

Communicating with Data – More Advanced Tableau

Dr. Ab Mosca (they/them)

Reminder

- Be prepared for prototype testing in class on Thursday!

Plan for Today

- Working with multiple datasets
- Customizing the look of a visualization
- Working with filters
- Conditional backgrounds
- Details on demand (external resources)

Want to follow
along?

- Everything used in this demo is available in superhero-demo.zip under in-class on the course website

Running example: superheroes



First dataset: superdata.csv

Tableau - Book1

Connections Add
superdata Text File

Files
superdata.csv superhero-wikis.csv

New Union

superdata

superdata.csv

Sort fields Data source order ▾

Show aliases Show hidden fields 17 rows

| Name | Alignment | Intelligence | Strength | Speed | Durability | Power | Combat | Universe |
|-----------------|-----------|--------------|----------|-------|------------|-------|--------|------------|
| Aquaman | good | | 63 | 80 | 50 | 80 | 65 | 80 DC |
| Batman | good | | 100 | 18 | 27 | 42 | 37 | 100 DC |
| Booster Gold | good | | 56 | 85 | 53 | 50 | 72 | 40 DC |
| Captain America | good | | 63 | 19 | 35 | 56 | 46 | 100 Marvel |
| Captain Marvel | good | | 100 | 100 | 67 | 95 | 62 | 56 DC |
| Deadpool | neutral | | 50 | 15 | 30 | 100 | 100 | 100 Marvel |
| Flash | good | | 63 | 10 | 100 | 50 | 57 | 32 DC |
| Iron Fist | good | | 75 | 23 | 35 | 42 | 43 | 100 Marvel |
| Iron Man | good | | 100 | 85 | 58 | 85 | 100 | 64 Marvel |
| Loki | bad | | 88 | 57 | 47 | 85 | 85 | 56 Marvel |
| Red Tornado | good | | 75 | 38 | 67 | 60 | 92 | 40 DC |
| Robin | good | | 88 | 11 | 27 | 28 | 32 | 85 DC |
| Spider-Man | good | | 88 | 55 | 60 | 74 | 58 | 85 Marvel |
| Superman | good | | 100 | 100 | 100 | 100 | 94 | 85 DC |

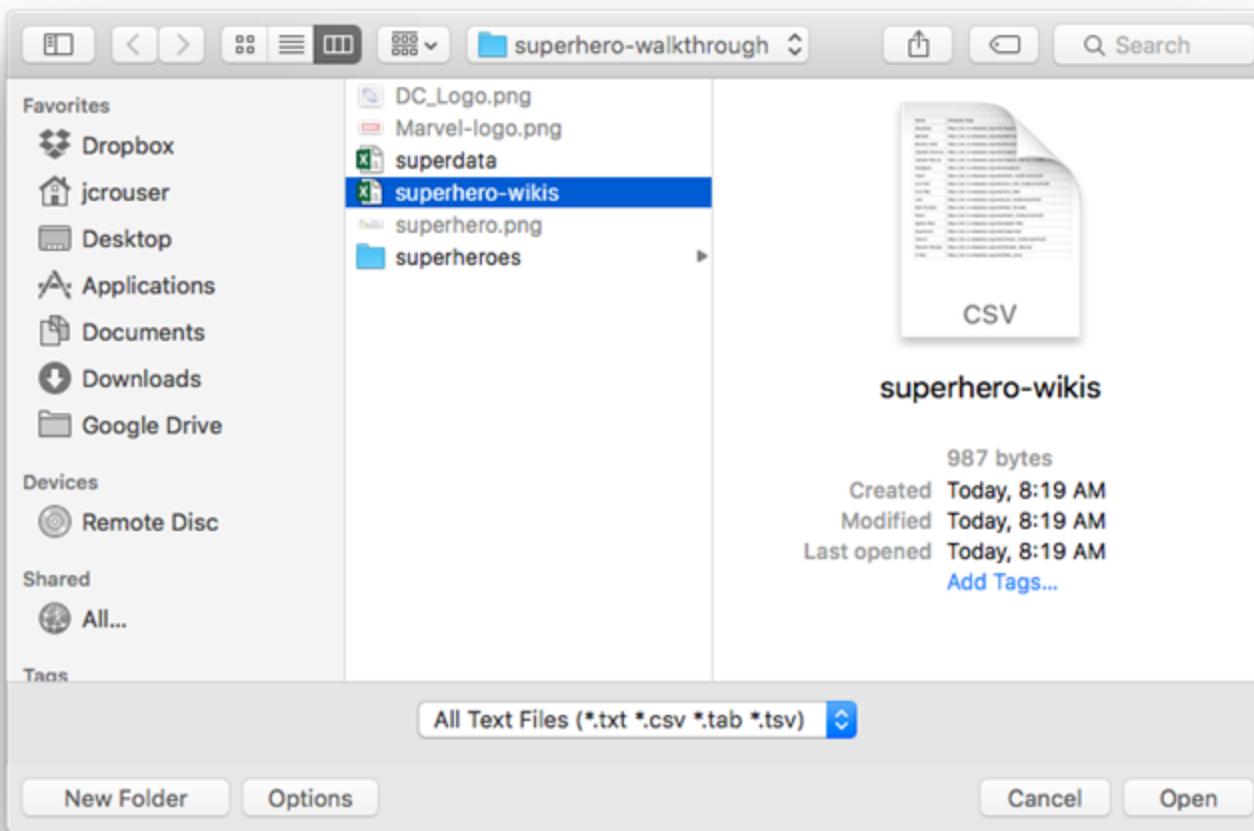
Data Source Sheet 1

Adding more datasets

The screenshot shows the Tableau Data Source dialog with the 'Add' button highlighted. A dropdown menu is open under 'To a File' with 'Text file' selected. The main pane displays a table of superhero statistics from 'superdata.csv'. The table has columns: Name, Good/Bad, Power, Combat, DC/Marvel, and Universe.

| Name | Good/Bad | Power | Combat | DC/Marvel | Universe |
|-------------|----------|-------|--------|-----------|----------|
| Iron Fist | good | 75 | 23 | 35 | 42 |
| Iron Man | good | 100 | 85 | 58 | 85 |
| Loki | bad | 88 | 57 | 47 | 85 |
| Red Tornado | good | 75 | 38 | 67 | 60 |
| Robin | good | 88 | 11 | 27 | 28 |
| Spider-Man | good | 88 | 55 | 60 | 74 |
| Superman | good | 100 | 100 | 100 | 100 |

Adding more datasets



Second dataset: superhero-wikis.csv

Tableau - Book1

Connections

- superdata
- superhero-wikis

Files

- superdata.csv
- superhero-wikis.csv
- New Union

superhero-wikis.csv (Multiple Connections)

Connection: Live | Extract

Filters: 0 | Add

Sort fields: Data source order

Show aliases | Show hidden fields | 17 rows

| Name | Wikipedia Page |
|-----------------|---|
| Aquaman | https://en.m.wikipedia.org/wiki/Aquaman |
| Batman | https://en.m.wikipedia.org/wiki/Batman |
| Booster Gold | https://en.m.wikipedia.org/wiki/Booster_Gold |
| Captain America | https://en.m.wikipedia.org/wiki/Captain_America |
| Captain Marvel | https://en.m.wikipedia.org/wiki/Captain_Marvel,_%28DC_Comics%29 |
| Deadpool | https://en.m.wikipedia.org/wiki/Deadpool |
| Flash | https://en.m.wikipedia.org/wiki/Flash_%28comics%29 |
| Iron Fist | https://en.m.wikipedia.org/wiki/Iron_Fist,_%28comics%29 |
| Iron Man | https://en.m.wikipedia.org/wiki/Iron_Man |
| Loki | https://en.m.wikipedia.org/wiki/Loki,_%28comics%29 |

Joining the two

Tableau - superhero

superdata.csv+ (Multiple Connections)

Connection Live Extract

Filters 0 | Add

superdata.csv

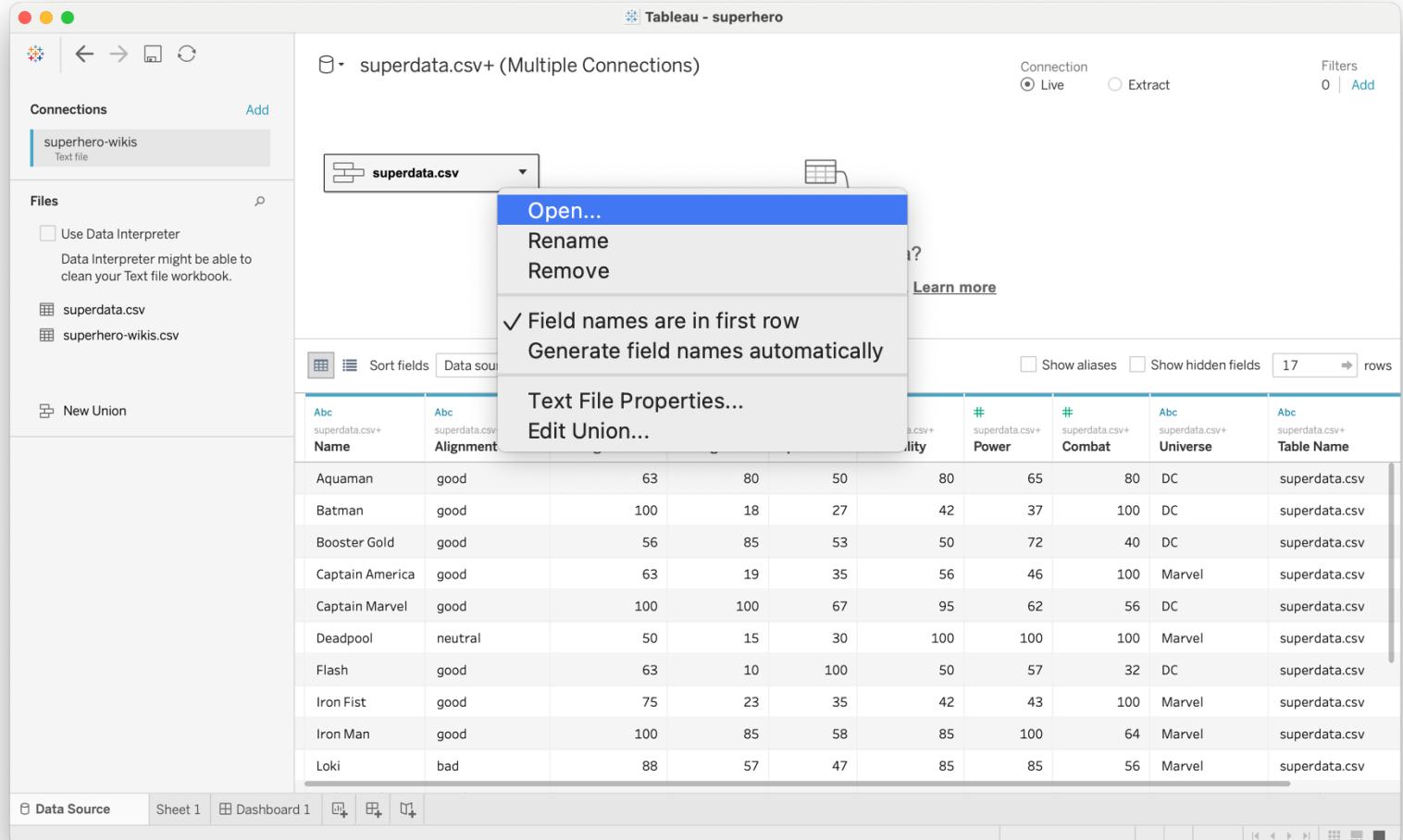
Open... Rename Remove

✓ Field names are in first row Generate field names automatically

Text File Properties... Edit Union...

| Name | Alignment | Power | # | Combat | # | Universe | Table Name |
|-----------------|-----------|-------|-----|--------|-----|----------|--------------------------|
| Aquaman | good | 63 | 80 | 50 | 80 | 65 | 80 DC superdata.csv |
| Batman | good | 100 | 18 | 27 | 42 | 37 | 100 DC superdata.csv |
| Booster Gold | good | 56 | 85 | 53 | 50 | 72 | 40 DC superdata.csv |
| Captain America | good | 63 | 19 | 35 | 56 | 46 | 100 Marvel superdata.csv |
| Captain Marvel | good | 100 | 100 | 67 | 95 | 62 | 56 DC superdata.csv |
| Deadpool | neutral | 50 | 15 | 30 | 100 | 100 | 100 Marvel superdata.csv |
| Flash | good | 63 | 10 | 100 | 50 | 57 | 32 DC superdata.csv |
| Iron Fist | good | 75 | 23 | 35 | 42 | 43 | 100 Marvel superdata.csv |
| Iron Man | good | 100 | 85 | 58 | 85 | 100 | 64 Marvel superdata.csv |
| Loki | bad | 88 | 57 | 47 | 85 | 85 | 56 Marvel superdata.csv |

Data Source Sheet 1 Dashboard 1



Joining the two

Tableau - superhero

superdata.csv+ (Multiple Connections)

superdata.csv is made of 2 tables. ⚡

superdata.csv+ → superhero-wikis.csv

Join

Inner Left Right Full Outer

Name = Name (superher...)

Show aliases Show hidden fields 17 rows

| Name | Alignment | Intelligence | Strength | Speed | Durability | Power | Combat | Universe | Table Name | |
|-----------------|-----------|--------------|----------|-------|------------|-------|--------|----------|------------|---------------|
| Aquaman | good | | 63 | 80 | 50 | 80 | 65 | 80 | DC | superdata.csv |
| Batman | good | | 100 | 18 | 27 | 42 | 37 | 100 | DC | superdata.csv |
| Booster Gold | good | | 56 | 85 | 53 | 50 | 72 | 40 | DC | superdata.csv |
| Captain America | good | | 63 | 19 | 35 | 56 | 46 | 100 | Marvel | superdata.csv |
| Captain Marvel | good | | 100 | 100 | 67 | 95 | 62 | 56 | DC | superdata.csv |
| Deadpool | neutral | | 50 | 15 | 30 | 100 | 100 | 100 | Marvel | superdata.csv |
| Flash | good | | 63 | 10 | 100 | 50 | 57 | 32 | DC | superdata.csv |
| Iron Fist | good | | 75 | 23 | 35 | 42 | 43 | 100 | Marvel | superdata.csv |
| Iron Man | good | | 100 | 85 | 58 | 85 | 100 | 64 | Marvel | superdata.csv |
| Loki | bad | | 88 | 57 | 47 | 85 | 85 | 56 | Marvel | superdata.csv |

Data Source Sheet 1 Dashboard 1

A screenshot of the Tableau desktop application. The interface shows a sidebar on the left with 'Connections' (superhero-wikis) and 'Files' (superdata.csv, superhero-wikis.csv). A 'New Union' section is also present. The main workspace displays a joined dataset from 'superdata.csv+' and 'superhero-wikis.csv'. A 'Join' dialog is open, showing four options: Inner, Left, Right, and Full Outer. The 'Left' option is selected. The data view includes columns for Name, Alignment, Intelligence, Strength, Speed, Durability, Power, Combat, Universe, and Table Name. The table contains 17 rows of superhero data, such as Aquaman, Batman, and Iron Man, with their respective stats and universe information.

Joining the two

Tableau - superhero

superhero-wikis Text file

superdata.csv

superhero-wikis.csv

New Union

Strength Speed Durability Power Combat Universe Table Name

| # | # | # | # | # | Abc | Abc | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|
| superdata.csv+ | Table Name |
| 63 | 80 | 50 | 80 | 65 | 80 | DC | superdata.csv |
| 100 | 18 | 27 | 42 | 37 | 100 | DC | superdata.csv |
| 56 | 85 | 53 | 50 | 72 | 40 | DC | superdata.csv |
| 63 | 19 | 35 | 56 | 46 | 100 | Marvel | superdata.csv |
| 100 | 100 | 67 | 95 | 62 | 56 | DC | superdata.csv |
| 50 | 15 | 30 | 100 | 100 | 100 | Marvel | superdata.csv |
| 63 | 10 | 100 | 50 | 57 | 32 | DC | superdata.csv |
| 75 | 23 | 35 | 42 | 43 | 100 | Marvel | superdata.csv |
| 100 | 85 | 58 | 85 | 100 | 64 | Marvel | superdata.csv |
| 88 | 57 | 47 | 85 | 85 | 56 | Marvel | superdata.csv |

Need more data?
Drag tables here to relate them. [Learn more](#)

Show aliases Show hidden fields 17 rows

| Abc | Abc |
|----------------------------|--|
| superhero-wikis.csv | superhero-wikis.csv |
| Name (superhero-wikis.csv) | Wikipedia Page |
| Aquaman | https://en.m.wikipedia... |
| Batman | https://en.m.wikipedia... |
| Booster Gold | https://en.m.wikipedia... |
| Captain America | https://en.m.wikipedia... |
| Captain Marvel | https://en.m.wikipedia... |
| Deadpool | https://en.m.wikipedia... |
| Flash | https://en.m.wikipedia... |
| Iron Fist | https://en.m.wikipedia... |
| Iron Man | https://en.m.wikipedia... |
| Loki | https://en.m.wikipedia... |

