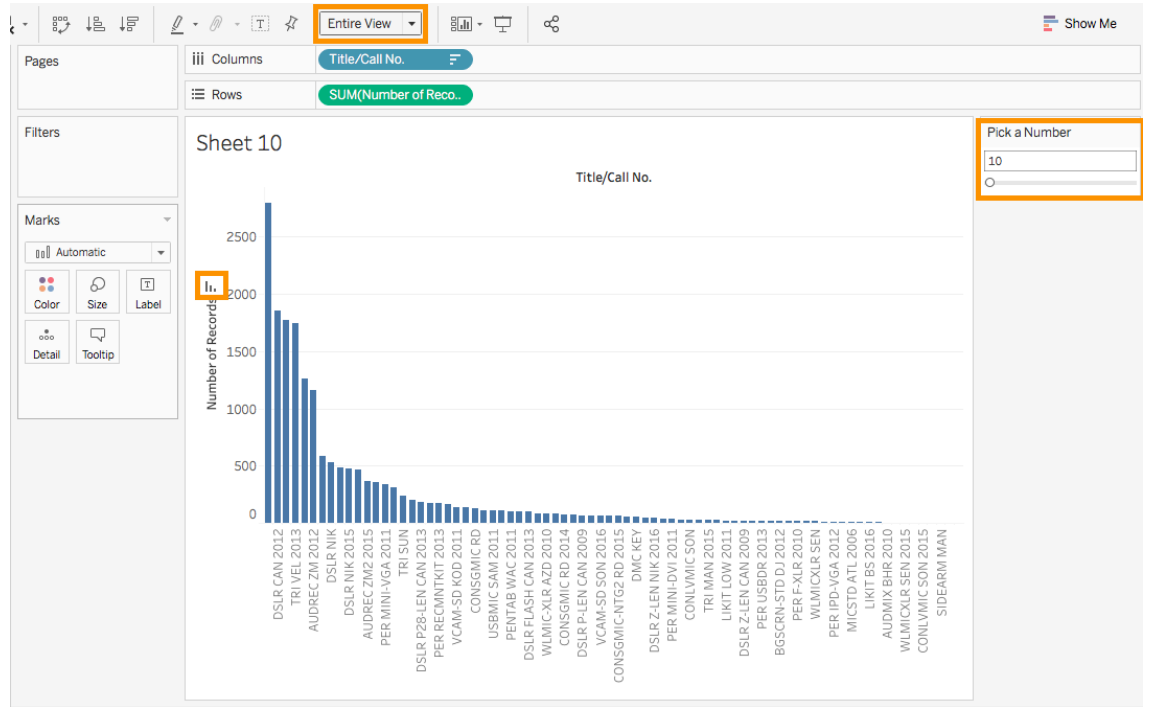   b. Name it *is less than Pick a Number* and set it as below.
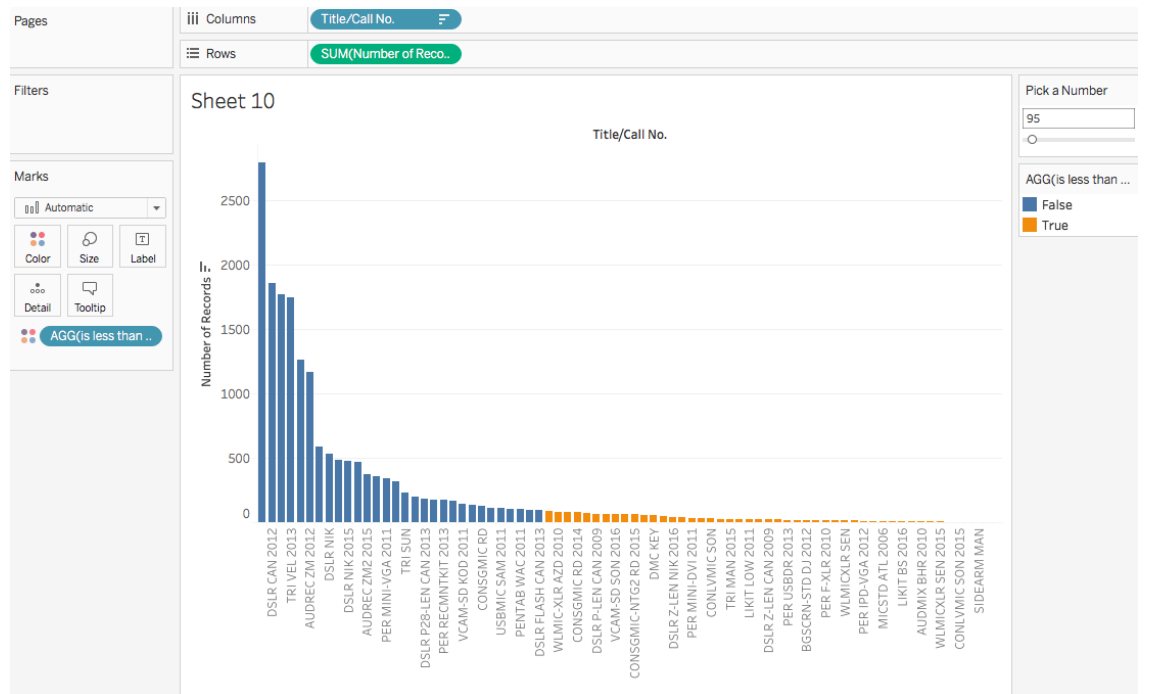

3) Build the view
   a. Drag Number of Records to Rows, Title/Call No. to Columns
   b. Sort by descending order

c. Click on Entire View to see the whole view.

4) Split the view
   a. Drag is *less than Pick a Number* from **Measures** to **Color** mark.
   b. Slide the Pick a Number slider to test it out.

IV. Overview of Calculations

Similarly to formulas in Excel, calculations within Tableau allow you to manipulate your data in any number of ways. Calculated fields are created by defining a formula using Tableau's built-in functions or basic operations. Note that there's a little equal sign in front of the calculated field – this indicates it's a calculated field, not natively from the data source.

Calculated Fields
If your underlying data doesn't include all of the fields you need to answer your questions, you can create new fields in Tableau using calculations and then save them as part of your data source. These fields are called calculated fields.

There are two types of calculations within Tableau, regular calculations vs table calculations.

A regular calculation, such as Sales minus Profit, is passed as part of the query that Tableau asks of a data source and the computation is handled by the data source itself with only the result set being returned to Tableau.

