Lessons from Tableau Training: Part II

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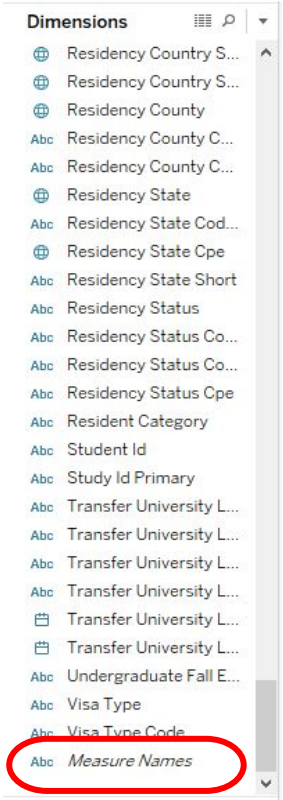
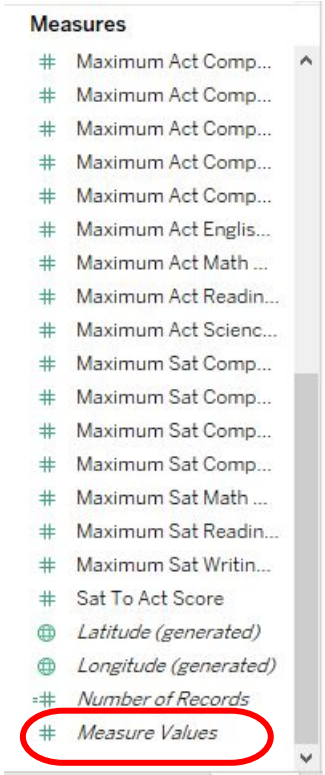
Have you ever had trouble answering these?

- Why are some called dimensions and others called measures?
- Why are some blue and others green?
- What are the measure names and measure values? Those aren't in the data source…





First Things First

- Each field in the connected data source has two attributes:
  - Either a dimension or measure (what it is)
  - Either discrete or continuous (how it is)
- Fields are assigned as dimensions or measures by Tableau
  - This may differ from what you consider the data to be
  - But that’s okay… You can change them!

Understanding Dimensions v. Measures

Dimensions

- Tableau assigns categorical information as a dimension
  - Strings, booleans, dates
- Dimensions create buckets - they help divide the data

Degree Level Category Primary Cpe	Progression Classification Cpe
Undergraduate	Auditor
	Freshman
	High School
	Junior
	Senior
	Sophomore
	Undergraduate - Nondegree
Graduate	Doctor's Degree Professional Practice
	Doctor's Degree Professional Practice Nondegree
	Doctor's Degree Research/Scholarship (Coursework)
	Doctor's Degree Research/Scholarship (Dissertation)
	Graduate Nondegree
	Master's
	Post-Baccalaureate Certificate
	Post-Master's Certificate
	Specialist's
House Staff	House Staff
Post-Doctoral	Post-Doctoral

Understanding Dimensions v. Measures

Measures

- Tableau assigns quantitative numerical information as a measure
  - Numbers (integers, floats)*
- Measures fill buckets - they are “math” data that help do calculations
- *Disclaimer: not all numbers should be measures - think Student IDs and postal codes

Yes!