Hiding unnecessary data

Tableau - superhero

superhero-wikis Text file

superdata.csv

superhero-wikis.csv

New Union

Strength Speed Durability Power Combat Universe Table Name Name Wikipedia Page

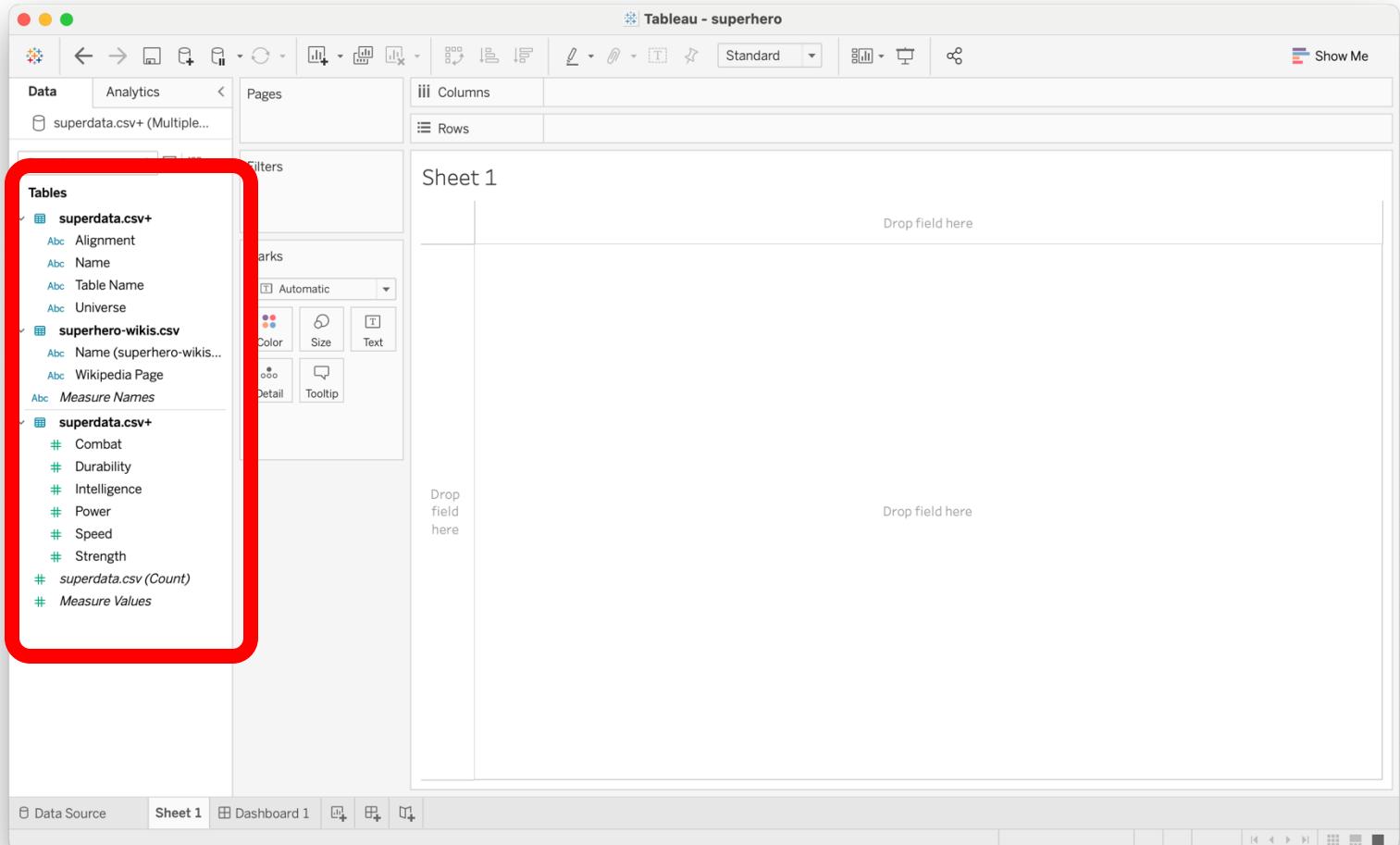
| # | # | # | # | # | Abc | Abc | Abc | Abc |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------|--|
| superdata.csv+ | superhero-wikis.csv | superhero-wikis.csv |
| Strength | Speed | Durability | Power | Combat | Universe | Table Name | Name (superhero-...) | Wikipedia Page |
| 63 | 80 | 50 | 80 | 65 | 80 | DC | Aquaman | Rename |
| 100 | 18 | 27 | 42 | 37 | 100 | DC | Batman | Copy Values |
| 56 | 85 | 53 | 50 | 72 | 40 | DC | Booster Go | Hide |
| 63 | 19 | 35 | 56 | 46 | 100 | Marvel | Captain Am | |
| 100 | 100 | 67 | 95 | 62 | 56 | DC | Captain Ma | |
| 50 | 15 | 30 | 100 | 100 | 100 | Marvel | Deadpool | |
| 63 | 10 | 100 | 50 | 57 | 32 | DC | Flash | |
| 75 | 23 | 35 | 42 | 43 | 100 | Marvel | Iron Fist | Pivot (select multiple fields) |
| 100 | 85 | 58 | 85 | 100 | 64 | Marvel | Iron Man | Describe... |
| 88 | 57 | 47 | 85 | 85 | 56 | Marvel | Loki | https://en.m.wikipedia... |

Need more data?
Drag tables here to relate them. [Learn more](#)