A table calculation is a secondary calculation that performed on top of the returned result set. This computation is done within Tableau. An example is as Running Total of Sales. A table calculation is indicated by this delta symbol on the pill.

Table Calculations can either be written like any other calculation, using the Table Calc functions in the calculation editor or **there is a set of pre-defined, commonly used computations called Quick Table Calculations.** These include options like Running Total, Percent of Total, and Year over Year Growth.

V. Quick Table Calculations

In a given view, the underlying data table (hence "table calculations") contains the information that makes up the marks. If you're working with a crosstab, this data is exactly what you see. For any other view, the underlying data is represented differently, but the values are the same as the crosstab. Adding or removing fields changes the view, which in turn alters the Table Calculation.

Quick table calculations are table calculations that you can apply quickly to your visualization in Tableau. The following common calculations are available as quick table calculations in Tableau for you to use:
- Running total
- Difference
- Percent difference
- Percent of total
- Rank
- Percentile
- Moving average

- YTD total
- Compound growth rate
- Year of year growth
- YTD growth

Table Calculations are performed on the returned results of a view. Table calculations are computed locally in Tableau, rather than being handled in the database. **The calculations are based only on the information in the view.**

Calculate Percent of Total for each user group per year.

1) Build the view
    a. Place Number of Records on the Columns shelf.
    b. Drag Time Charge and User Profile to the Rows shelf.
    c. Drag Number of Records to the Columns again.

2) Create a Quick Table Calculation
    a. Right click on the second SUM(Number of Records) field.
   b. On the drop down menu, choose Quick Table Calculation -> Percent of Total

c. Notice the delta symbol on the pill? That indicates it is a table calculation. Do your math and check the results. Do these numbers seem correct?
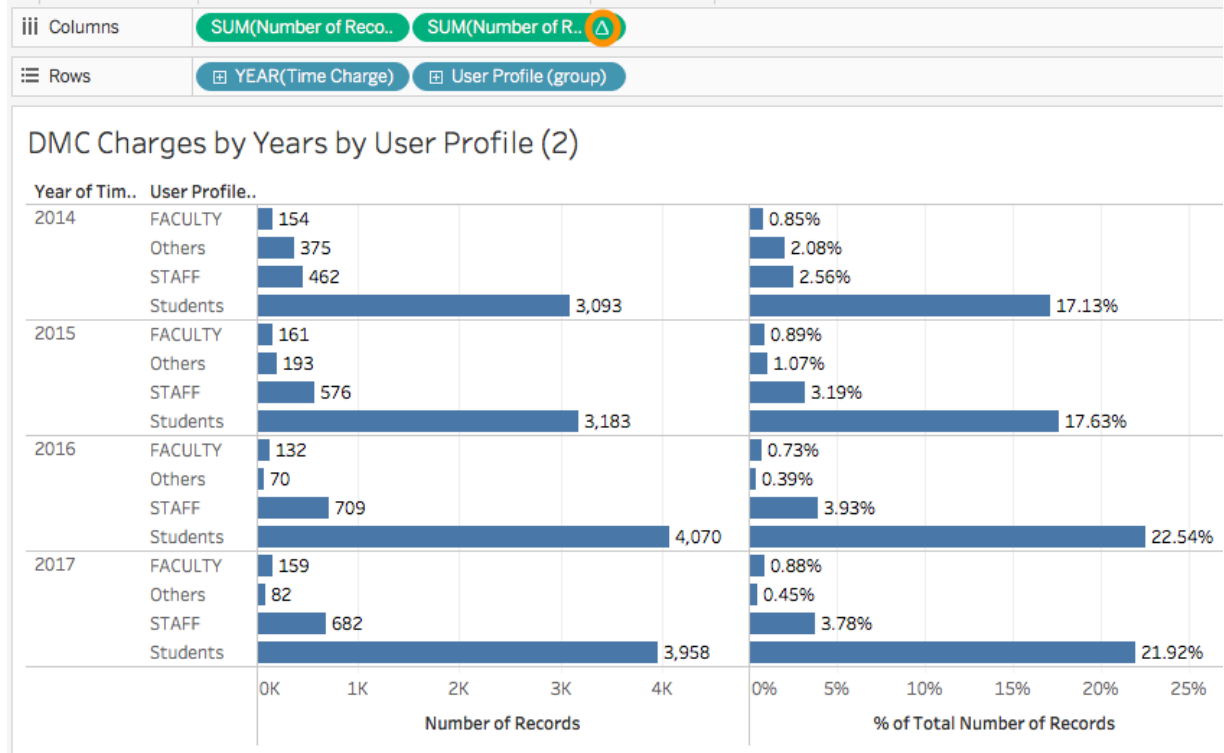
3) We see a percentage across year 2014-2017.
4) Add Subtotals for each year
   a. In the data pane, click on the Analytics tab.
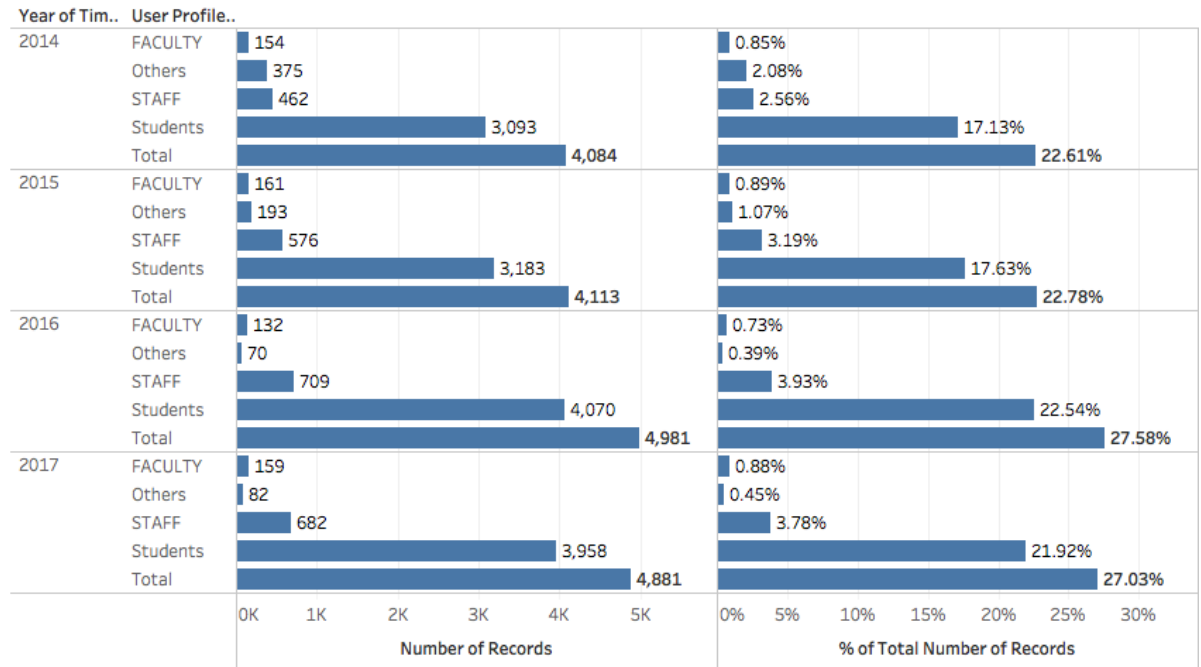   b. Click on Totals and drag it into the view, select Subtotals when a menu opens up.
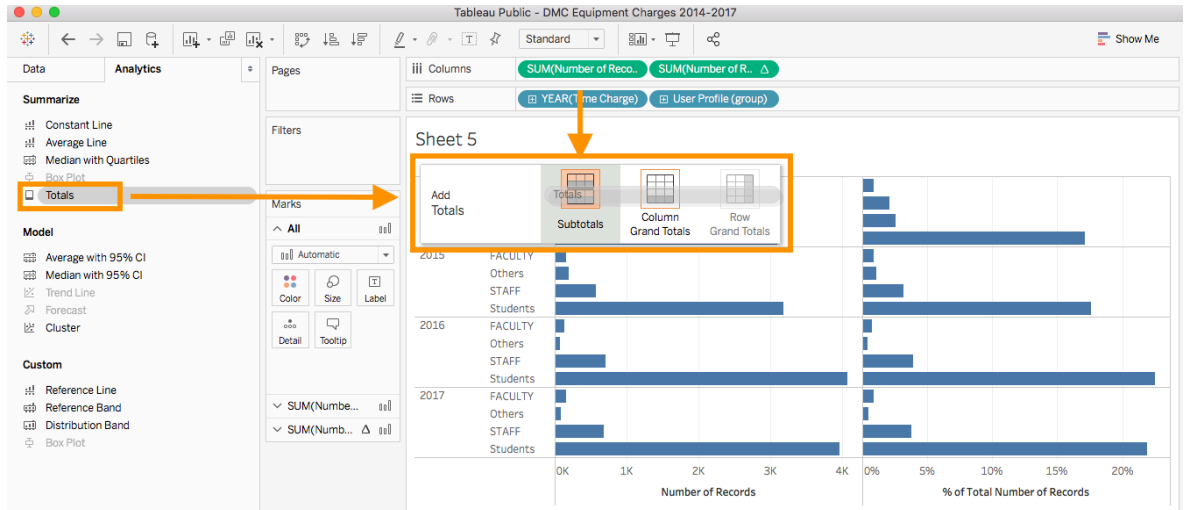
c. The totals for each year are added to the view. But the percentage is still the % of Total Number of Records along Table (Down) (i.e. the total number of records