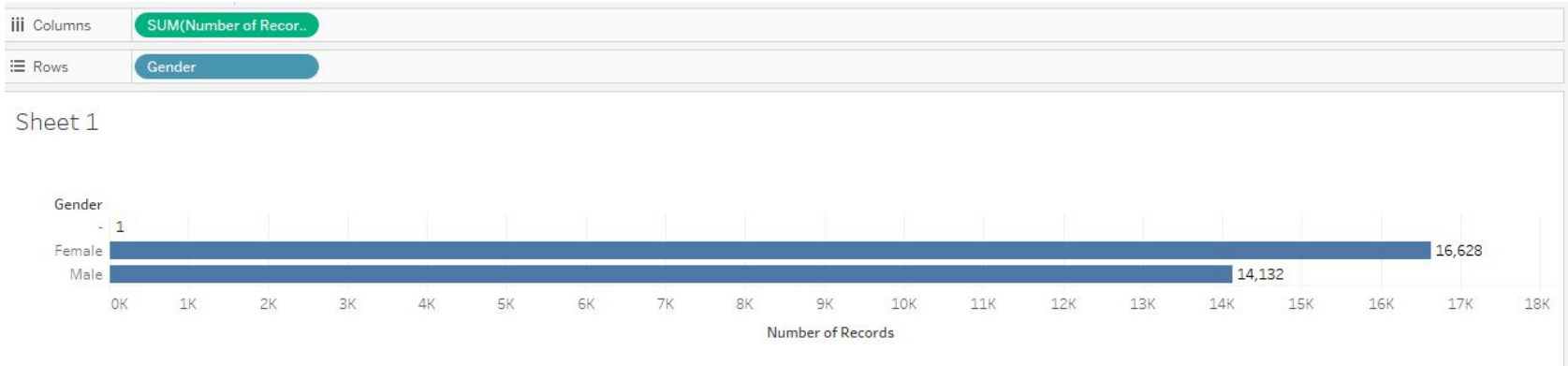
Credits Attempted Term Institutional
401,921

No!

Student Id
60000196
60000551
60000624
60000675

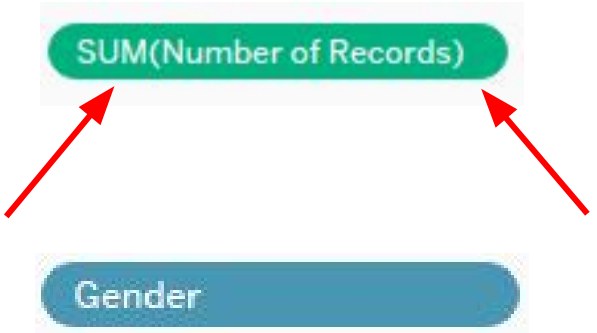
Understanding Dimensions v. Measures Example

- Gender is a dimension
  - Divides the data into the possible gender options
- Number of Records is a measure
  - Summing the number of records shows us how many students are in each gender option



Distinguishing Dimensions v. Measures on a Viz

- Measures will be aggregated using some sort of mathematical function
  - Wrapped in parentheses
- Dimensions will not
- Color **does not** distinguish dimensions & measures



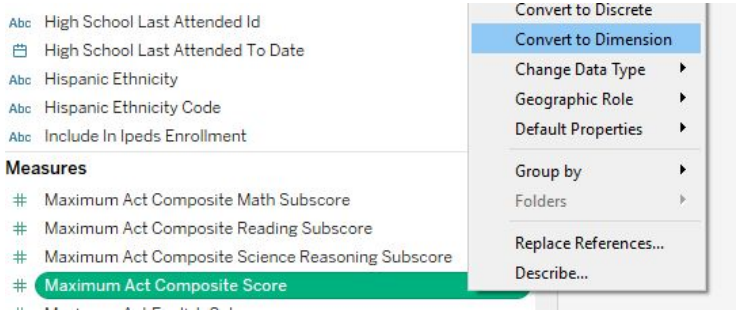
Switching Dimensions and Measures

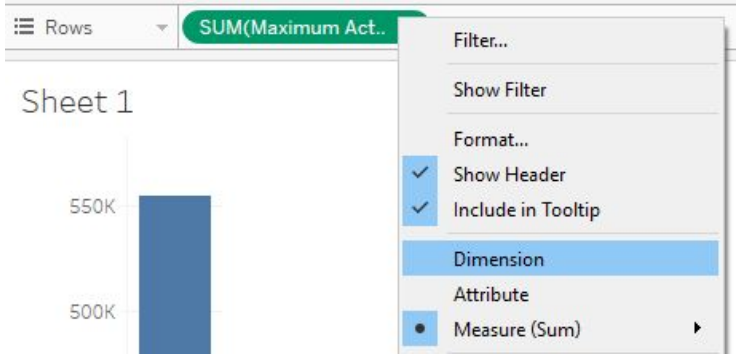
Universally

- 1. Drag field from Dimensions shelf to Measures shelf (or vice versa) in data pane
- 2. Right-click on field in data pane and select **Convert to Dimension (Measure)**
  - It will now appear in Measure (Dimension) shelf