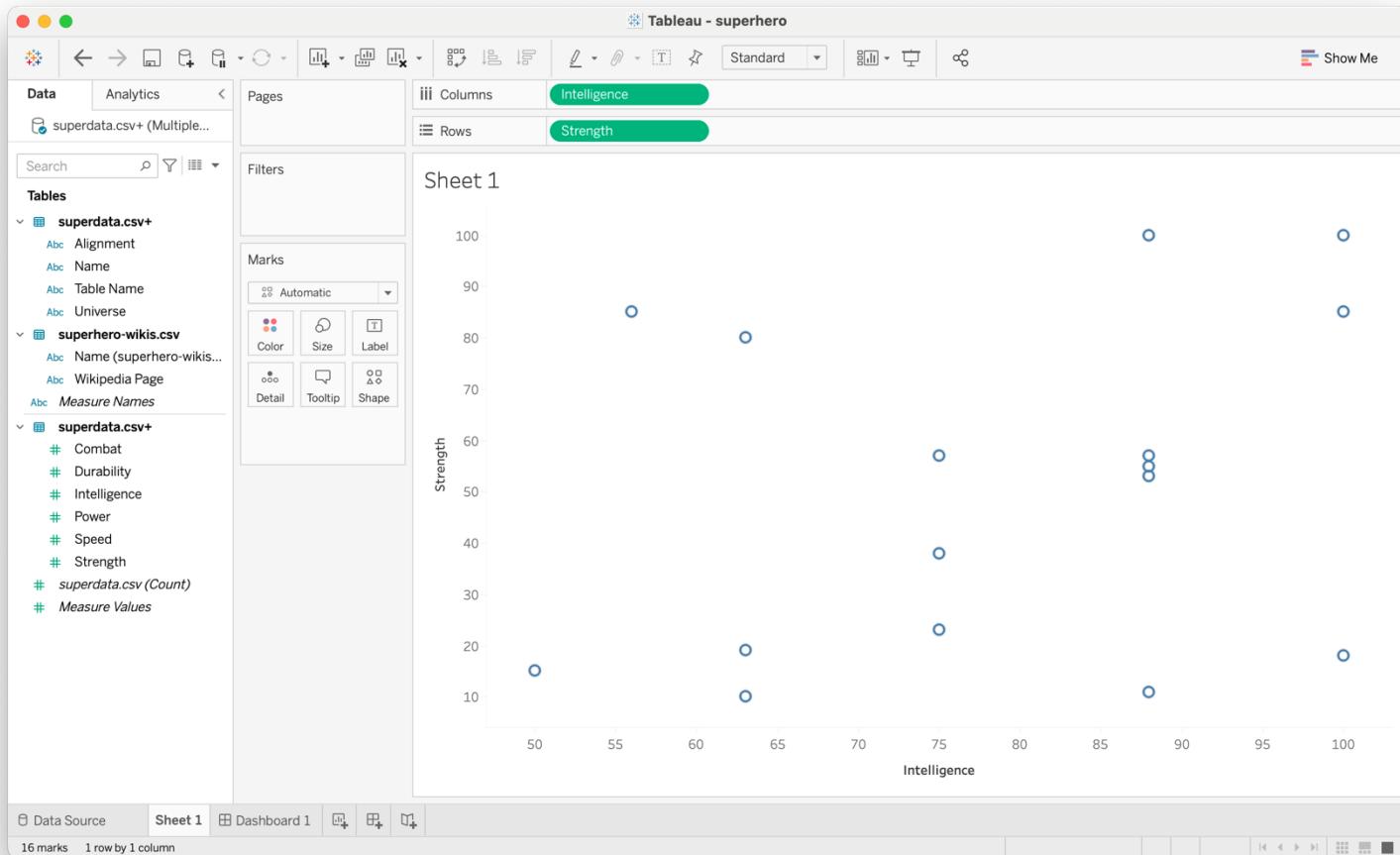
Show aliases Show hidden fields 17 rows

Data Source Sheet 1 Dashboard 1

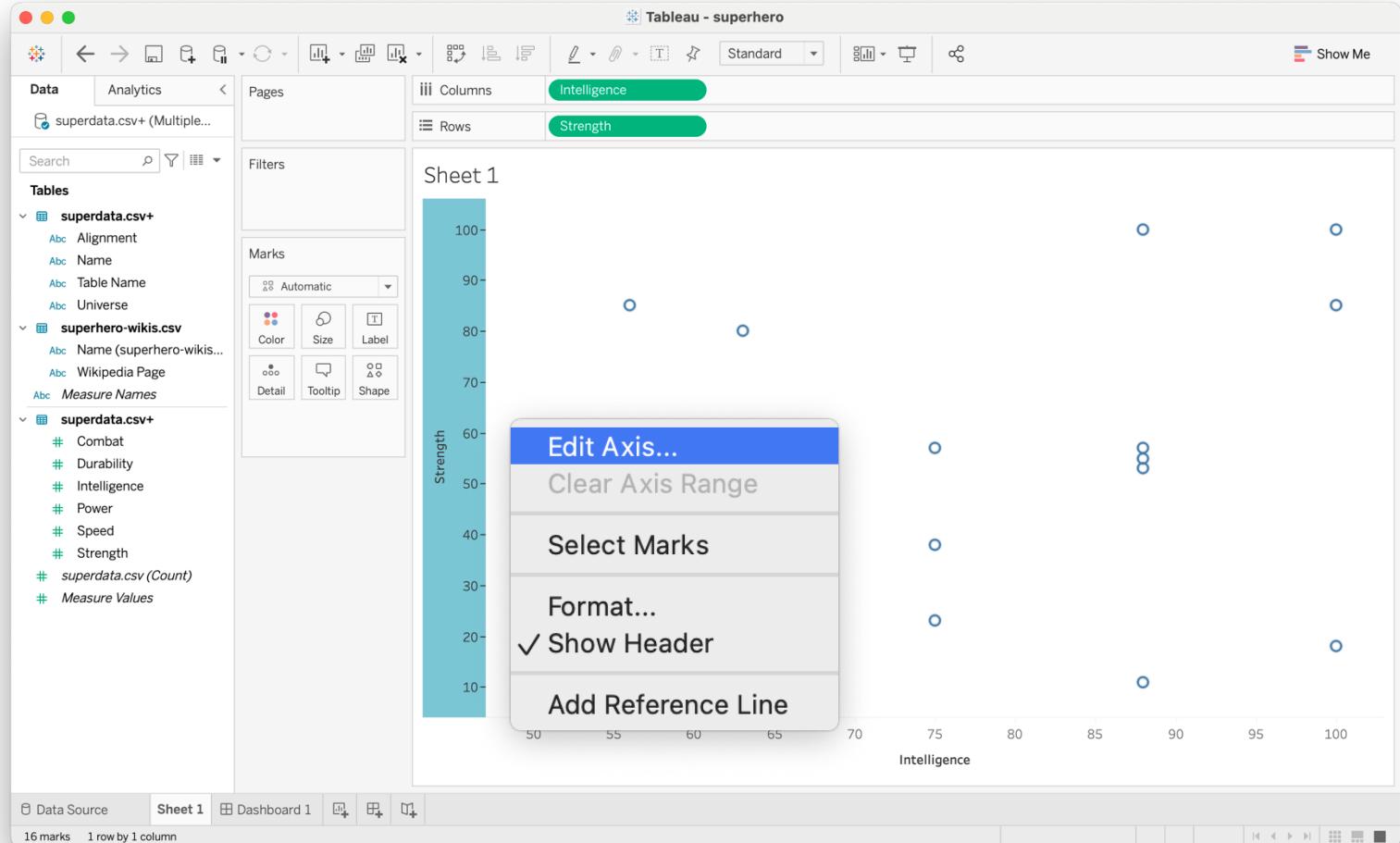
Over to Sheet1



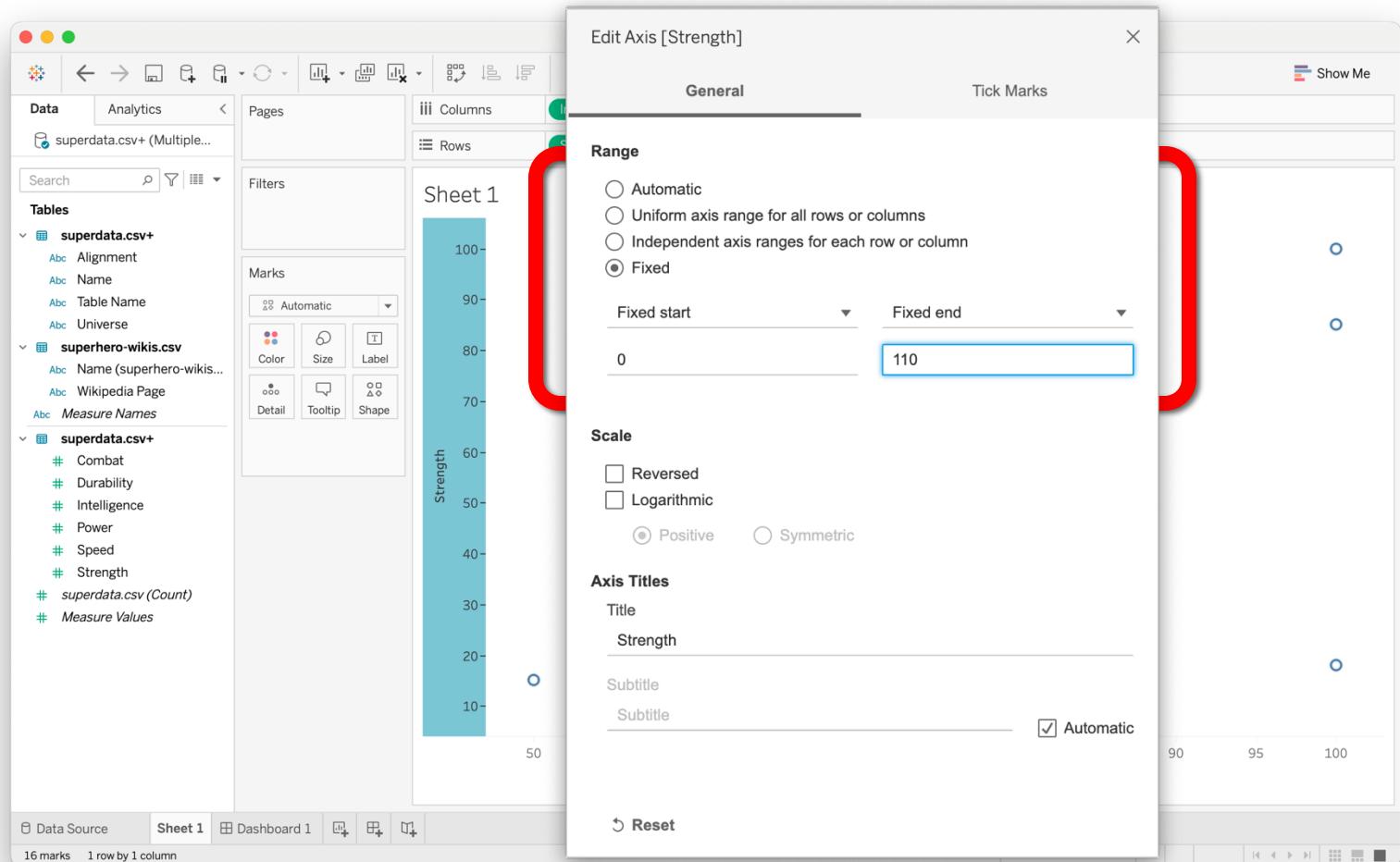
Simple scatterplot



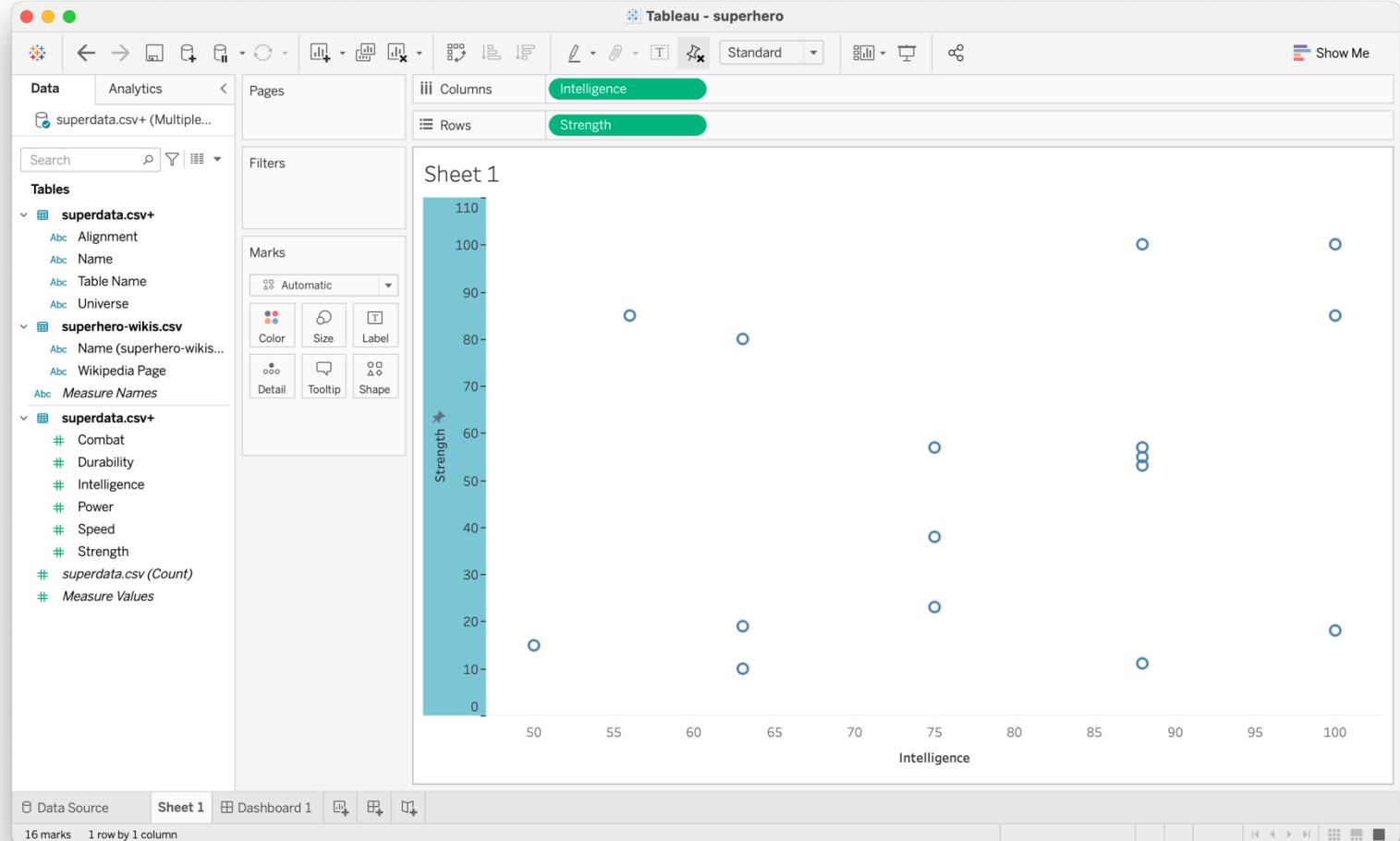
Editing axis values



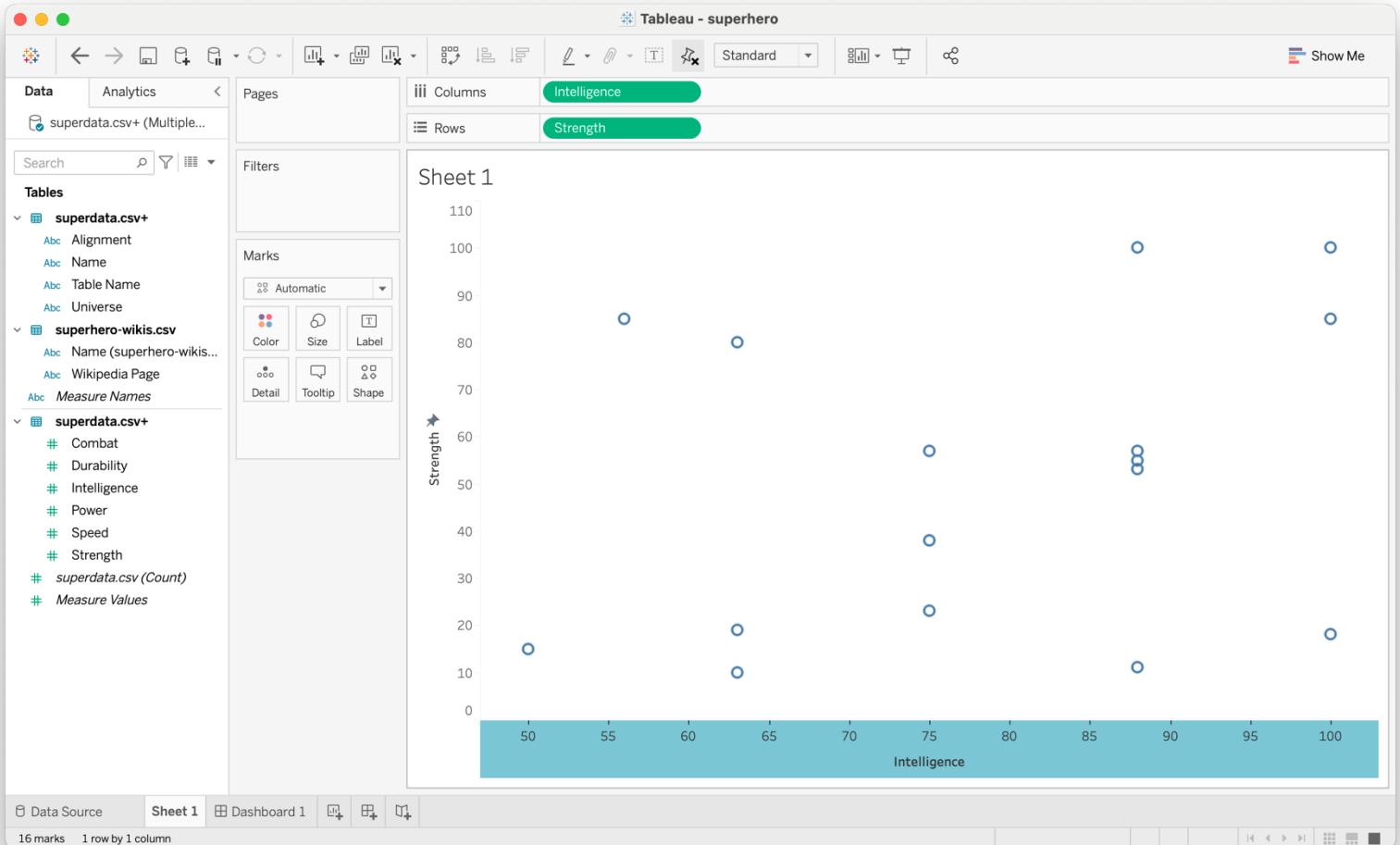
Editing axis values



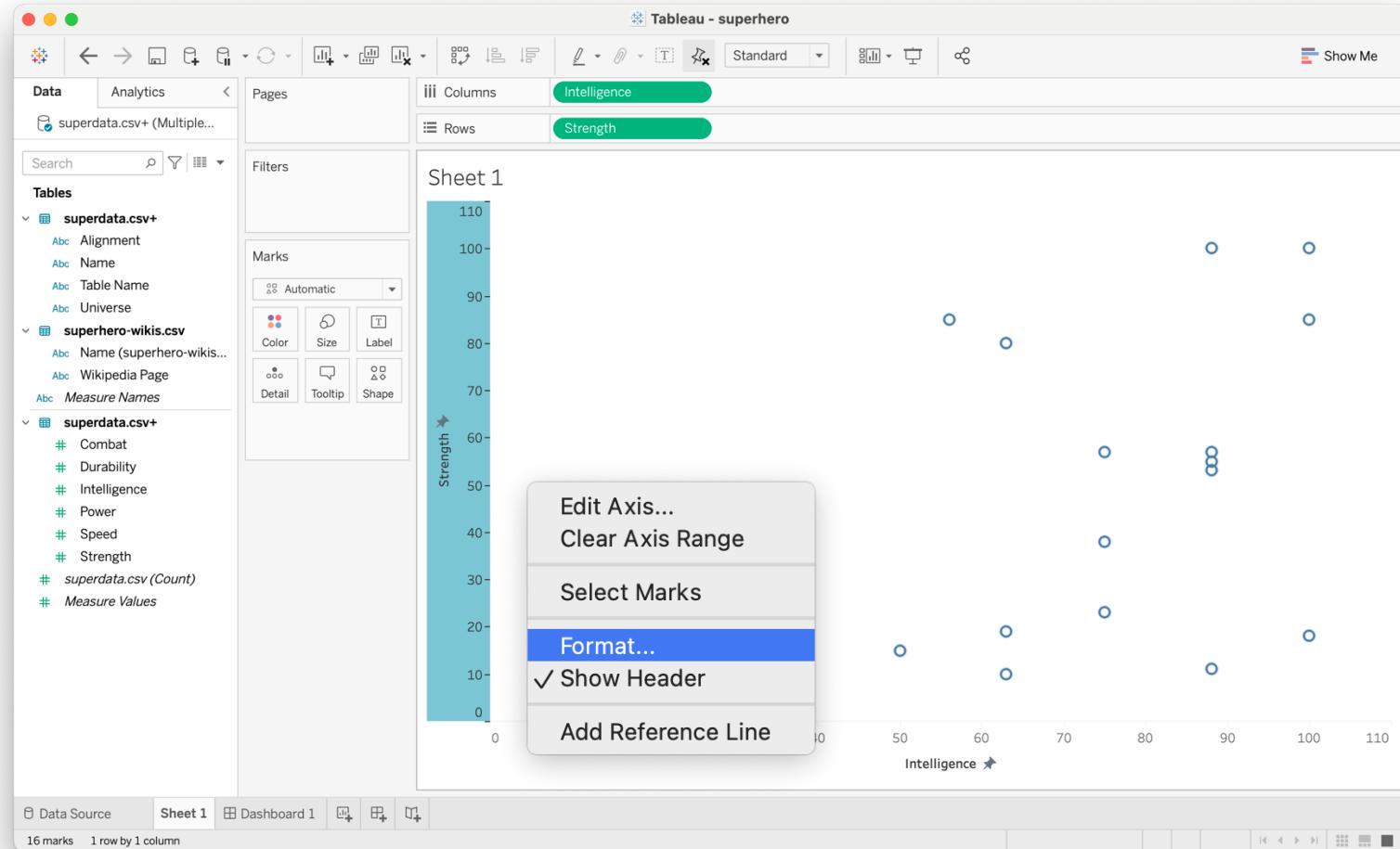