for all the years.)

| Columns | SUM(Number of Reco.. | SUM(Number of R.. △ |
| Rows | ⊞ YEAR(Time Charge) | ⊞ User Profile (group) |

DMC Charges by Years by User Profile (2)

Year of Tim..	User Profile..	Number of Records	% of Total Number of Records
2014	FACULTY	154	0.85%
	Others	375	2.08%
	STAFF	462	2.56%
	Students	3,093	17.13%
	Total	4,084	22.61%
2015	FACULTY	161	0.89%
	Others	193	1.07%
	STAFF	576	3.19%
	Students	3,183	17.63%
	Total	4,113	22.78%
2016	FACULTY	132	0.73%
	Others	70	0.39%
	STAFF	709	3.93%
	Students	4,070	22.54%
	Total	4,981	27.58%
2017	FACULTY	159	0.88%
	Others	82	0.45%
	STAFF	682	3.78%
	Students	3,958	21.92%
	Total	4,881	27.03%

Number of Records: 0K, 1K, 2K, 3K, 4K, 5K

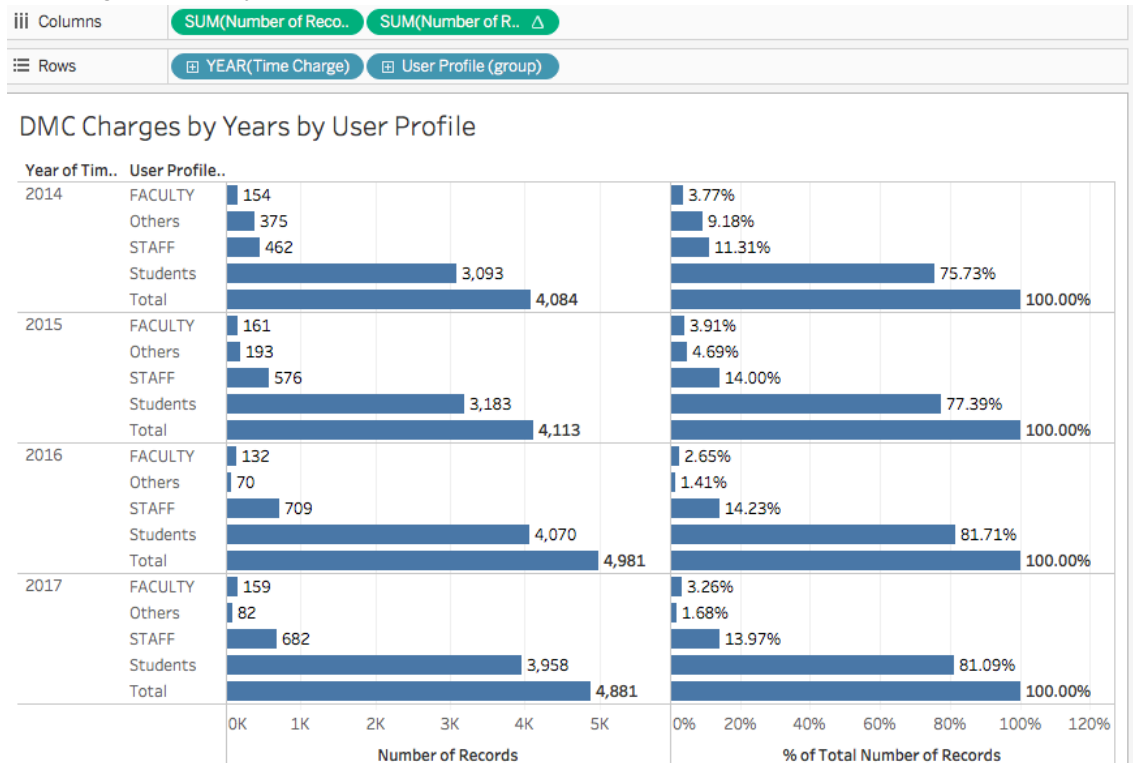% of Total Number of Records: 0%, 5%, 10%, 15%, 20%, 25%, 30%