One-time Only

- 3. On the viz, right-click and select **Dimension (Measure)**

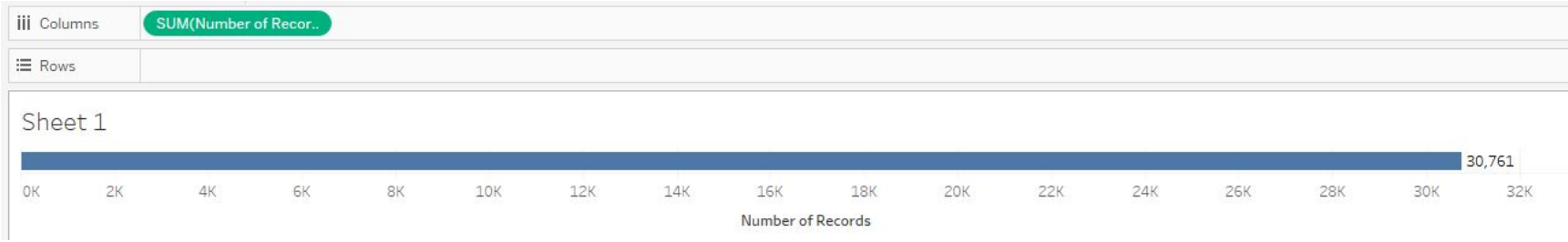




Understanding Discrete v. Continuous

Continuous

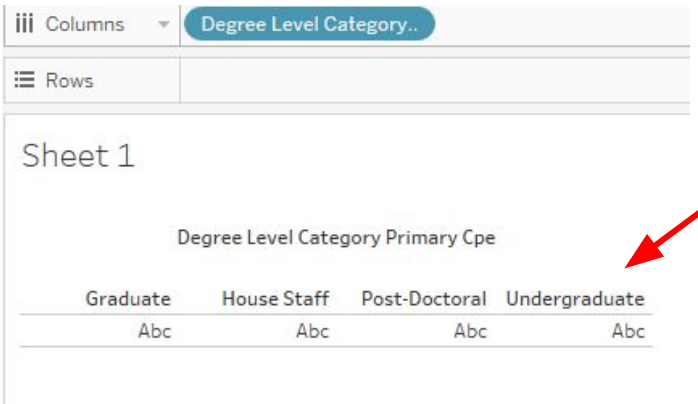
- “Forming an unbroken whole, without interruption”
- Placing a continuous value on **Rows** or **Columns** shelf creates an axis - shows actual and potential values
- Measures are assumed to be continuous



Understanding Discrete v. Continuous

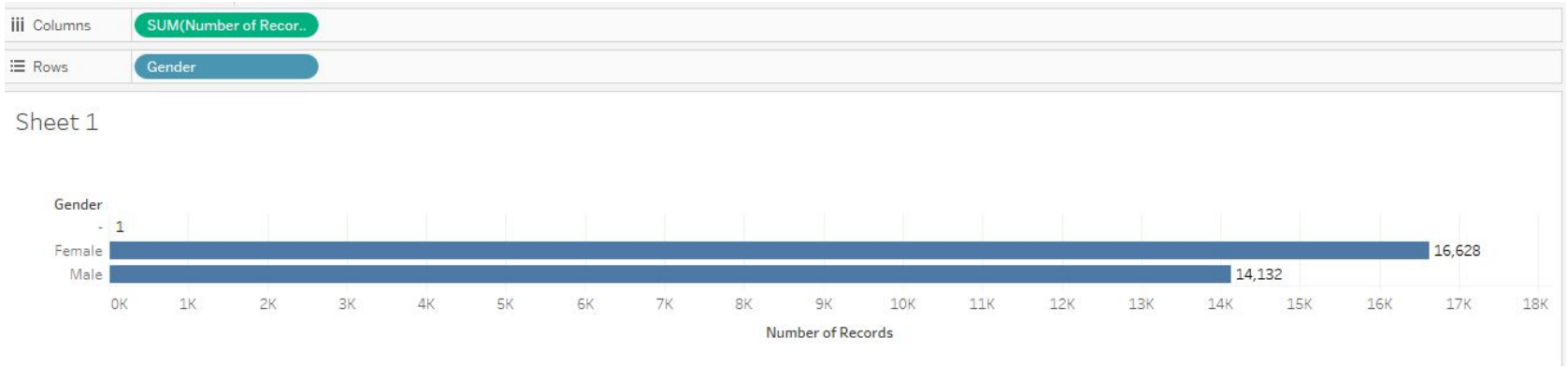
Discrete

- "Individually separate and distinct"
- Placing a discrete value on **Rows** or **Columns** shelf creates headers
- Dimensions are assumed to be discrete