Editing axis values



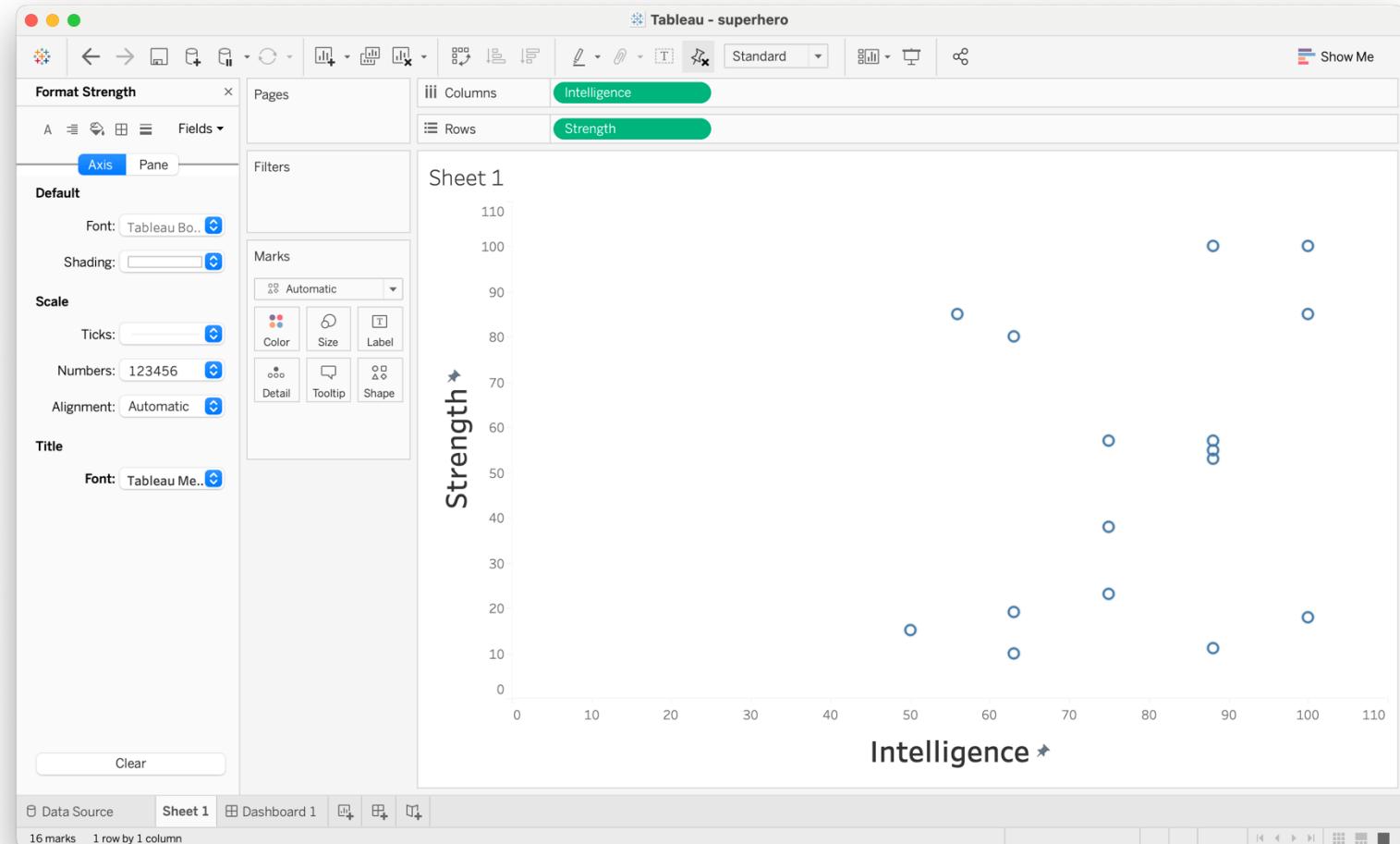
Editing axis values



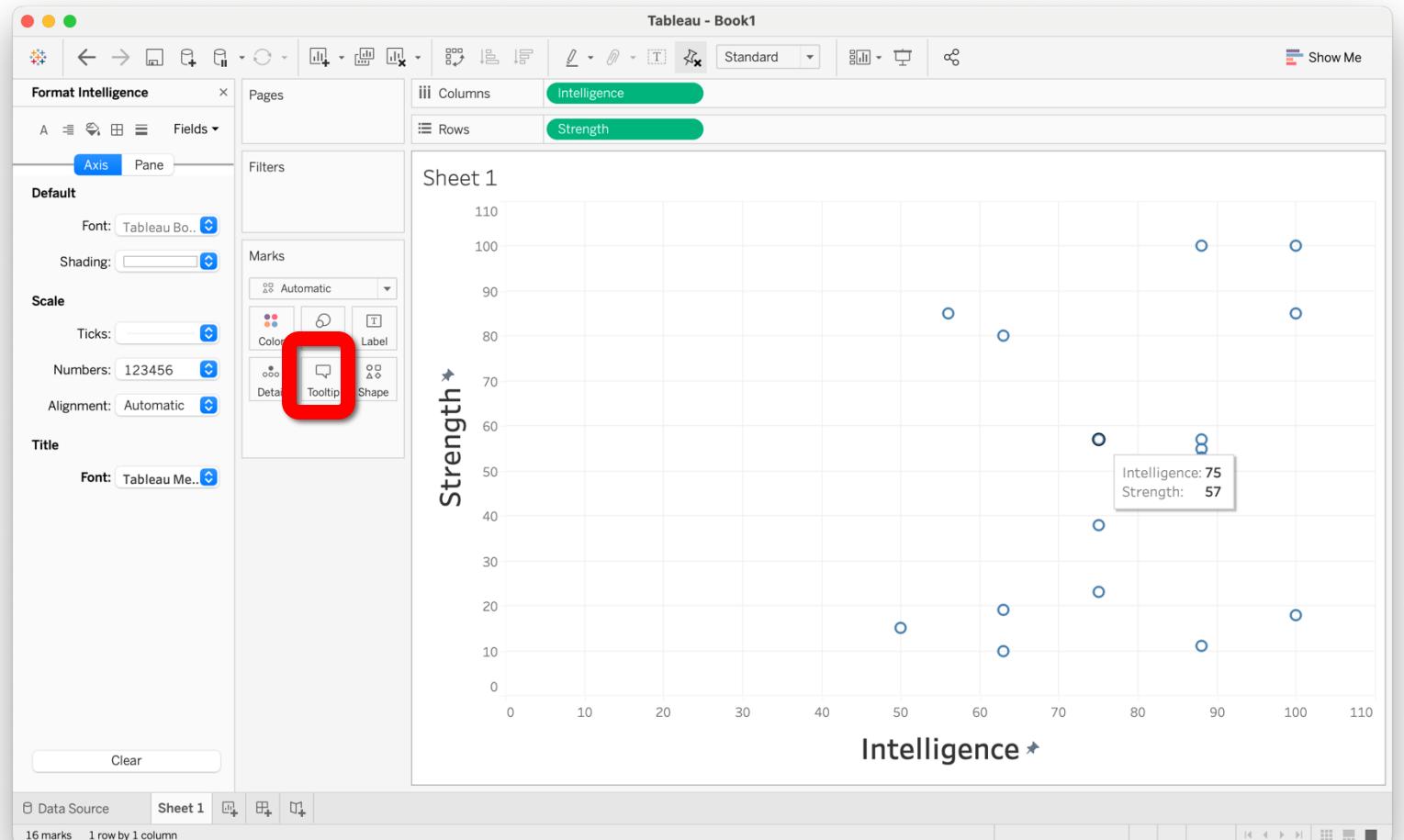
Format axis title



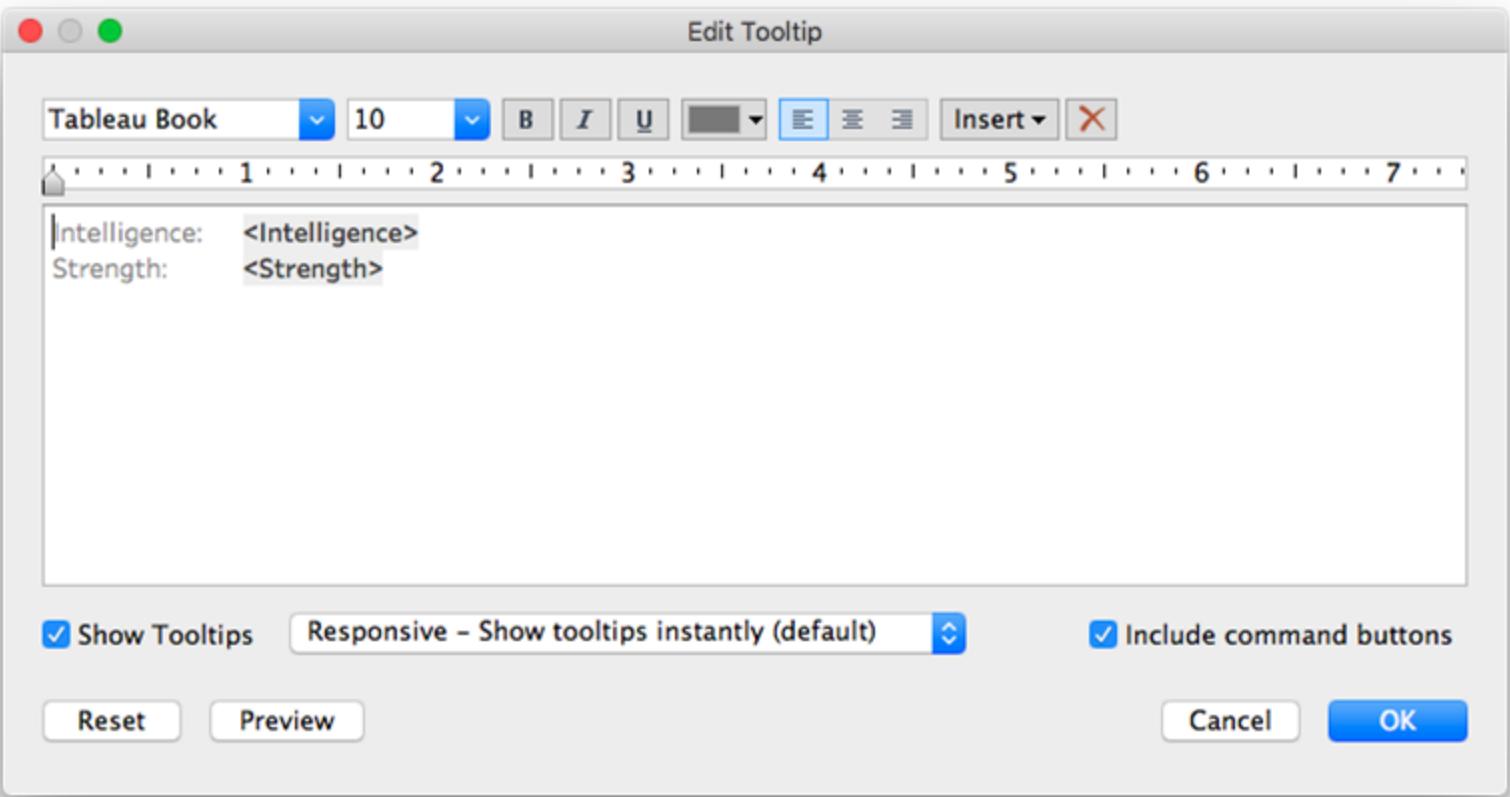
Format axis title



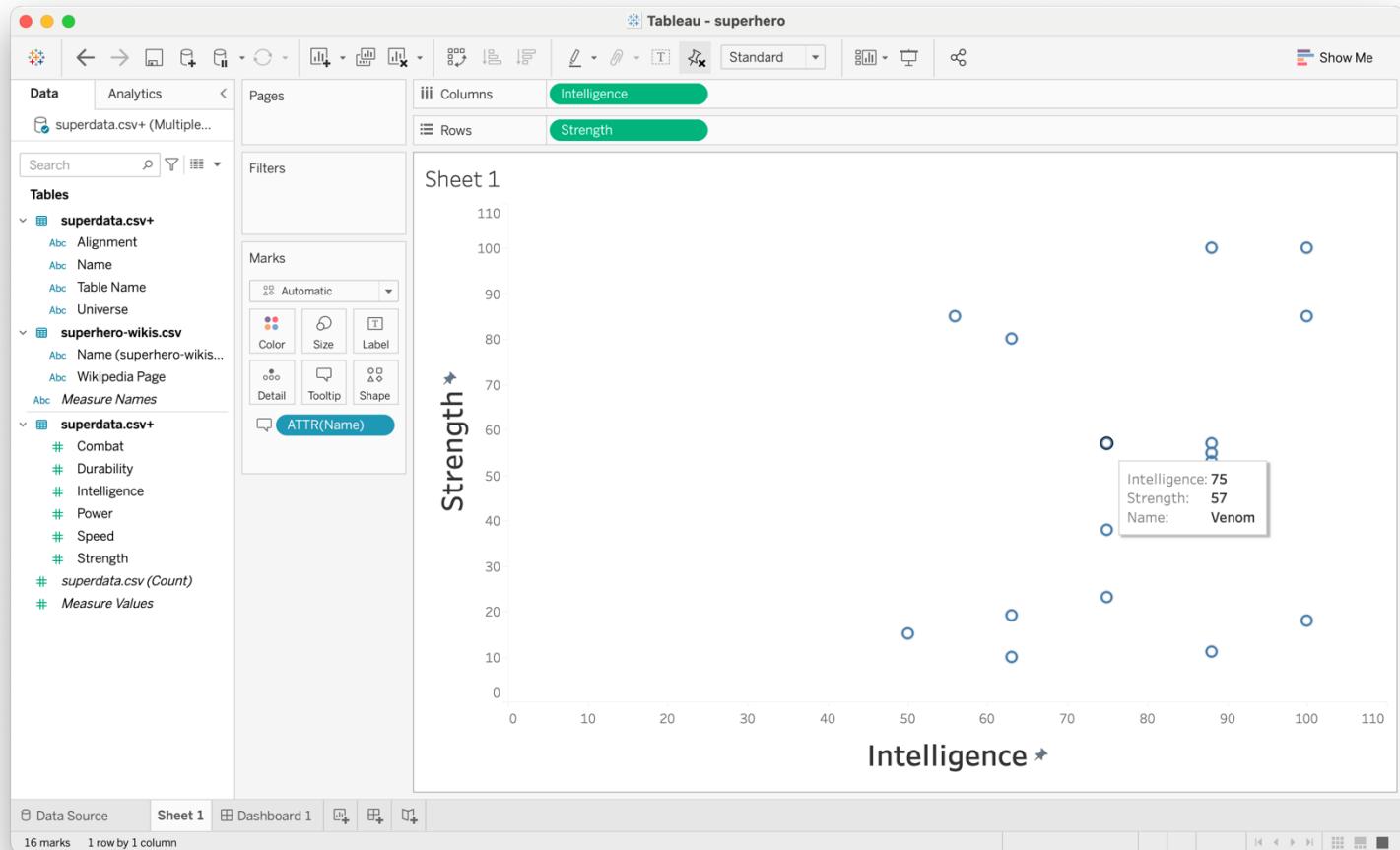
More interesting tooltips



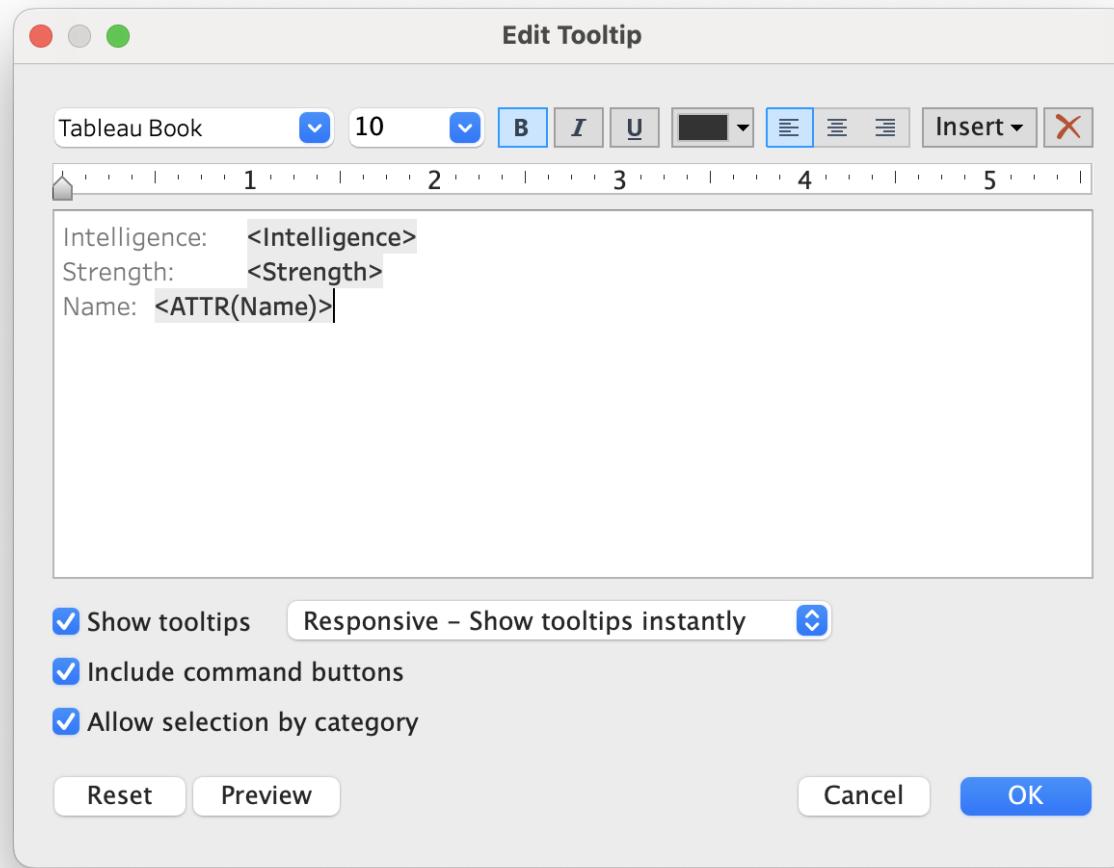
More interesting tooltips



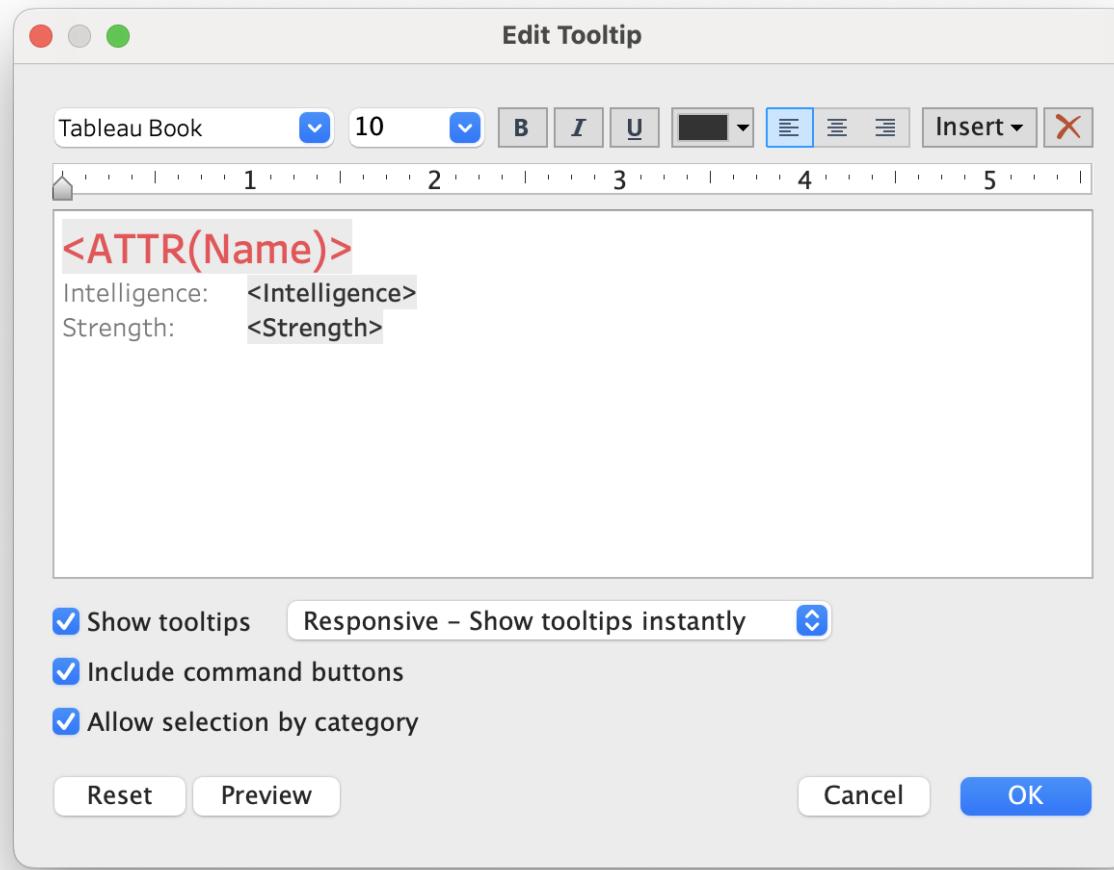
More interesting tooltips



