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## Data Visualization in Tableau

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### 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 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.