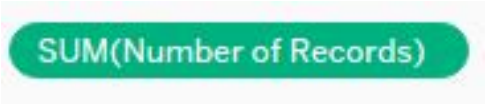
Understanding Discrete v. Continuous Example

- Gender is discrete
  - Creates headers for the gender options
- Number of Records is continuous
  - Creates axis to measure the aggregation



Distinguishing Discrete v. Continuous on a Viz

- Discrete fields are blue
- Continuous fields are green



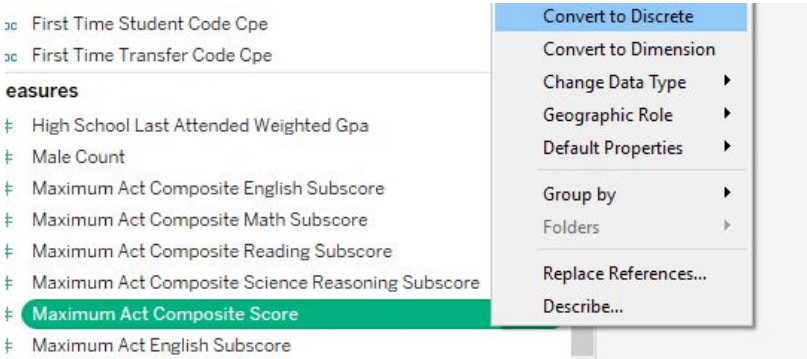
Switching Discrete and Continuous

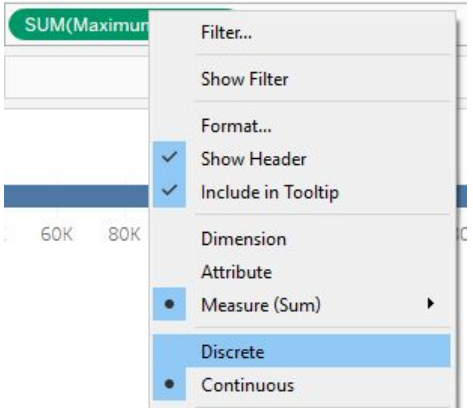
Universally

- Right-click on field in data pane and select **Convert to Discrete (Continuous)**