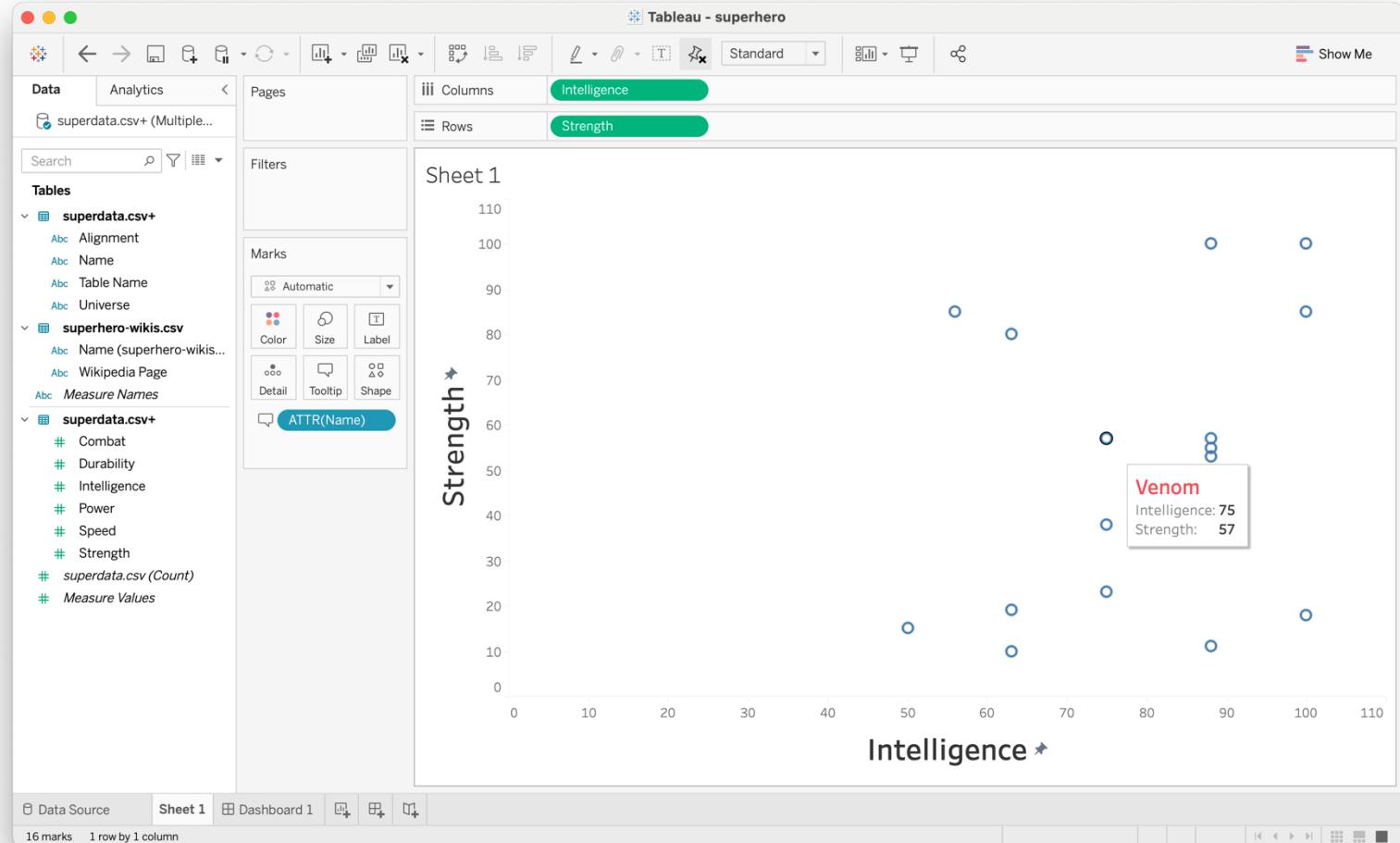
More interesting tooltips



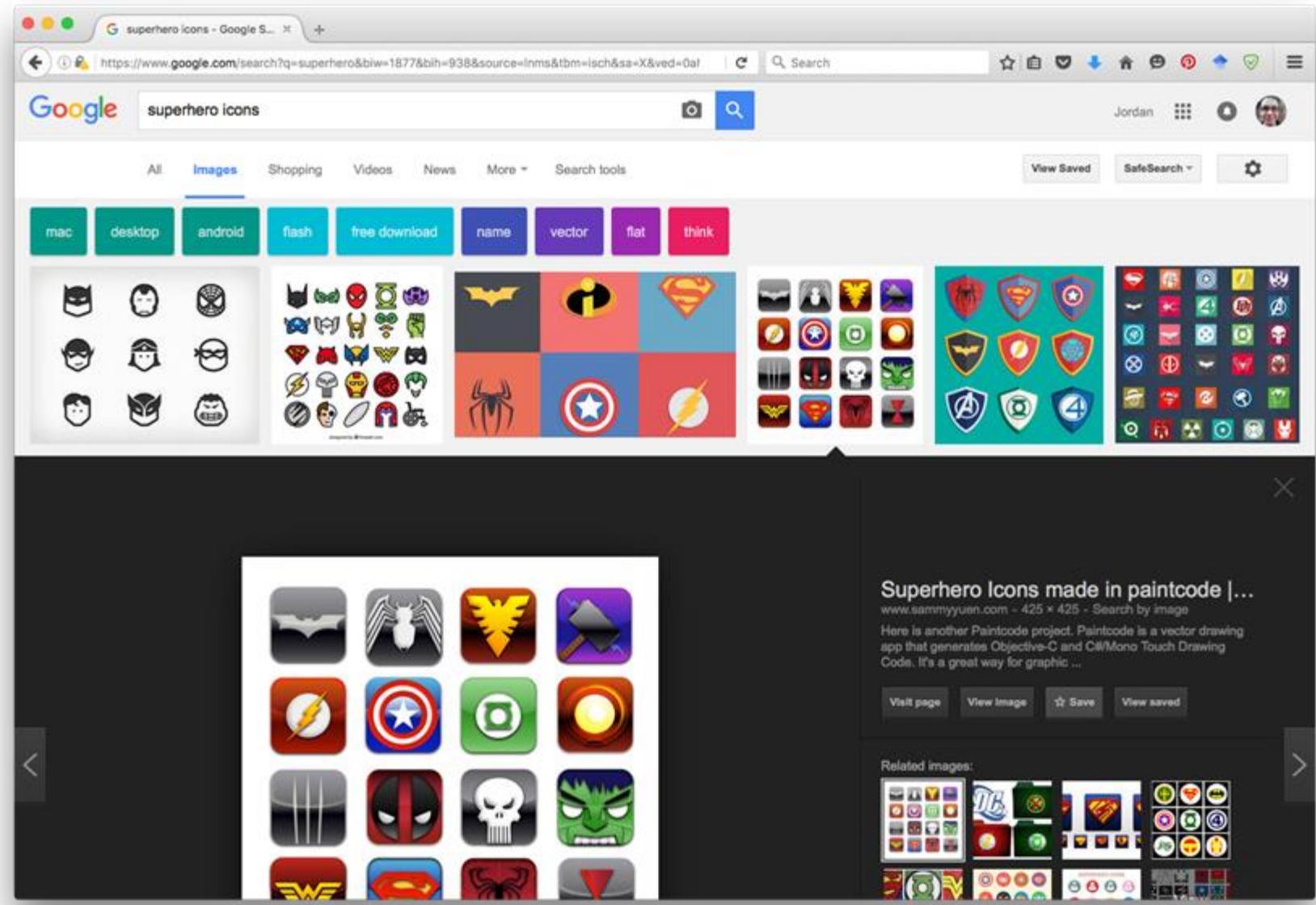
More interesting tooltips



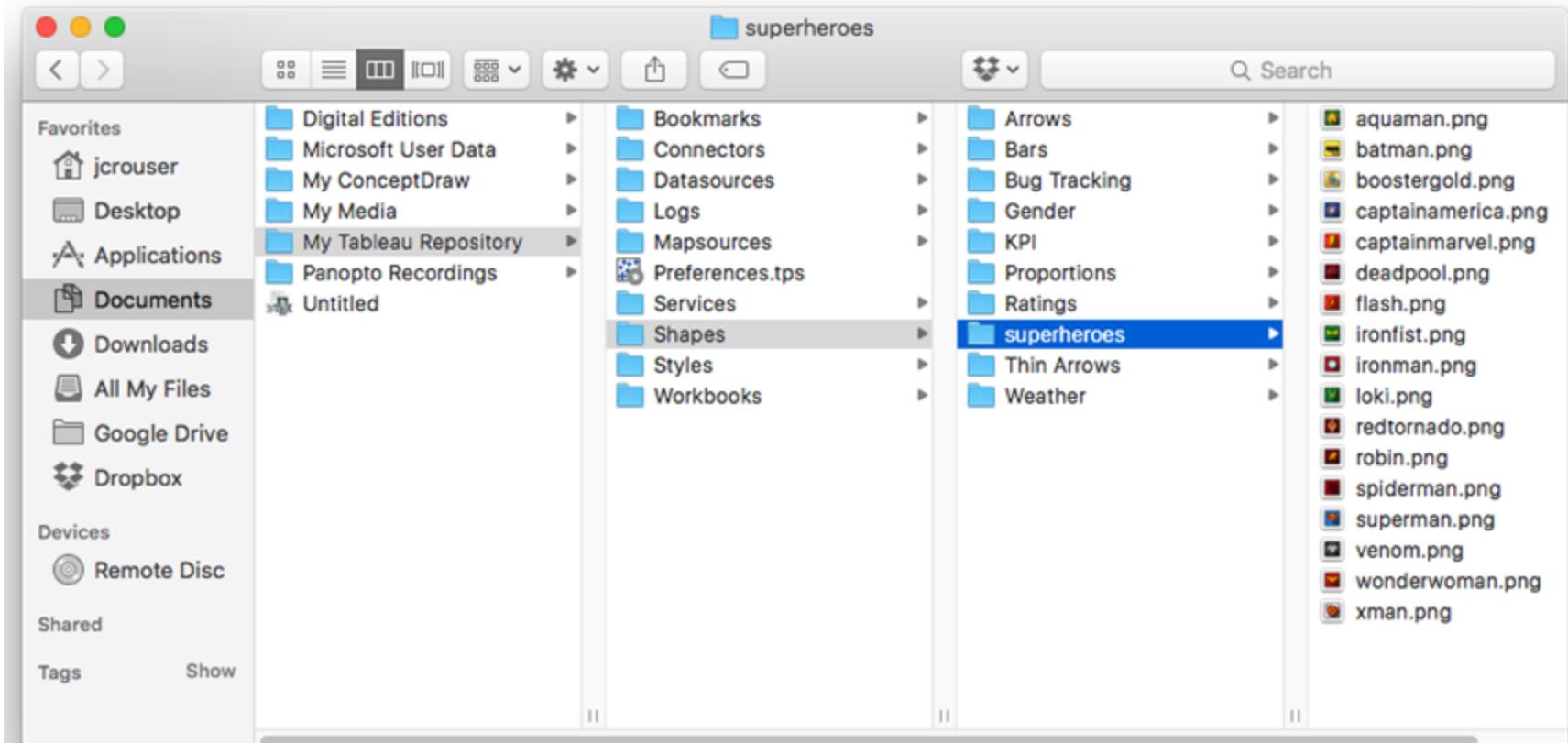
More interesting tooltips



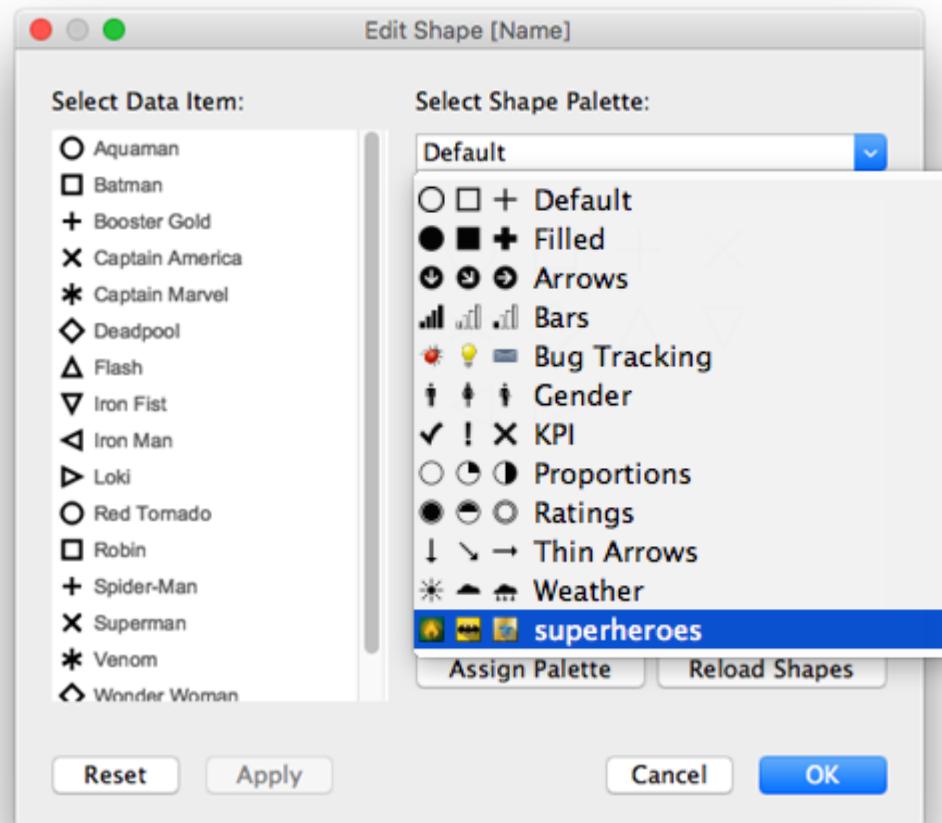
Adding custom shapes



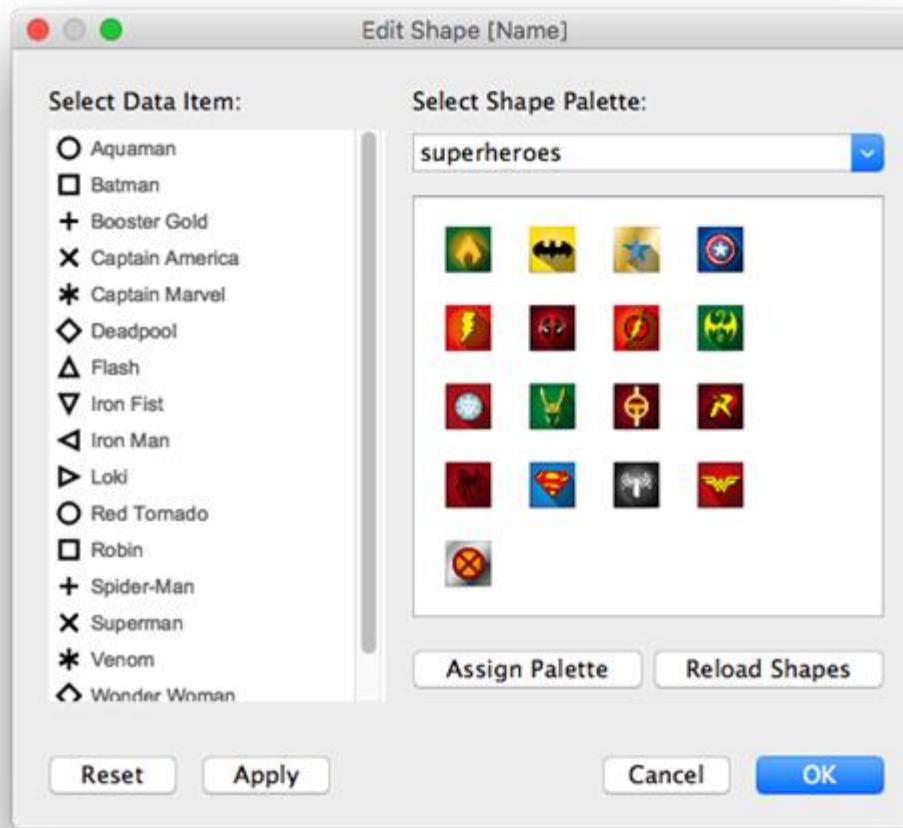
Adding custom shapes



Adding custom shapes



Adding custom shapes



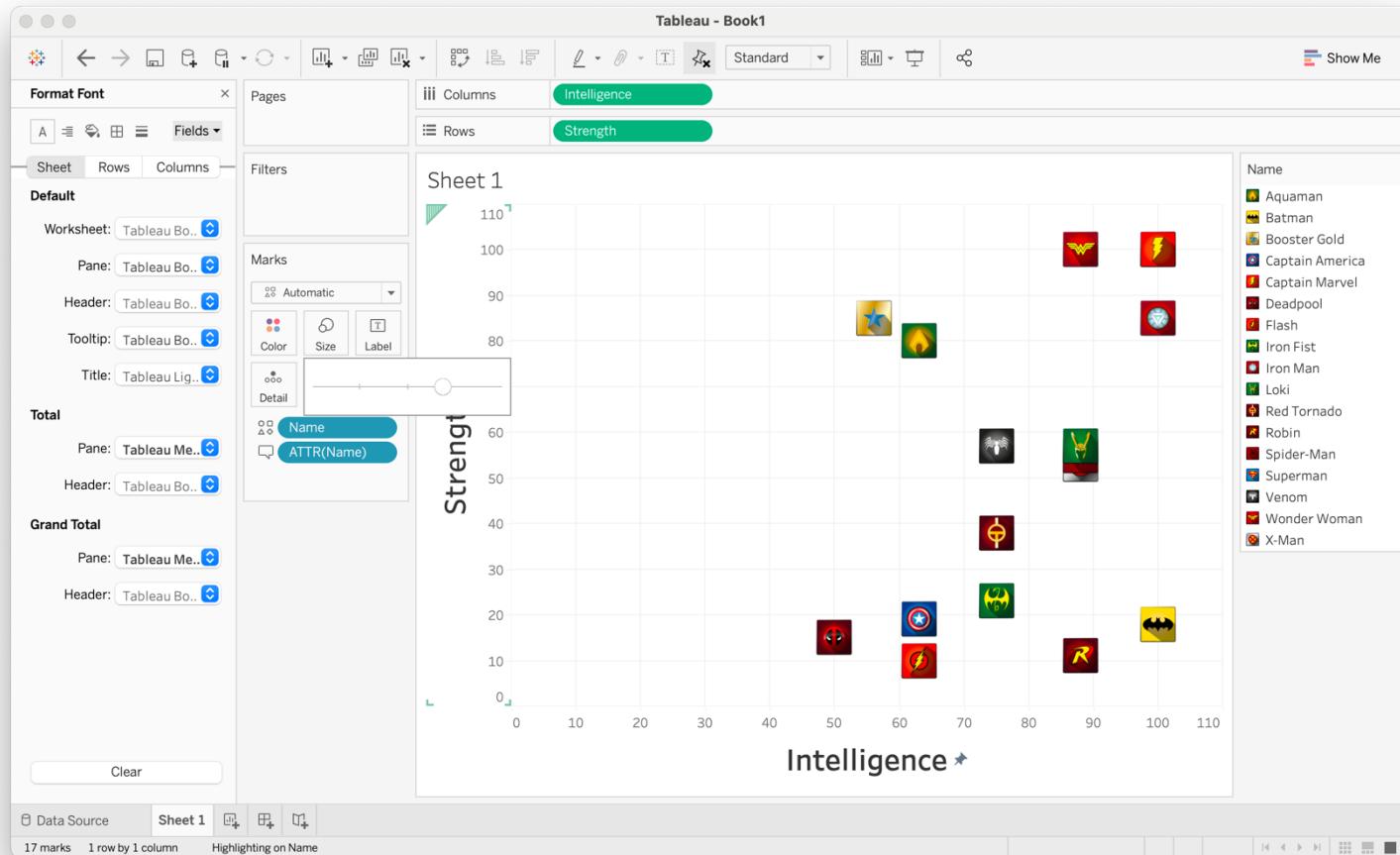