5) Change how the table calculation is computing
   a. Right click on the second field in the Columns shelf

b. From the drop down menu, choose Compute Using -> Pane (down).
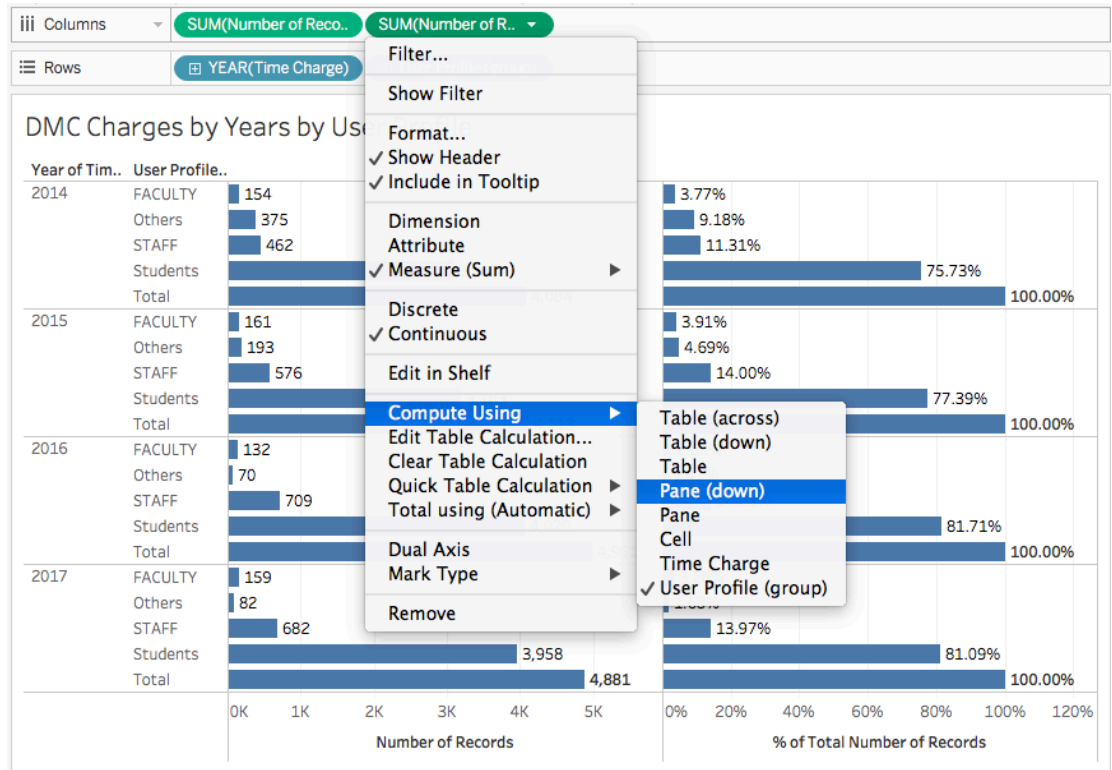
c. The percentage changes to % of Total Number of Records along User Profile(group) per year as shown below.

d. Tableau has defaulted to have the calculation run along Table (Across), meaning we see Percent of Total across all 4 years. If we want to see Percent of Total for each group per year, we need to change the scope from Table to Pane, computing the Percent of Total for each Pane, or Year.

Show the DMC equipment charges by year and a running total over years. Put the two measures in the same view.