One-time Only

- Right-click on field on the viz and select **Discrete (Continuous)**

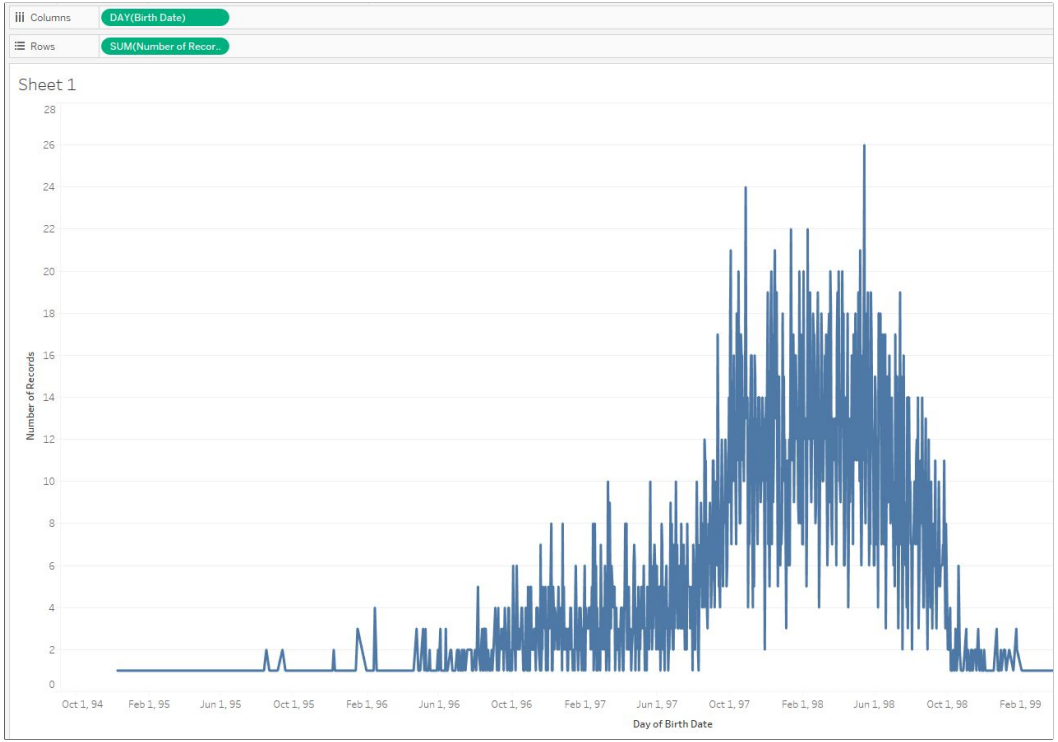




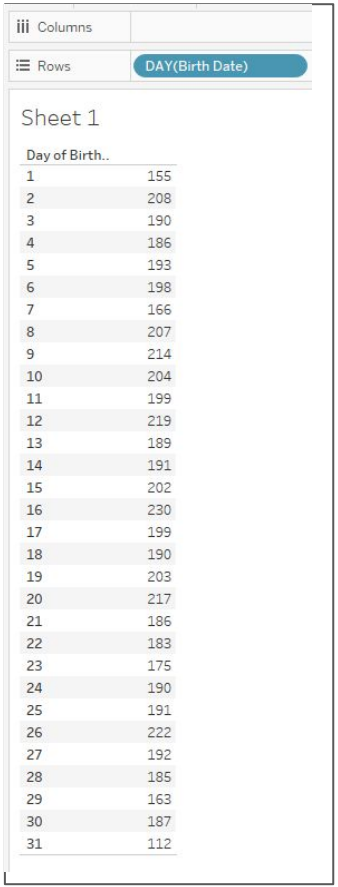
Caution: Dates

- Dates can be either continuous or discrete
- ***Continuous:*** represent the chronological progression of time, axis acts as a timeline
  - Associates every part of date with a particular date
  - I.e. May 5th, 2017
- ***Discrete:*** represent the pieces of a date independently
  - I.e. May is the month, 5 is the day, 2017 is the year