Adding custom shapes



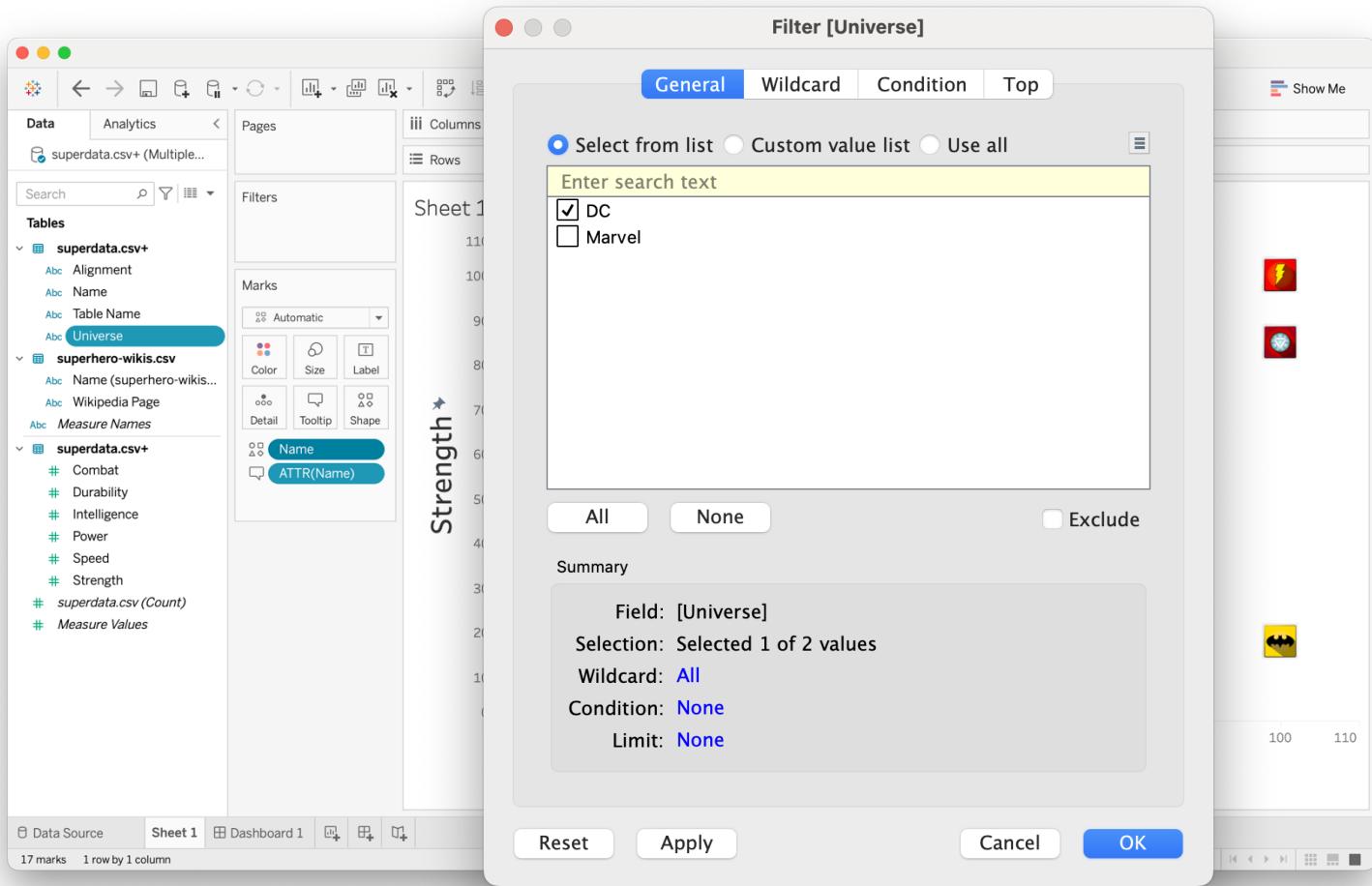
Adding custom shapes



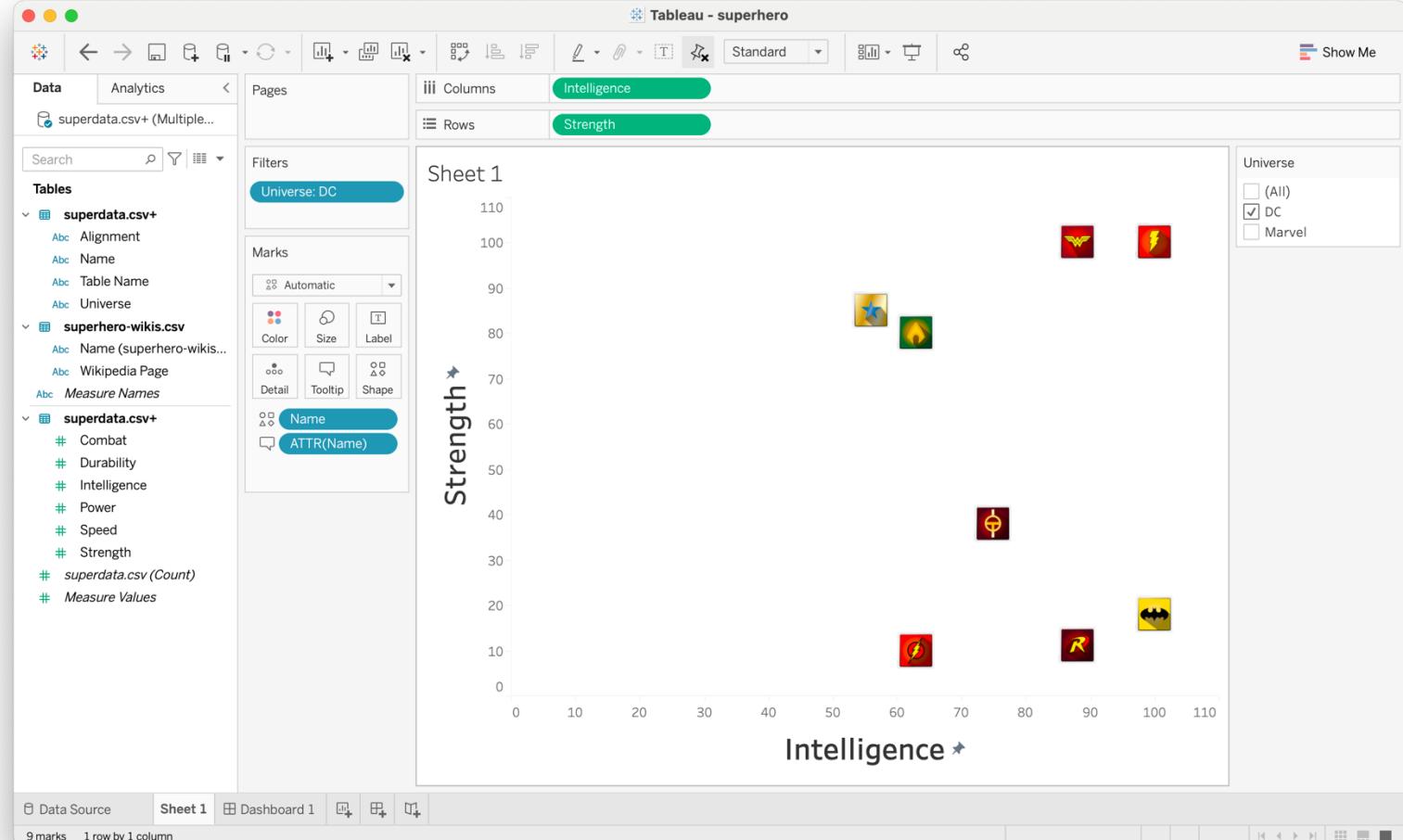
Scatterplot with custom shapes



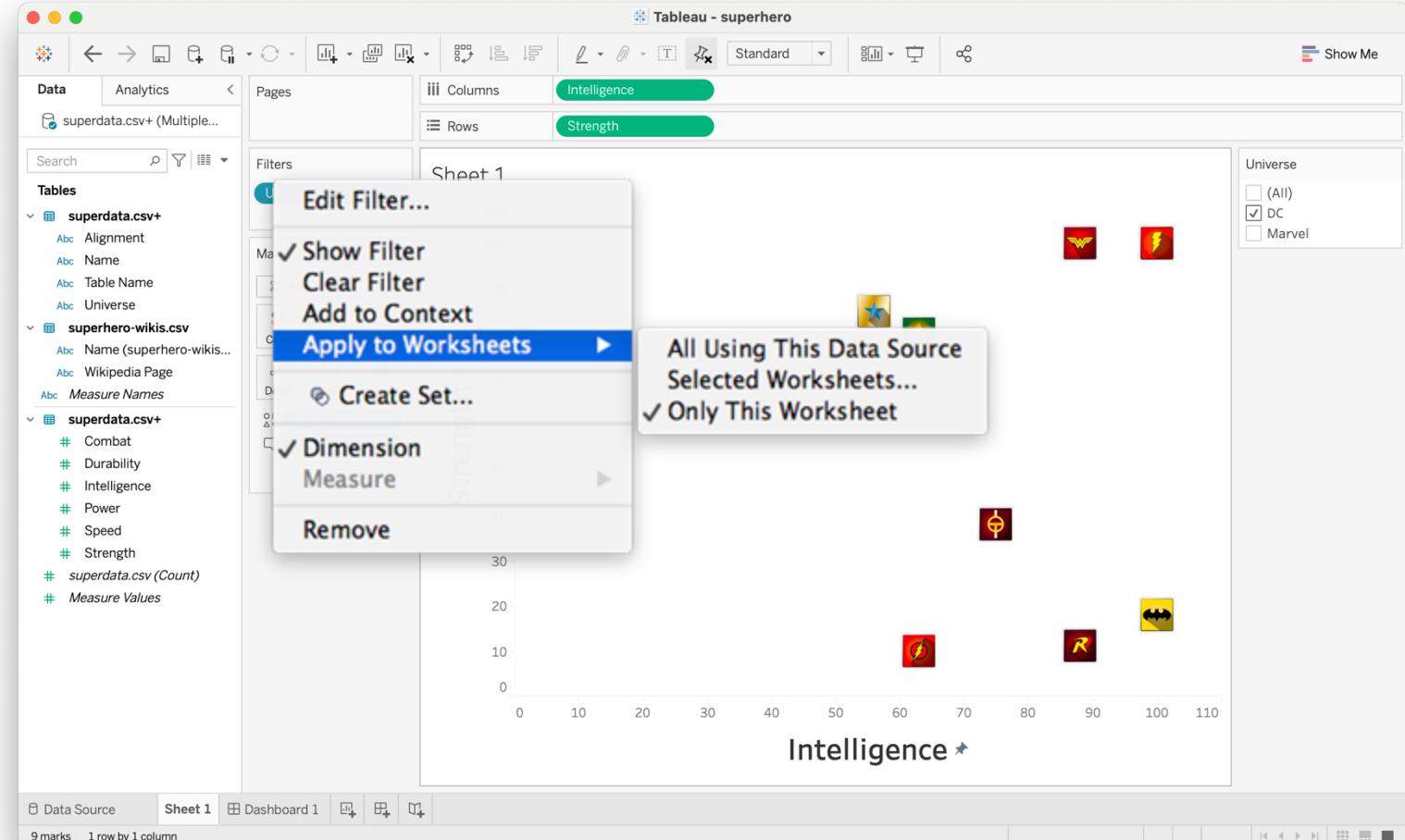
Working with filters



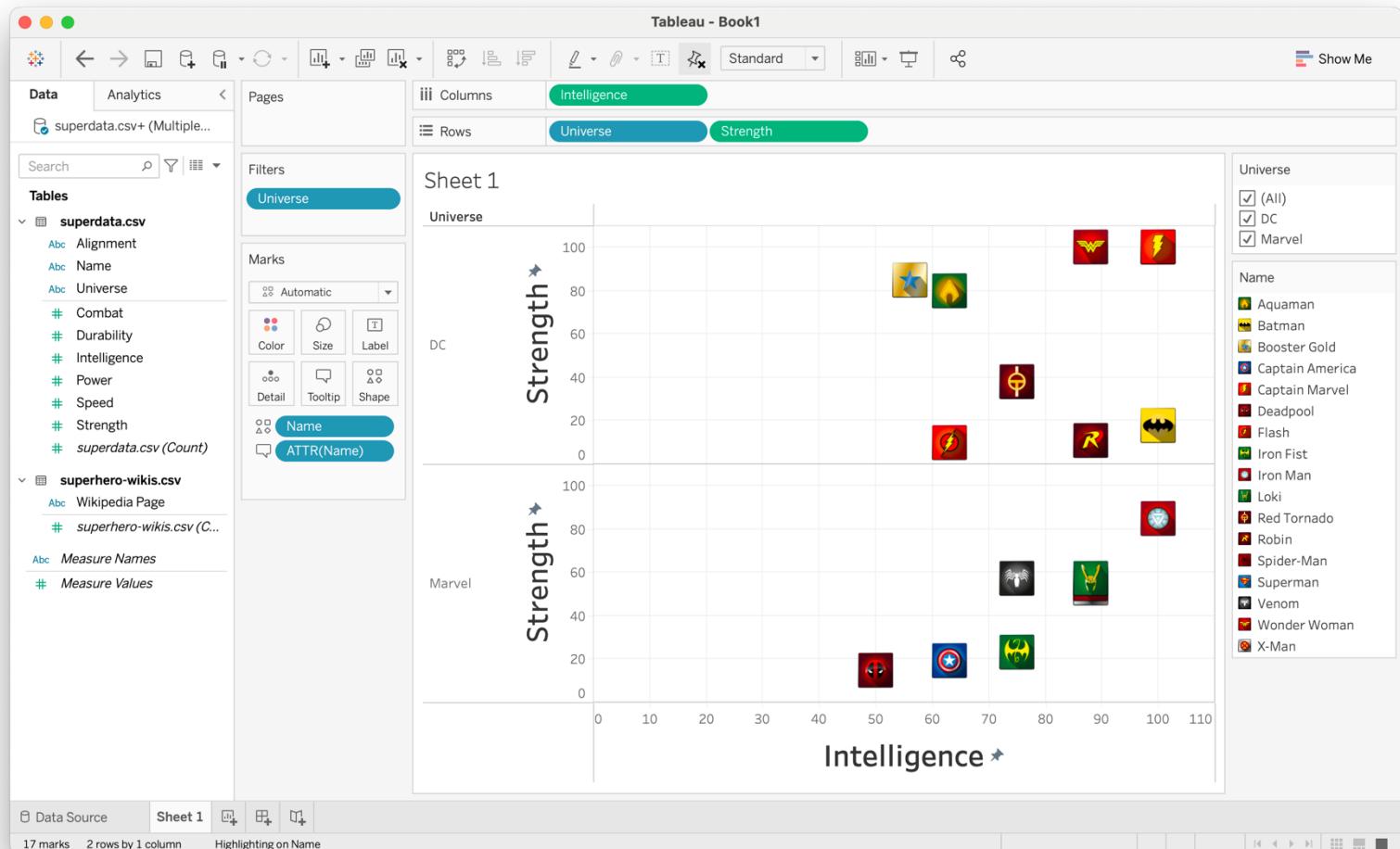
Working with filters



Changing a filter's scope



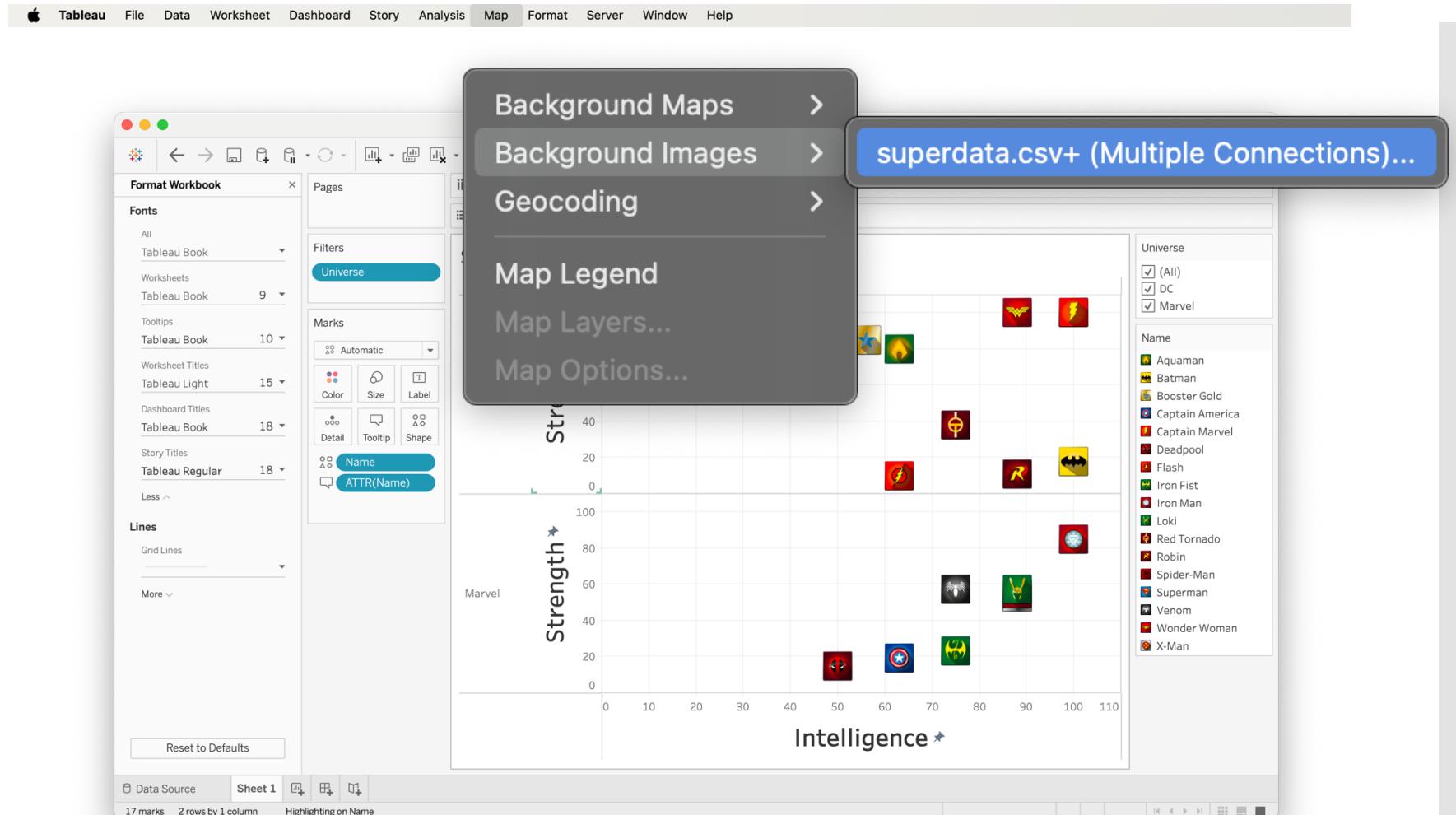
Implicit filtering (side-by-side comparison)



