Data Visualization in Tableau

About Tableau

Tableau is a powerful visualization tool. A Tableau license is available for free for students with a .edu email address. You can use the key on two different devices.

Key Terminology

Tableau's goal is to summarize datasets. When you import a spreadsheet into Tableau, it will automatically interpret every column of that spreadsheet as either a "dimension" or a "measure" to determine how it will summarize the the data in that column.

- **Dimension**: a field that can be considered an *independent* variable.
    - Independent variables cause some change in a dependent variable.
    - For example, a column of city names will be parsed as a dimension, allowing you to count how many times each city appears in your data.
    - Tableau treats all qualitative data as dimensions.
- **Measure**: a field that can be considered a *dependent* variable.
    - A change in independent variables can cause change in dependent variables.
    - Tableau treats all quantitative data as measures.
    - Aggregated data like sums are also usually measures
- **Discrete**: individually distinct. These appear in blue.
    - Generally, discrete dimensions and measures add fields and headers to the view.
- **Continuous**: These appear in green.
    - Generally, continuous dimensions and measures add axes to the view.

Building Visualizations

Conceptually, Tableau operates by clicking and dragging your dimensions and measures into different areas of the interface to generate a visualization.

- Columns
    - The vertical component of your table.
- Rows
    - The horizontal component of your table.
- Filters
    - Filters allow you to select which parts of your data to display.
- Marks
    - How Tableau displays data. Every mark corresponds to a row or rows.