1) Build the view.
   a. Drag Number of Records to the Rows shelf, the Time Charge to the Columns shelf, Drag Number of Records to the Rows shelf again.
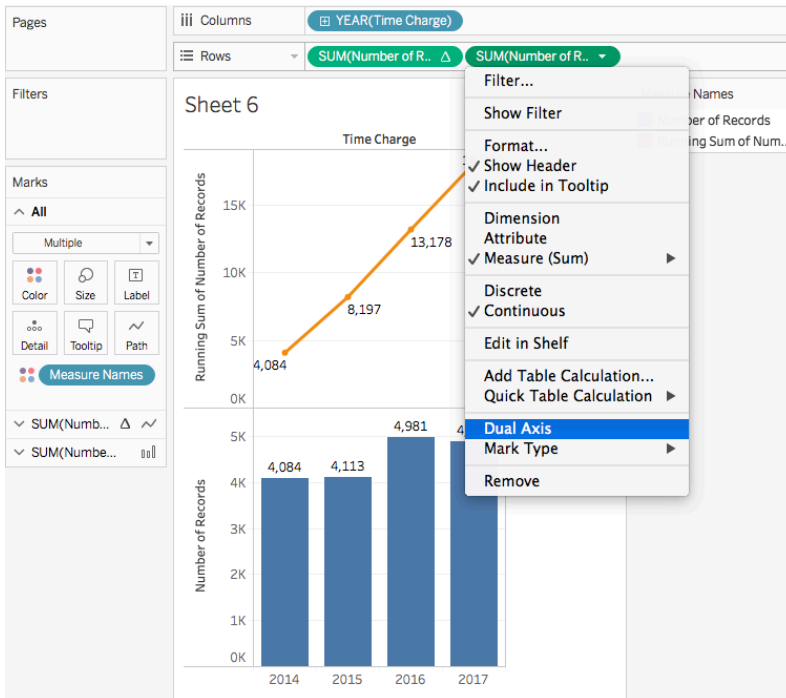   b. Change the second Number of Records on the Rows shelf to a bar chart.
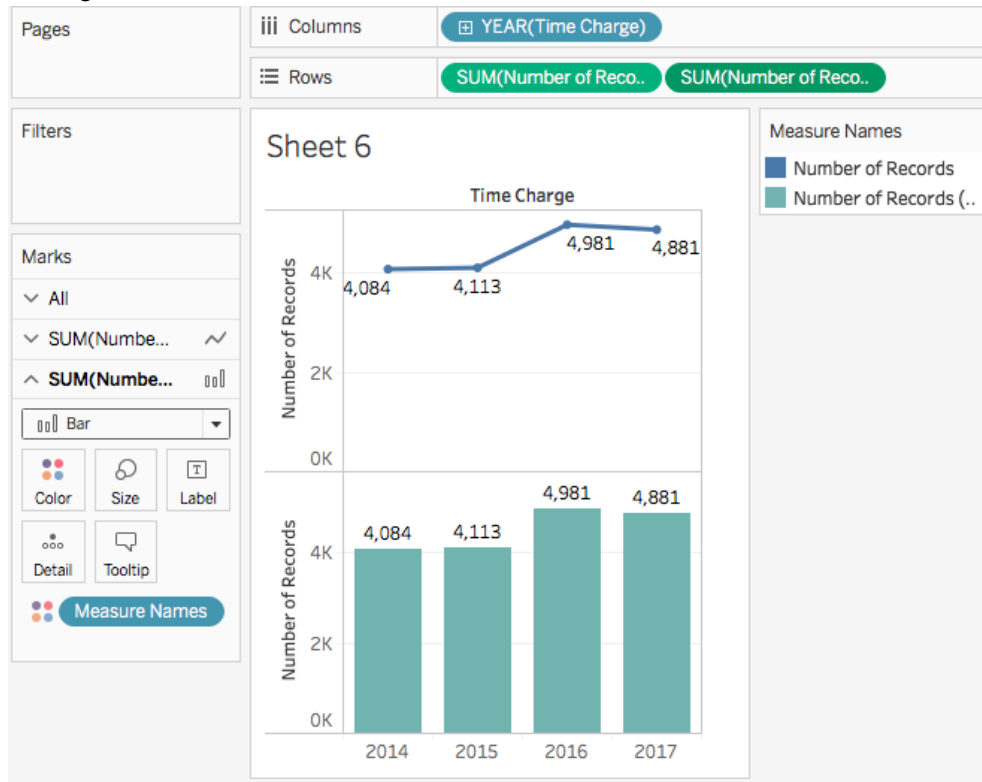
2) Create a running total table calculation.
   Right click on the first field on the Rows shelf, choose Quick Table Calculation ->
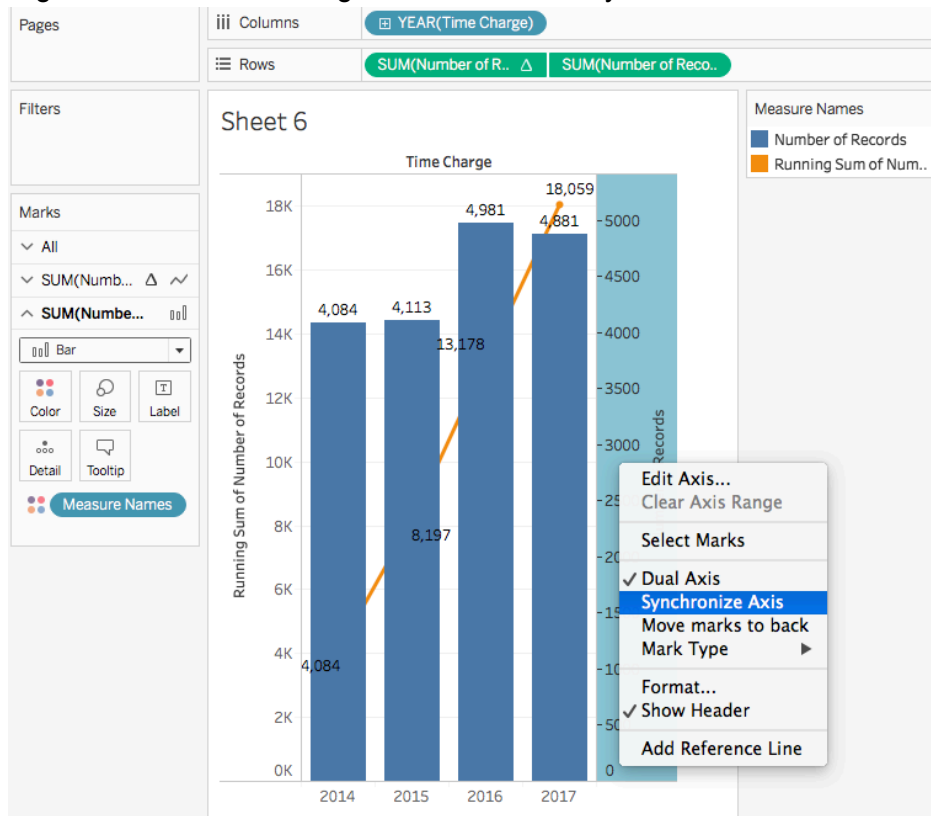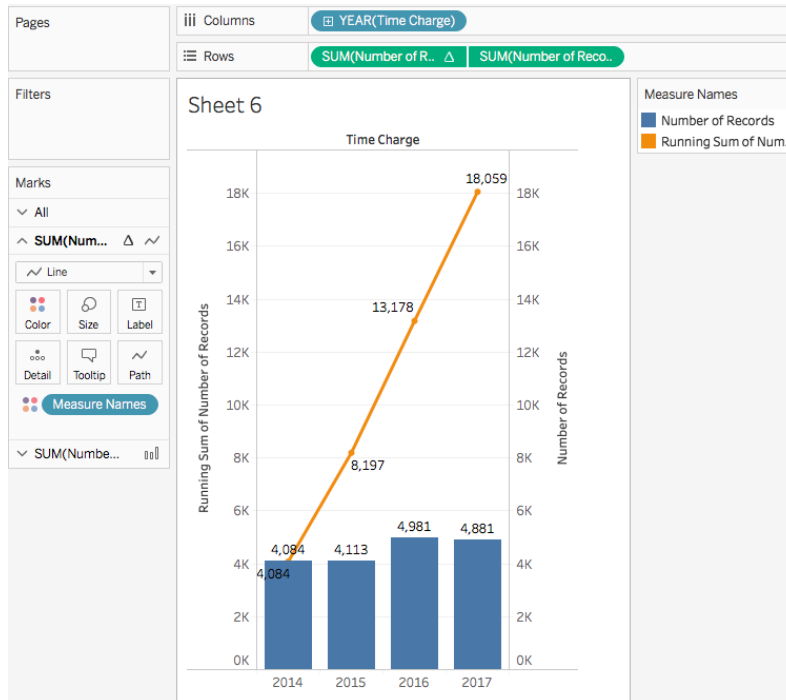
Running Total.
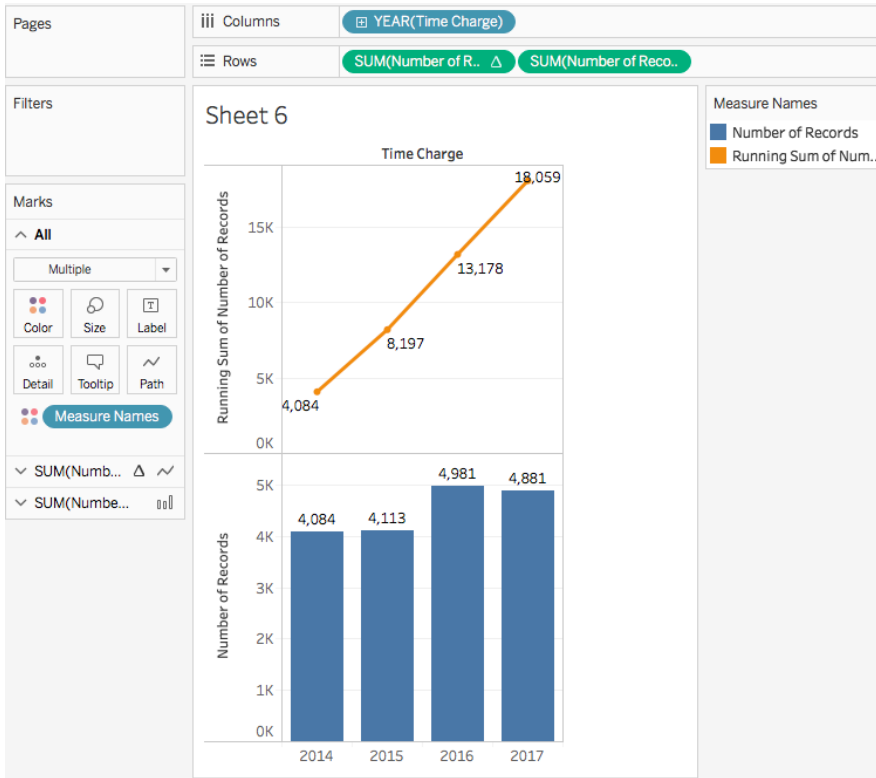
3) Create a Dual Axis view.
   Right click on the second field on the Rows shelf, choose Dual Axis.