Continuous v. Discrete Dates Example



Continuous

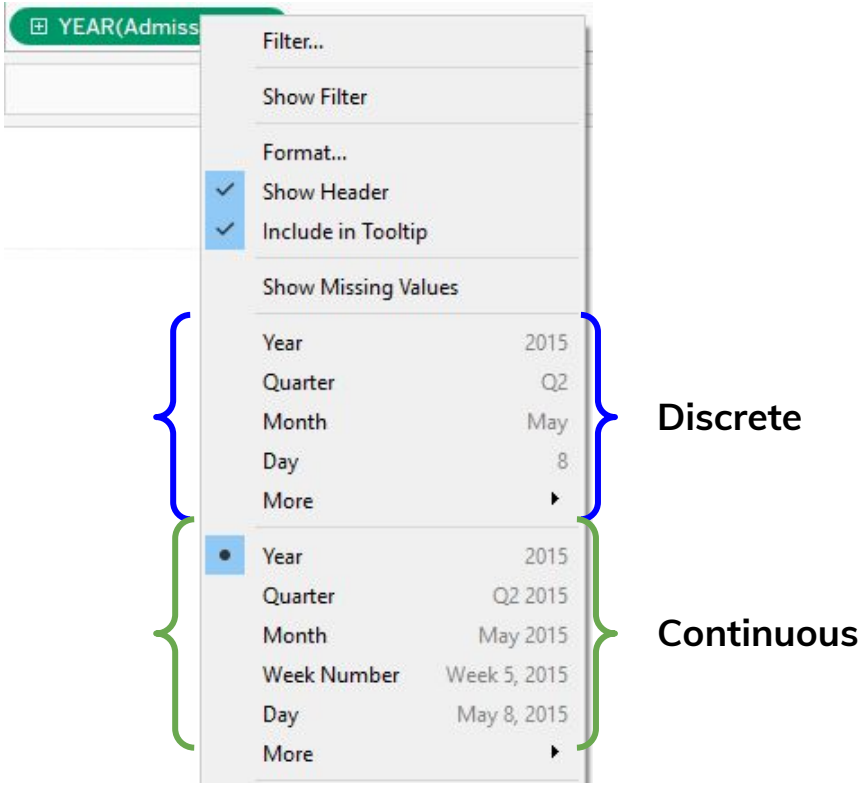


Day of Birth..	
1	155
2	208
3	190
4	186
5	193
6	198
7	166
8	207
9	214
10	204
11	199
12	219
13	189
14	191
15	202
16	230
17	199
18	190
19	203
20	217
21	186
22	183
23	175
24	190
25	191
26	222
27	192
28	185
29	163
30	187
31	112

Discrete

Switching Continuous and Discrete Dates

- Right-click on date field on viz
- Select appropriate date part and representation

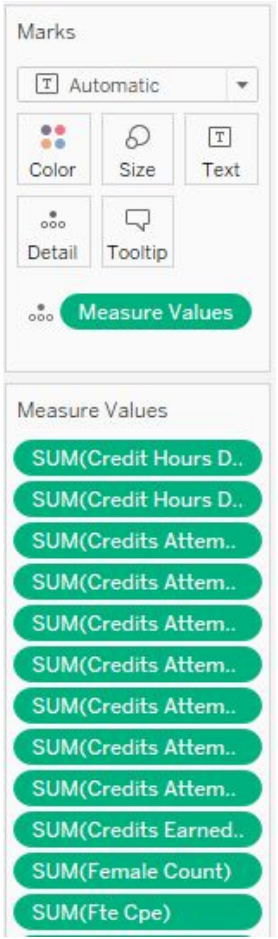


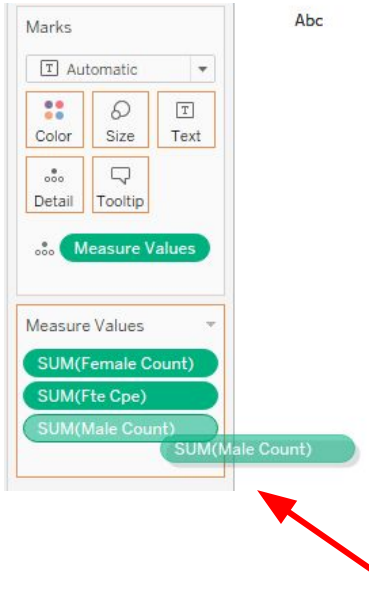
Understanding Measure Names v. Measure Values

- Fields not in original data source, but provided by Tableau
- Allow you to create vizs with multiple measures
- **Measure Names:** a collection of all the names of the measures in one field
  - Housed under Dimensions since the values are strings
- **Measure Values:** a collection of all the values of the measures in one field
  - Housed under Measures since the values are measures themselves

Utilizing Measure Values

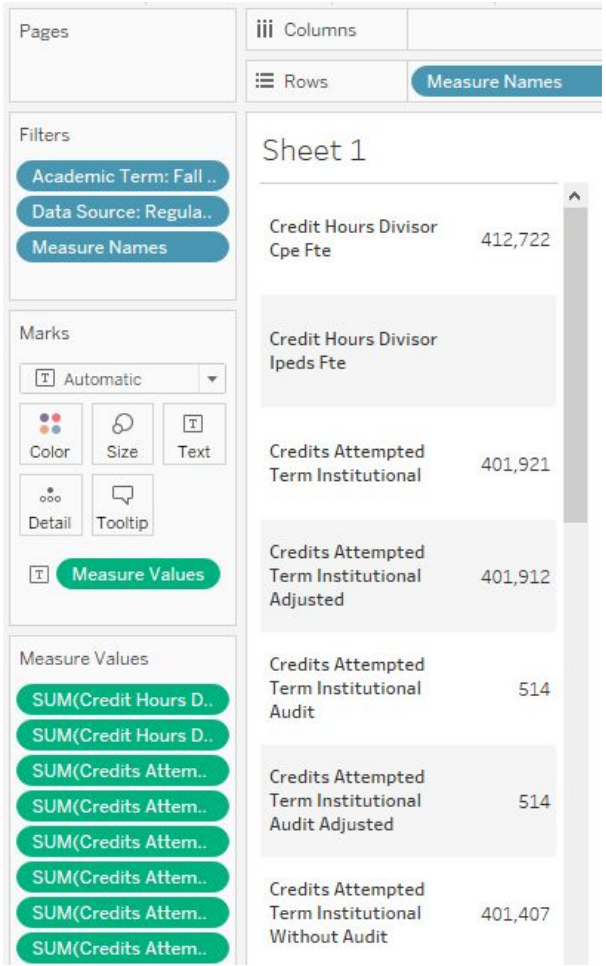
- When adding Measure Values to a viz, a separate shelf appears below the **Marks** shelf with all the Measures in their default aggregation
- Remove or add Measures as necessary by dragging them off/on the shelf