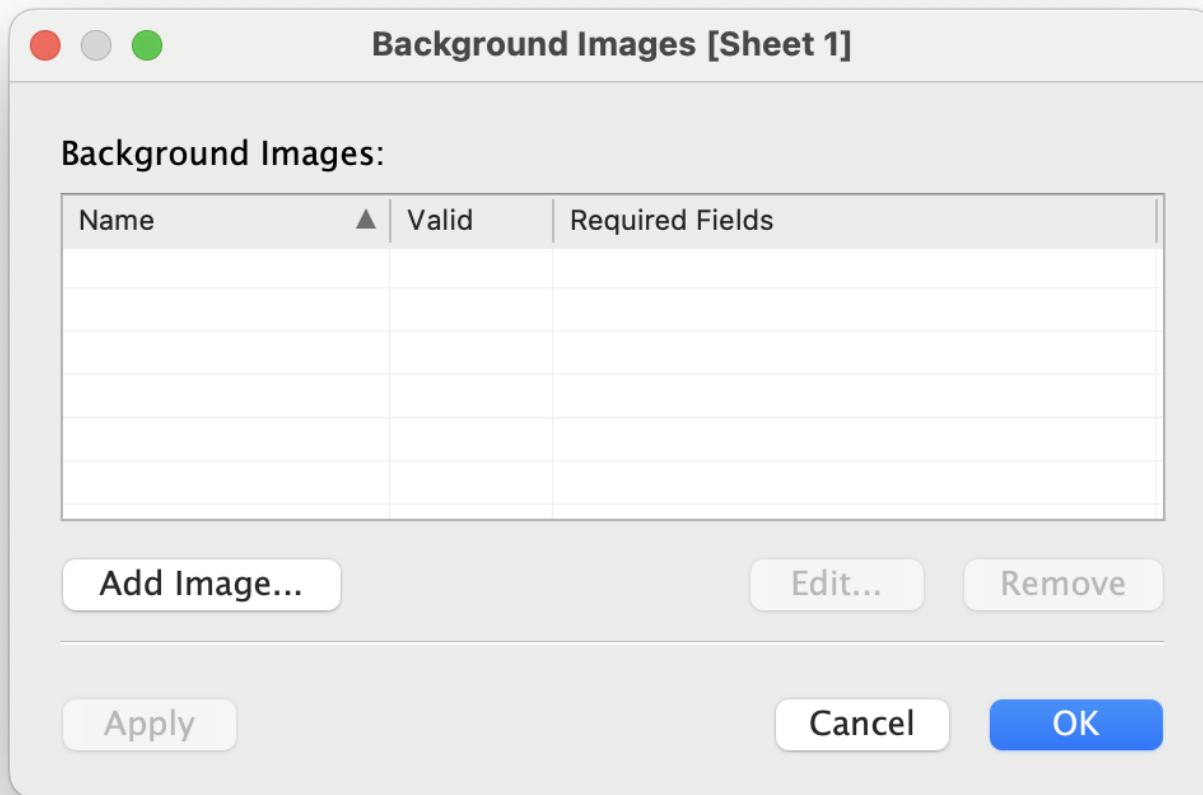
Adding
background
images



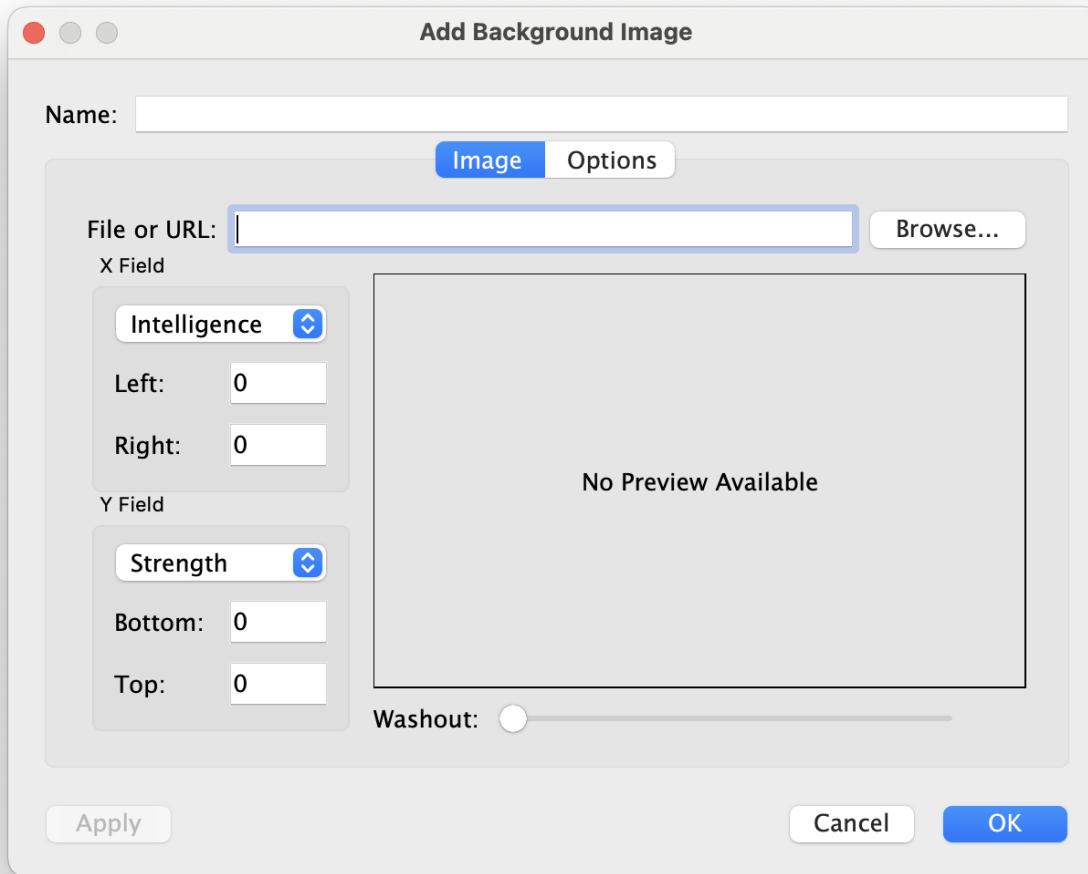
Adding background images



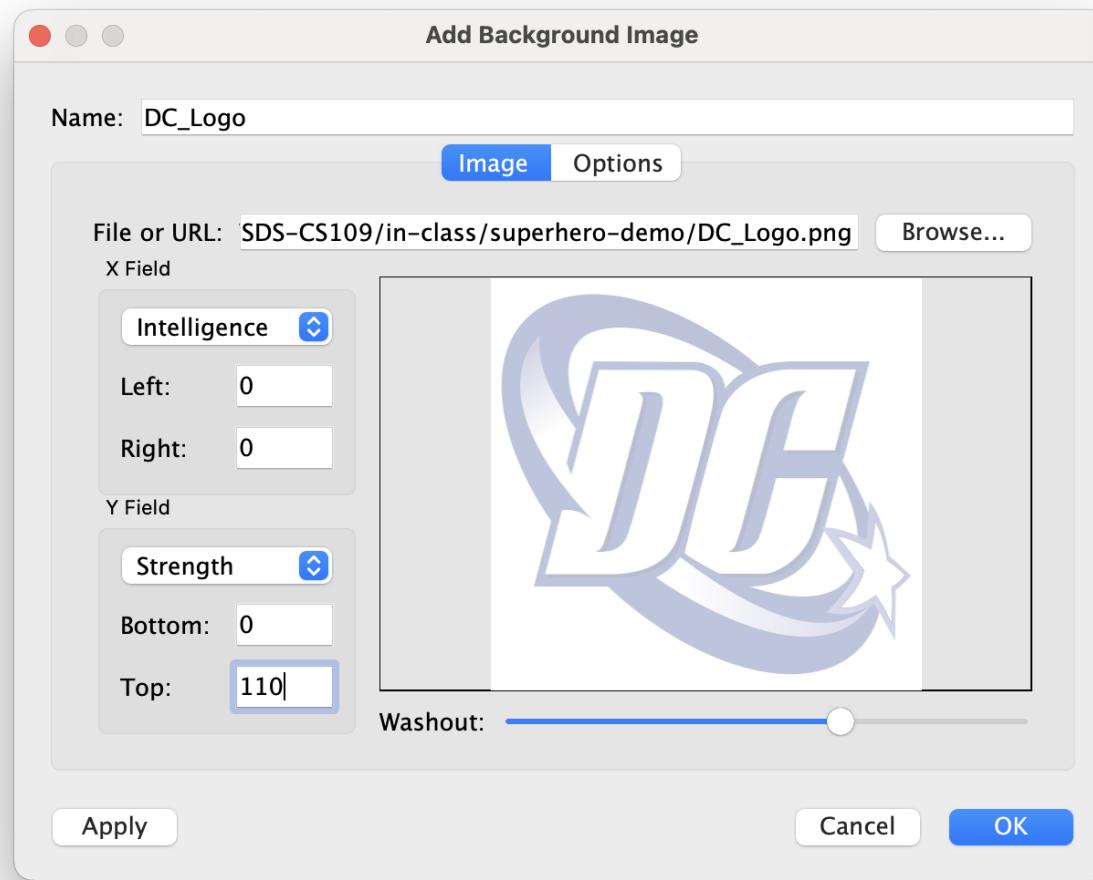
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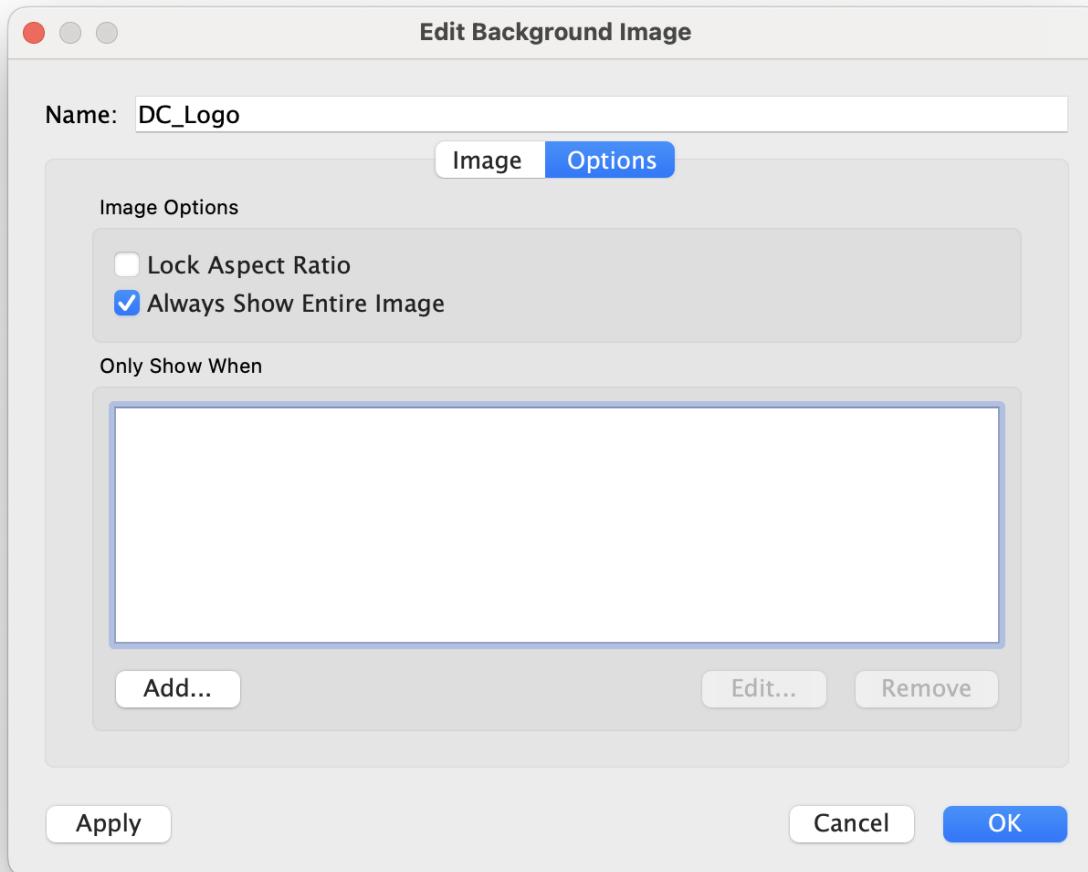
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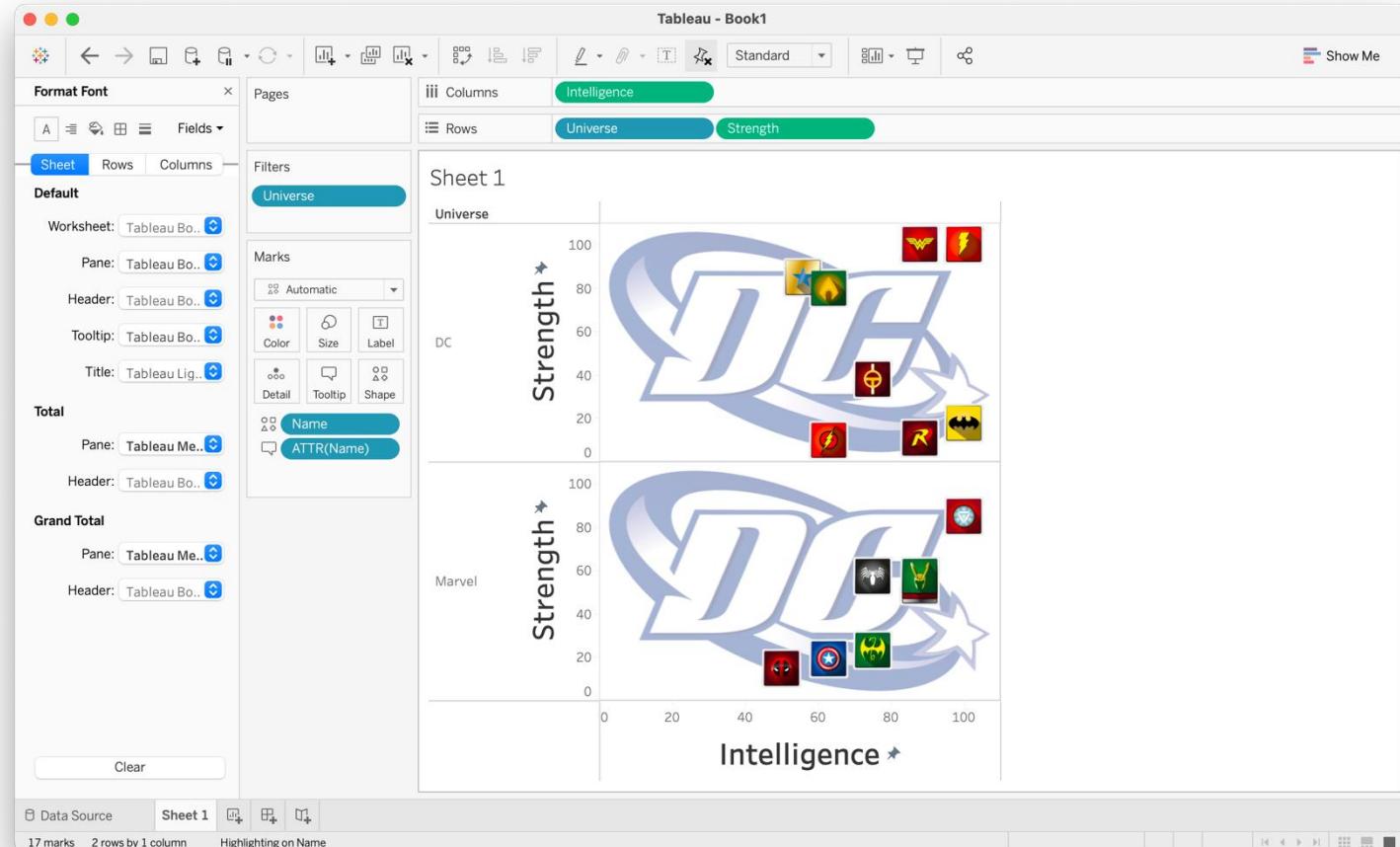
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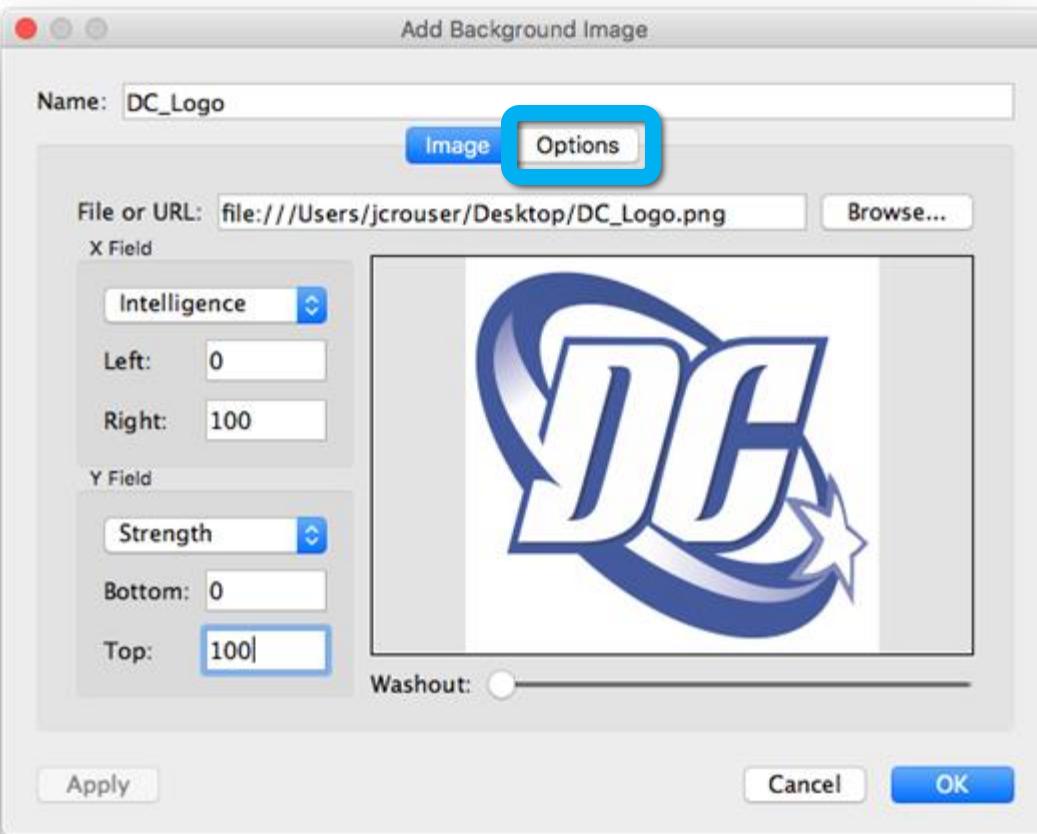
Adding background images



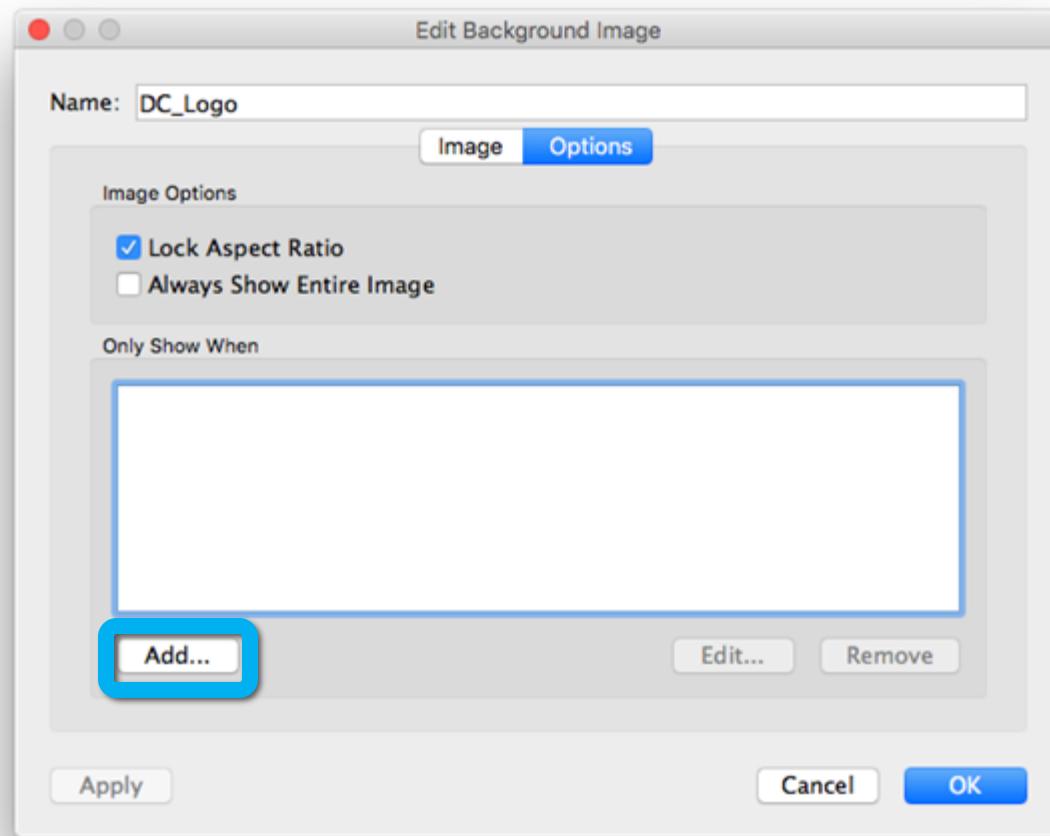
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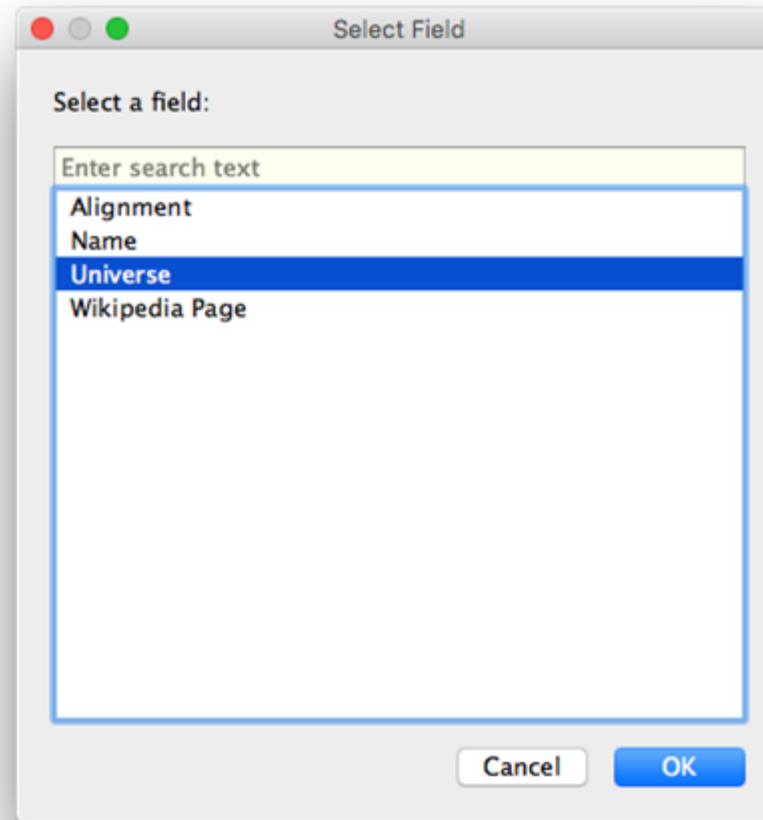
Adding background images