a. Right click on the left or right Y axis, choose Synchronize Axis.

b. Turn on the Mark Label. Here is the final view.

VI. Regular Calculations

There are four basic components to calculations in Tableau:

- **Functions** - Statements used to transform the values or members in a field, such as IF, THEN, ELSEIF, ELSE, and END.
- **Fields** - Dimensions or measures (columns) from your data source.
- **Operators** - Symbols that denote an operation, such as > and <=.
- **Literal expressions** - Constant values that are represented "as is", such as "Profitable" and "Unprofitable".

The right hand side of the calculation editor provides information about the functions. It can be collapsed to save space, or expanded. Functions are colored blue in Tableau calculations, with the exception of logical functions, which are colored black. Field names are colored orange in the formula.

Functions in Tableau fall into one of several main categories: Number, String, Date, etc.

==Activity 6.1 Number calculations – ZN(expressions), Returns the expression if it is not null, otherwise returns zero. Use it to convert Nulls to Zeros.==
Convert nulls to zeros so that we could compare the sales to quotas. Null means unknown/blank in database. We can't compare a number to null.
1) Open number_calculations.twbx.
2) Right-click in the data pane and select create Calculated Field. Name it Corrected Quotas.
3) ZN(expression). The zero null function returns a zero wherever there is a null. We can think of this function as asking "Is there a quota for this country? If not, give it a zero." Type in *ZN([Quotas])*.
4) Drag Country to Row shelf and drag Corrected Quotas to Columns shelf. We see zeros where we had nulls before. Now we can move on and continue to analyze our data without worrying about hitting null values.
5) So let's look at just how different our sales are from our quotas.
   a. Create a new calculated field. Name it Difference.
   b. In the Calculation Editor, enter *SUM(Sales)-SUM(Corrected Quota)*.
   c. Let's bring this into the view. We can now see which countries are below quota and by how much. Taiwan, Portugal, and Austria are pretty big outliers in the positive direction, because those are the instances where we have a quota of zero, so the difference is pretty vast. We should probably go back and give these countries quotas.

==Activity 6.2.1 String calculations – CONTAINS, Returns true if the given string contains the specified substring.==
1) Open string_calculations.twbx.

2) Find the product names that contain the company who makes them.
3) Right click and edit the parameter *Company,* which is a string parameter that allows a list of values and those values are the companies. Add one, Xerox, and click OK.
4) Create the calculation that checks if one of these names is in the Product Name. Right click in the data pane and select "Create Calculated Field". Name it "Company Products".
5) In the Calculation editor, type *CONTAINS([Product Name],[Company])*The calculation is valid, click OK.
6) Let's place our new calculation "Company Products" on the filter shelf and keep only True. Now we click through the parameter we see products from the companies that we're interested in.

==Activity 6.2.2 String calculations – SPLIT, Returns a substring from a string, using a delimiter character to divide the string into a sequence of tokens. Use it to split a field into separate parts.==

1) Order ID consists of four parts, the Distribution center code, the year of the order date, and two additional pieces to make it a unique identifier.
2) Right click on Order ID, select Transform > Split.
3) Tableau has created 4 new fields, one for each part of the Order ID. Let's rename Split 1 as Distribution Center.
4) Let's bring this out, and then bring out Number of Records, so we can see the volumes going through these distribution centers.
Note, splitting strings can also be done when connecting to the data set originally.