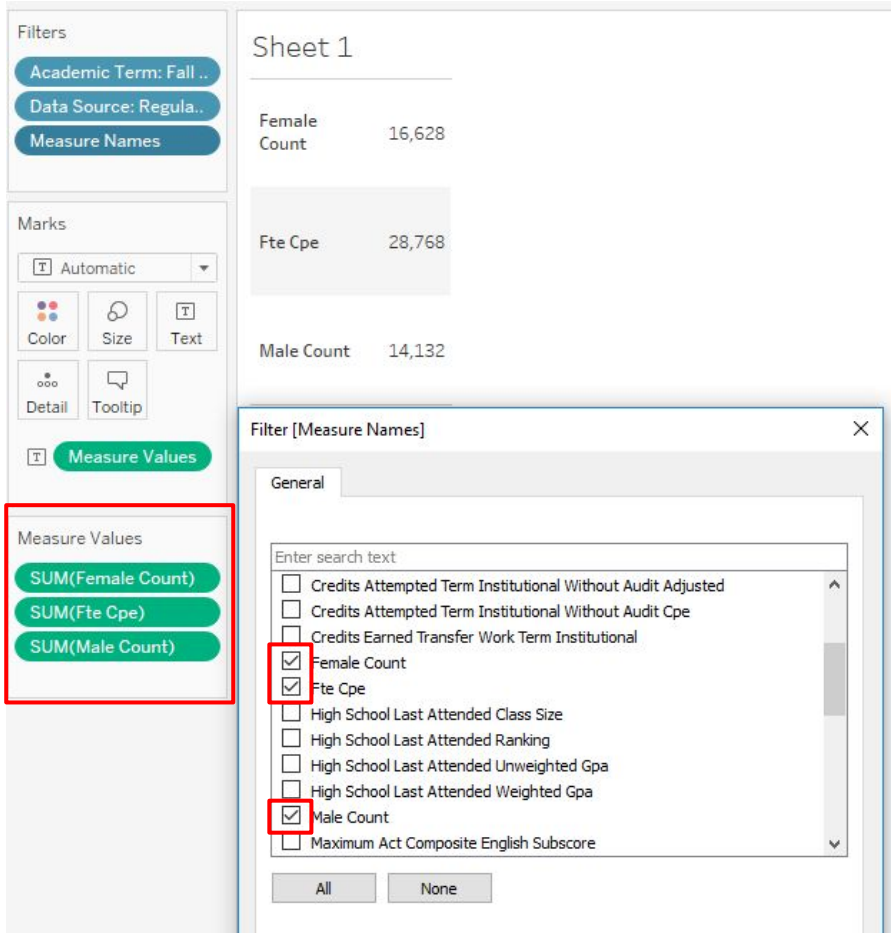
Utilizing Measure Names

- To display what the Measure Values indicate, Measure Names needs to be on the viz as well
- Otherwise, you'll get this…
  - Remember: Measure Names is a dimension and, thus, creates buckets to divide the data



Staying in Sync

- Once Measure Values is on the viz, Measure Names appears on the **Filter** shelf automatically
- The names chosen to display on Measure Names will stay in sync with the values in **Measure Values**
  - An action to add/remove in one will reflect in the other



Tip for Measure Values

- If using a data source with many Measures, but only needing to display a few:
  - Move one Measure to the text icon on the **Marks** shelf
  - Double-click on other Measures to send them to the **Marks** shelf
  - Measure Values will automatically appear once second Measure is added