Tableau Tutorial
What is Tableau?

Tableau is an application used to **create visualizations** and to **conduct data analysis**.
Example Exploratory Analysis: Chicago Crimes
Data Set

Dimensions

• Usually discrete categorical information (e.g. year, zip code)
• Tableau creates column or row headers for each of your dimensions

Measures

• Usually quantitative and numerical information (e.g. scores, prices)
• Tableau creates a continuous axis
• You can apply aggregations onto these measures (Sum, average, count etc...)

Both dimensions and measures can be discrete and continuous variables (except for Strings and Booleans)
Basic sorting, aggregation, and filtering example

What are the most common crimes in Chicago?
Applying color, creating formulas, other types of visualizations

How does the time of day influence crime rates?
Longitude, latitude, marks, and pages example

How do the crime patterns relate to the geography of Chicago? Are there areas that are known for specific kinds of crimes?
Review

- Remove aggregated data and blank rows
- Add header columns
- Flatten hierarchical headers

Flatten hierarchical headers to a single row

In general, Tableau Desktop expects only the first row in your Excel data to contain column headers. Data that contains multiple layers of column headers can cause problems during your analysis.

For example, suppose you have a table that contains one major header and multiple sub-headers.

<table>
<thead>
<tr>
<th>ID</th>
<th>Gender</th>
<th>School</th>
<th>Math</th>
<th>Science</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>West</td>
<td>90</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
<td>South</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>Central</td>
<td>50</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>Central</td>
<td>100</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>West</td>
<td>90</td>
<td>100</td>
<td>80</td>
</tr>
</tbody>
</table>

In this case, the hierarchy of headers must be flattened or removed. To do this, you can manually create a new column for each header in the hierarchy directly in your Excel data. Alternatively, connect to your Excel data from Tableau Desktop and then turn on Data Interpreter. Verify that your headers are flattened correctly. For more information about Data Interpreter, see Clean Your Data with Data Interpreter.
Review

Tableau will automatically generate dimensions, measures, and types but most are editable
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