==Activity 6.3.1 Date calculations – DATEDIFF, Returns the difference between date1 and date2 expressed in units of date part. Use it to find out how long something took.==

1) Open date_calculations.twbx.
2) We want to know the average time it takes for an order to ship for each country.
3) Right click in the data pane and select Create Calculated Field. Name it "Time to Ship".
4) In the Calculation editor, type in DATEDIFF('day',[Order Date],[Ship Date]), click OK.
5) Let's color our countries by using Time to Ship by dragging Time to Ship to the Color mark. Right click over SUM(Time to Ship), change the aggregation to Average.
6) Click on the Color mark, change the color to a red-black diverging palette and we'll reverse it because more time is bad. Now we can quickly see the countries that the longest shipping times and we can focus on those areas.

1) Click Tableau Dates data set as data source. In this data set, the dates are stored separately as Day, Month, and Year. We want to create a calculated field that combines these fields into one that Tableau can recognize.
2) Right click, create calculated field. Name it Tableau Date.
3) In the calculation editor, type in *MAKEDATE([Year],[Month],[Day])*, click OK.
4) Drag Tableau Date to Columns shelf. Now we have a date that Tableau can recognize. And we have all the drill down and functionality that we expect with dates.
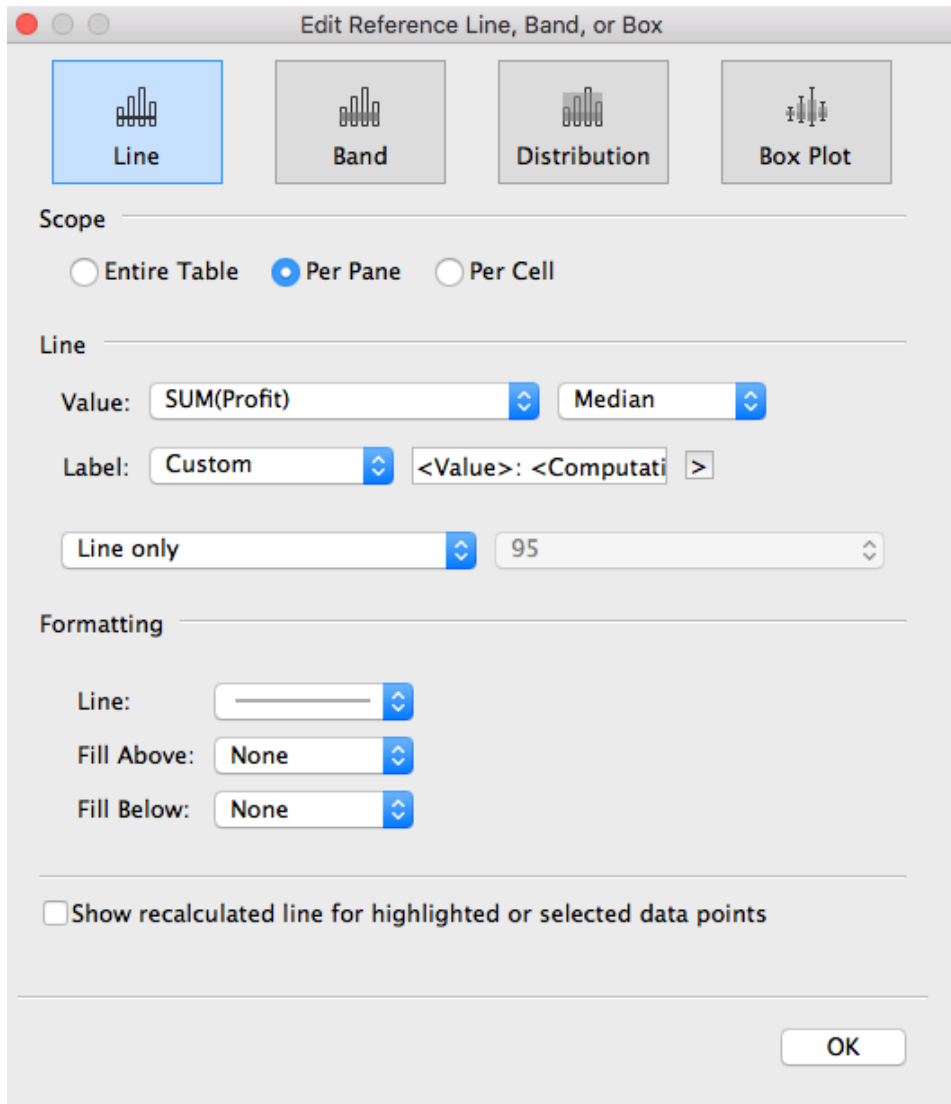
VII. Adding Analytics objects to the view

In Tableau Desktop, options for adding Analytics objects to the view are available in the **Analytics** pane or menu, or in context in the view.

To add an item from the **Analytics** pane, drag it into the view. When you drag an item from the **Analytics** pane, Tableau shows the possible destinations for that item. The range of choices varies depending on the type of item and the current view.

Reference lines do exactly what it sounds like they'd do – they add a point of reference to a view.

1) Open reference_lines.twbx.
2) Click Analytics pane, choose Custom-> Reference Line, drop to scope Table, click OK. We will see a reference line has been added across the bar chart.
3) Right click over the line, choose Remove.
4) Let's redo it and use Pane this time.

Edit Reference Line, Band, or Box

| Line | Band | Distribution | Box Plot |

Scope

○ Entire Table ● Per Pane ○ Per Cell

Line

Value: SUM(Profit) | Median

Label: Custom | <Value>: <Computati >

Line only | 95

Formatting

Line: ————————
Fill Above: None
Fill Below: None

☐ Show recalculated line for highlighted or selected data points

OK

5) Scope. Scope is set to per pane, but can also be across the entire table or per cell. If we click Entire Table, we can see that the average line switched from three different lines, per Category, to a single average across the entire table.
6) Line. We'll make this a Median Profit line.
   a. Value lets us select which measure we want the line to be in reference to. Here, we have both Sales and Profit in the view, so we can select either of them. Let's change it to Profit.
   b. The default aggregation for the line is average, but we can change that. Let's change it to Median.
   c. Next is Label. Here we can set what shows as the label on the line.
      i. None is fairly self-explanatory.
      ii. Value displays whatever the value aggregation of the measure is, so the actual numerical median of profit.
      iii. Computation displays what the aggregation of the measure represents, so here it would be the words "Median Profit".

> iv. Custom gives us the option to type in whatever we want, and the arrow to the side offers fields that can be inserted. We'll use <Value>: <Computation> of <Field Name>.

VIII. URL actions on Dashboard

1) Create a Dashboard shown as below.
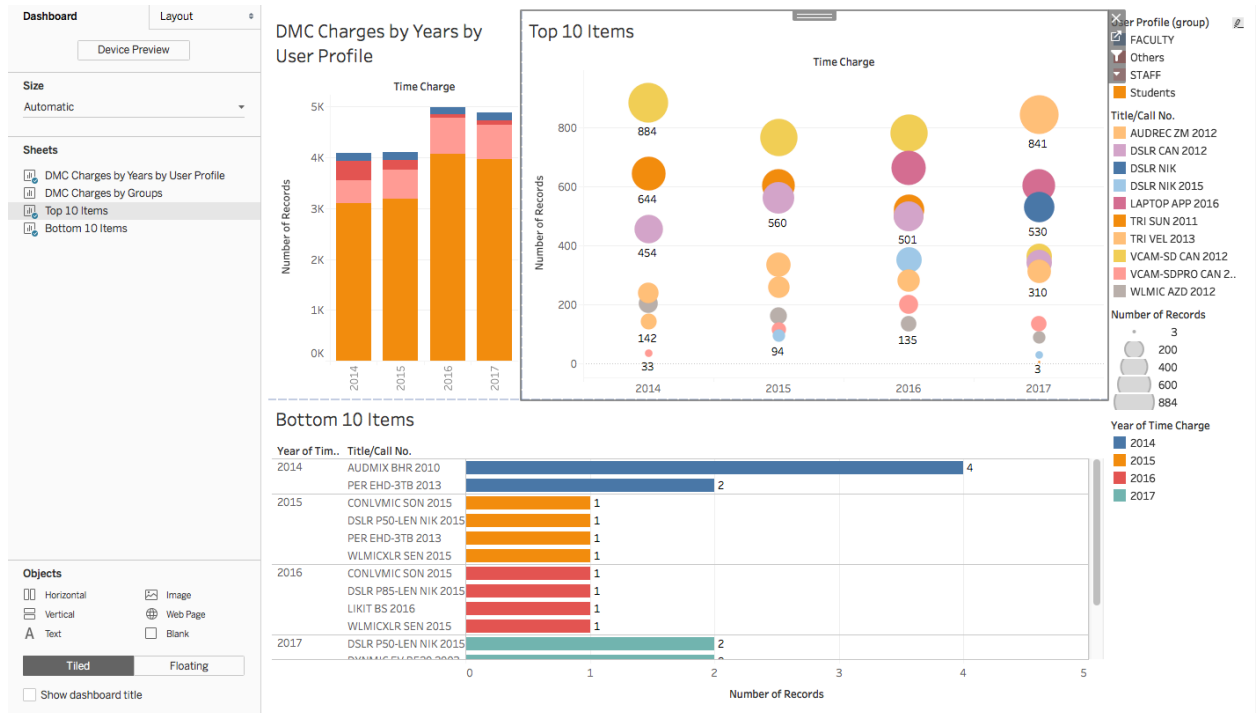
2) Go to Dashboard -> Actions…
3) Click on Add Action -> URL…

4) Change the settings to as it is shown below.

5) Click OK.

6) Test out the URL action

a. Select a mark on the Top 10 Items sheet or Bottom 10 Items sheet.
b. Click on Equipment URL at the bottom of the tooltip.
c. The equipment listing page will open up in a new browser window.
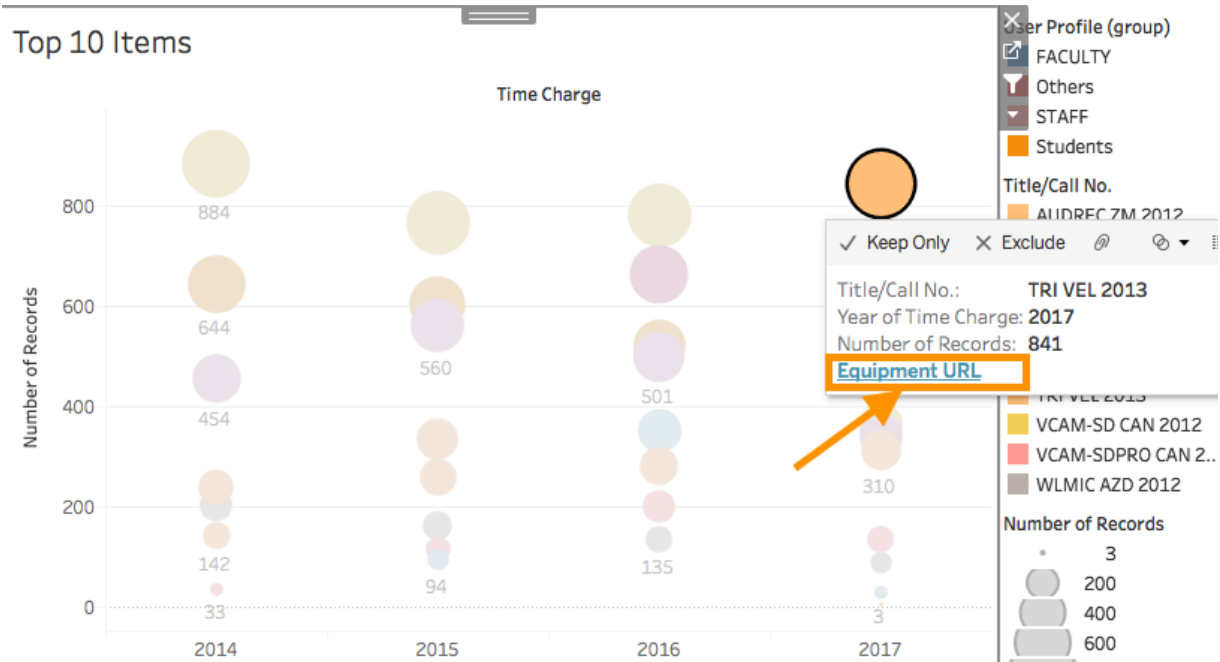
Resources
1) Tableau online help
   https://www.tableau.com/support/help
2) Tableau free training videos
   https://www.tableau.com/learn/training