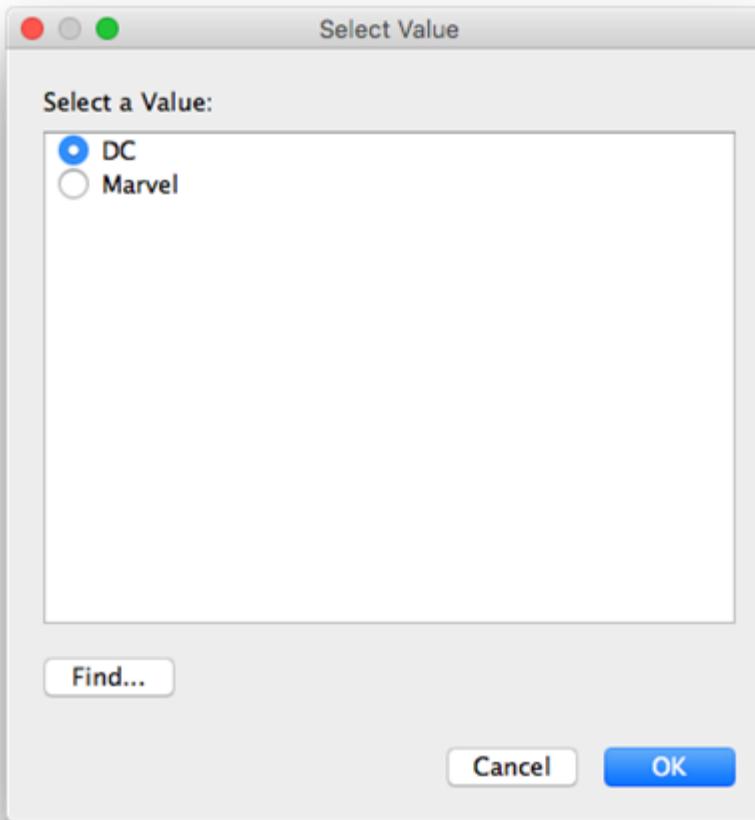
Adding background images



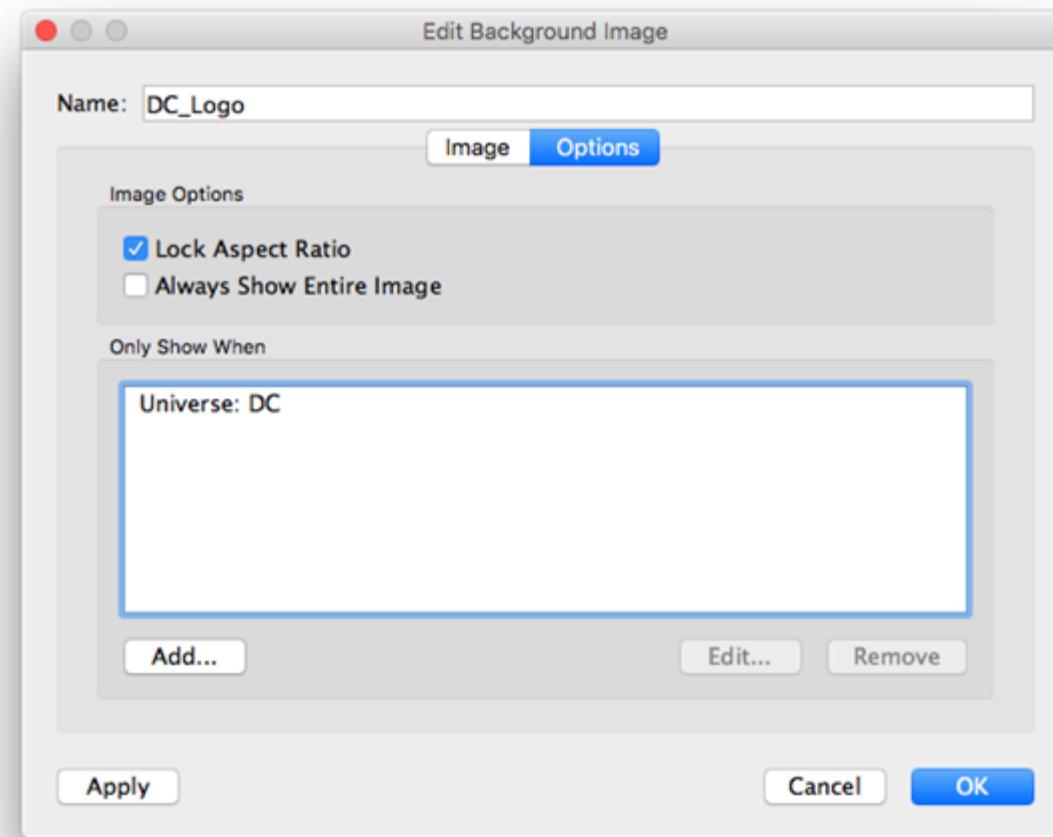
Adding background images



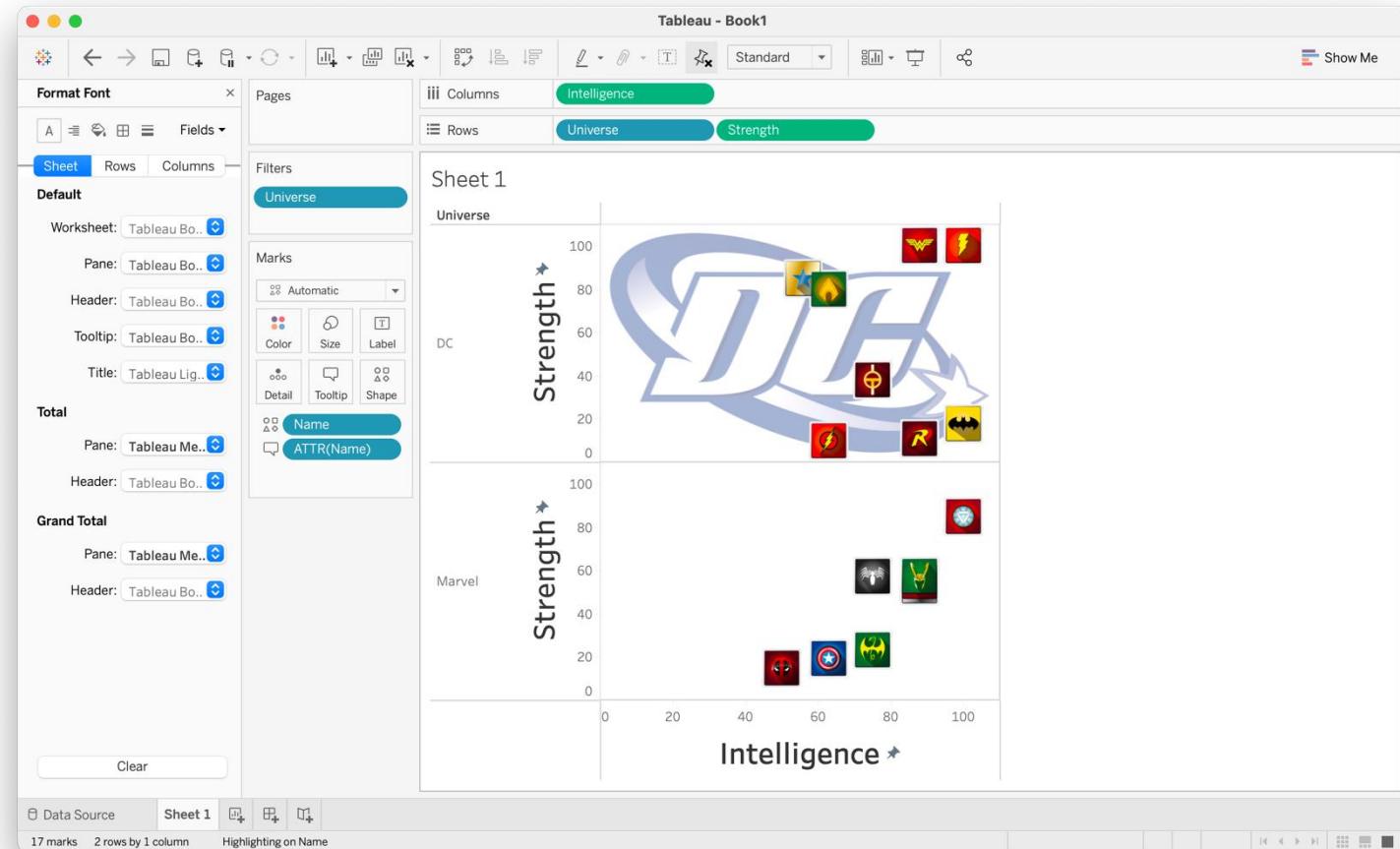
Adding background images



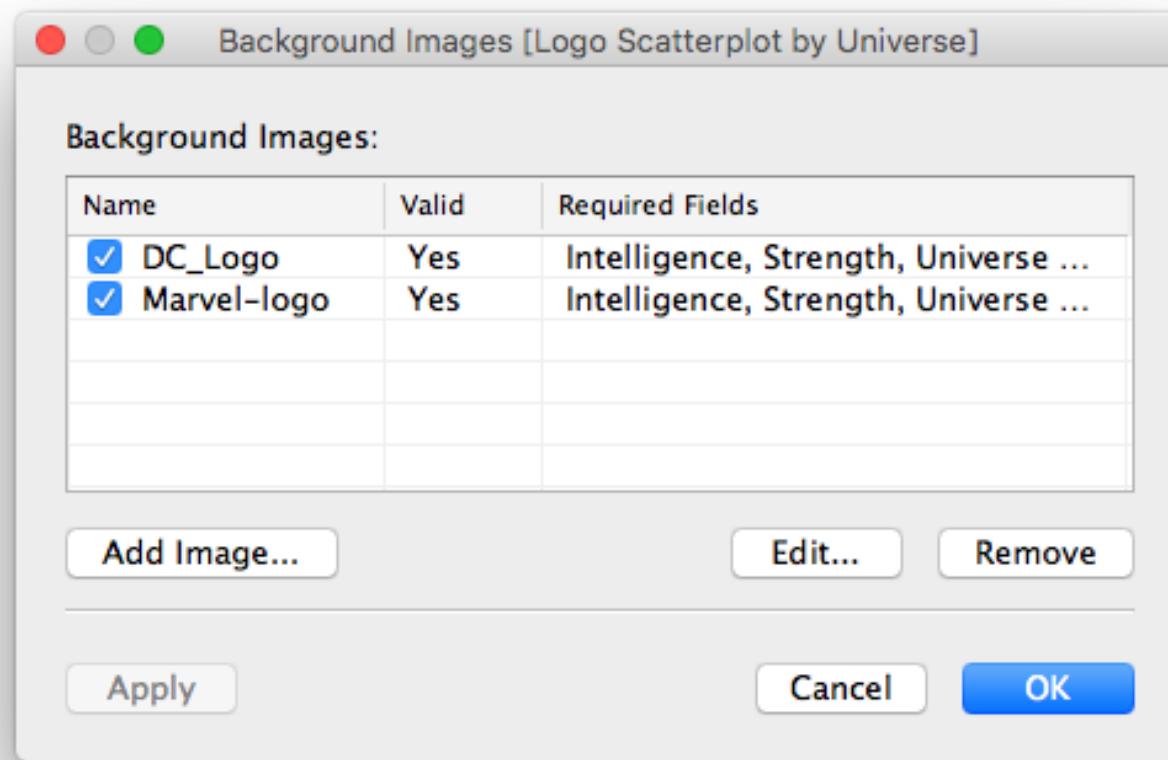
Adding background images



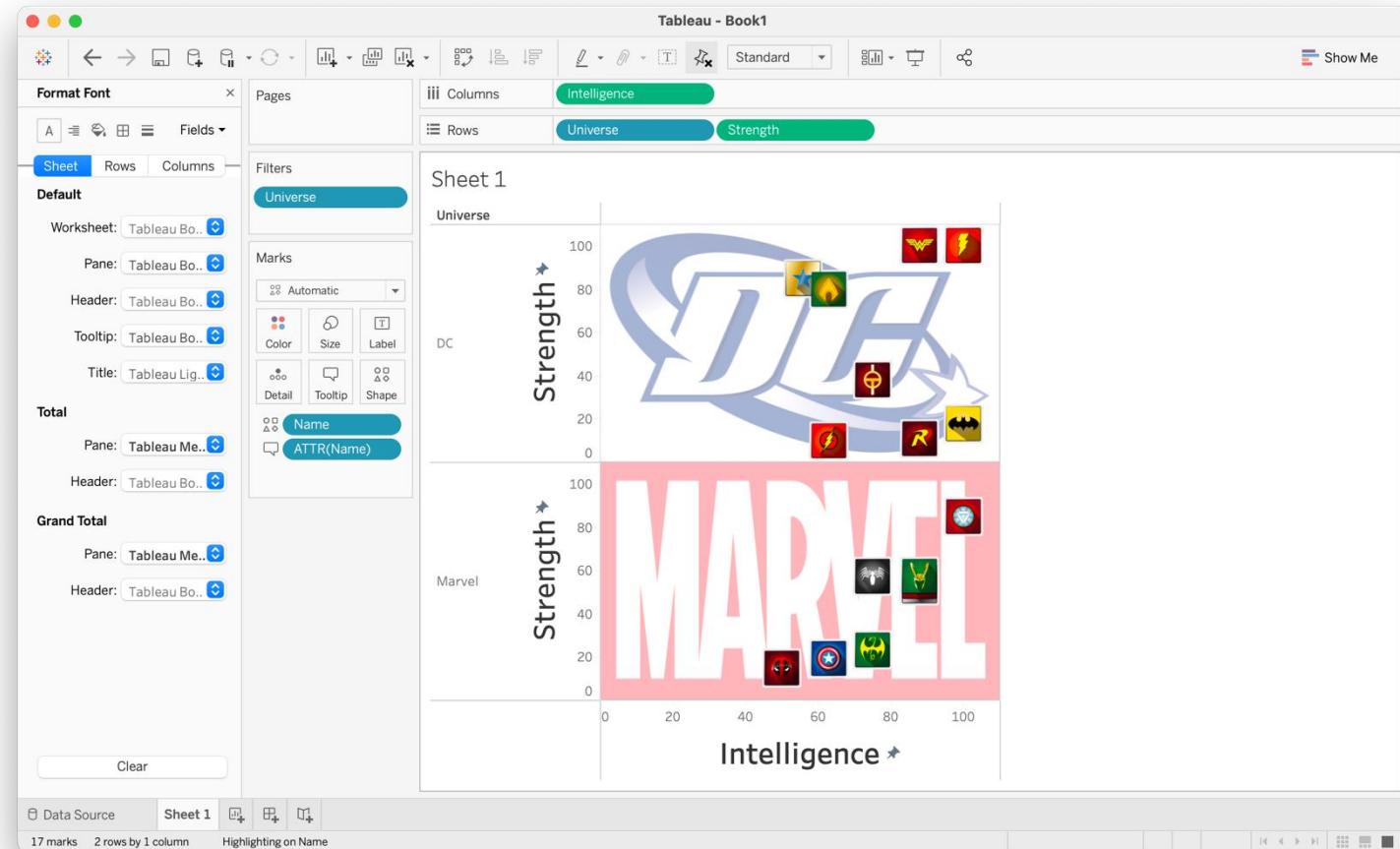
Adding background images



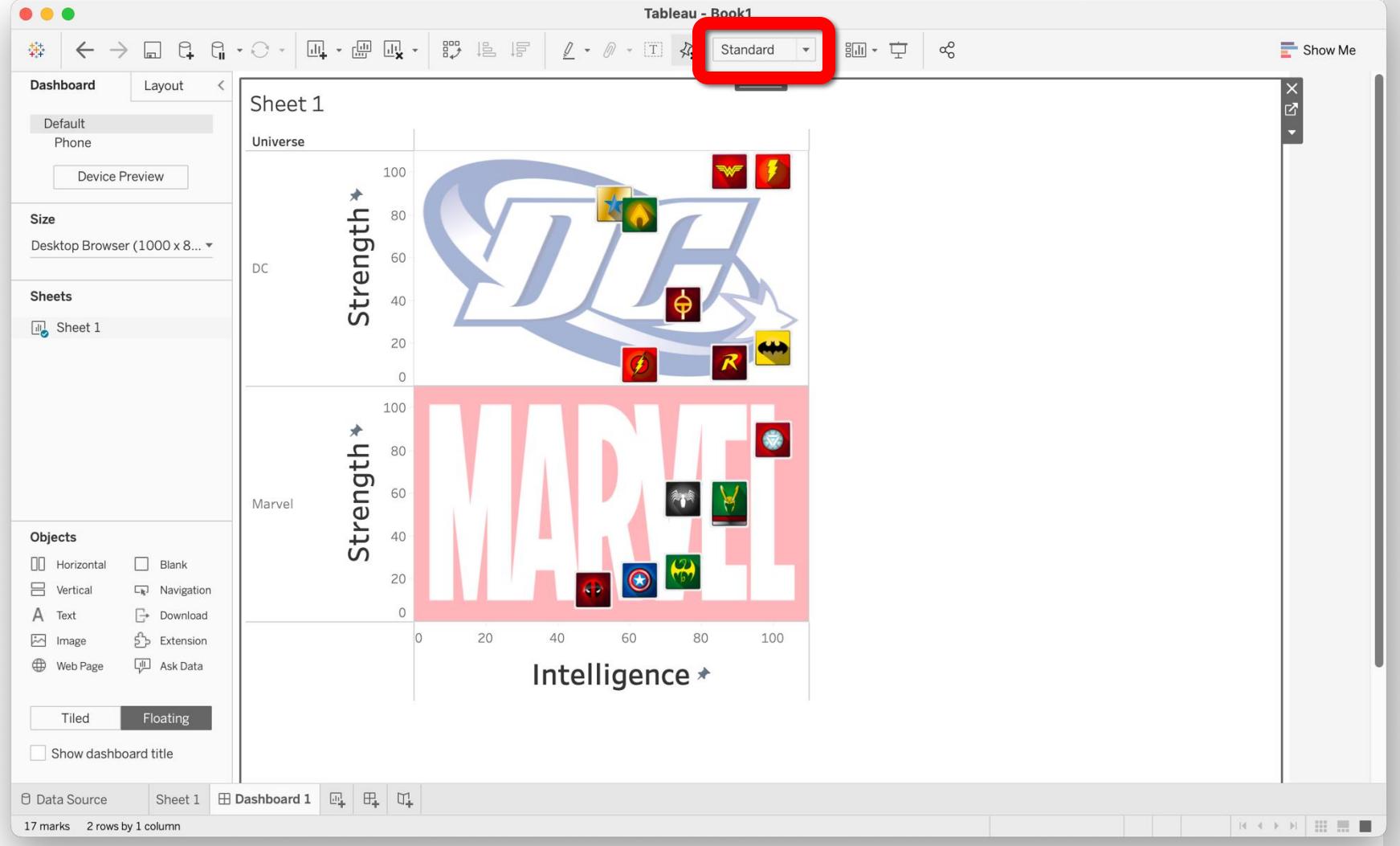
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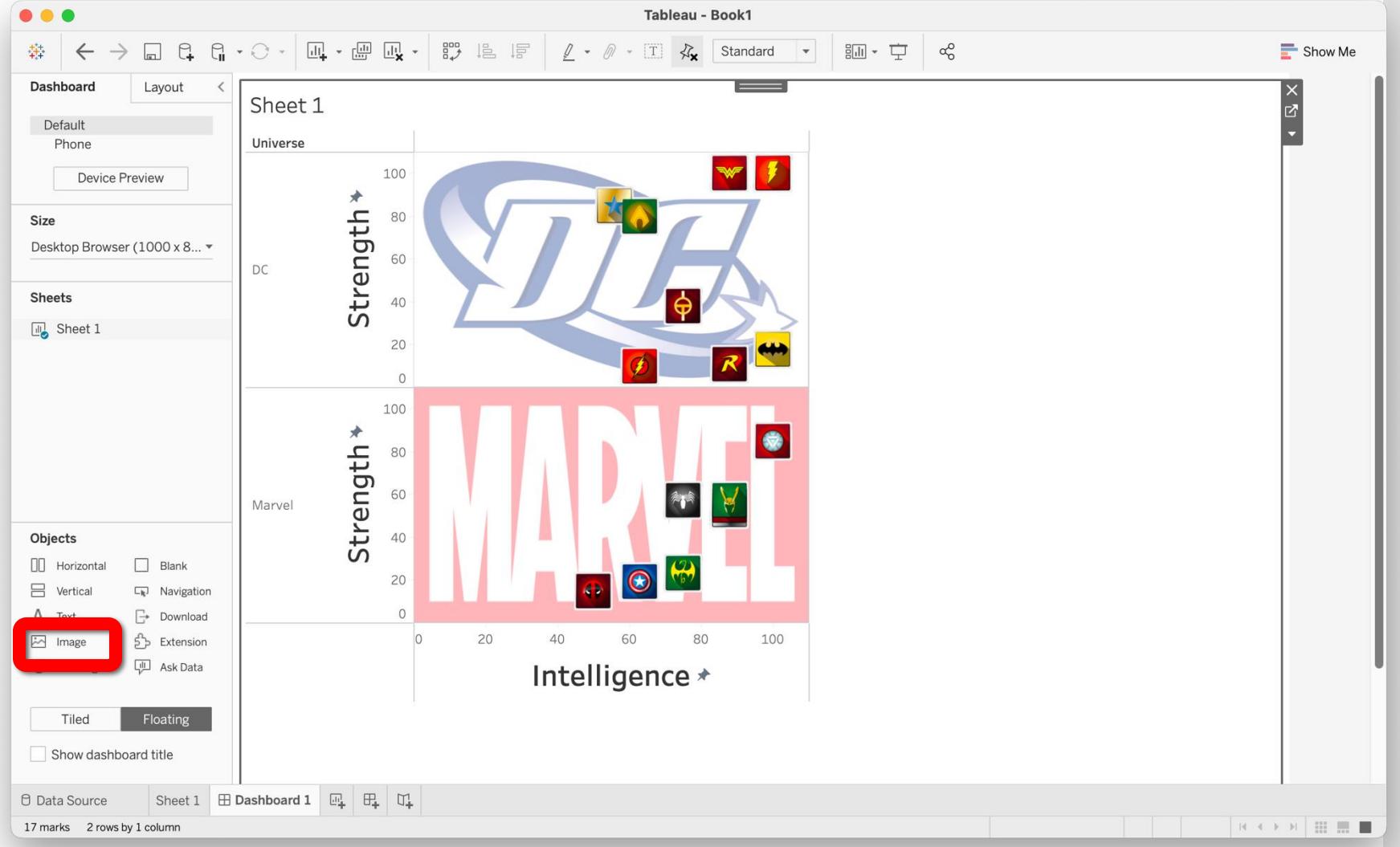
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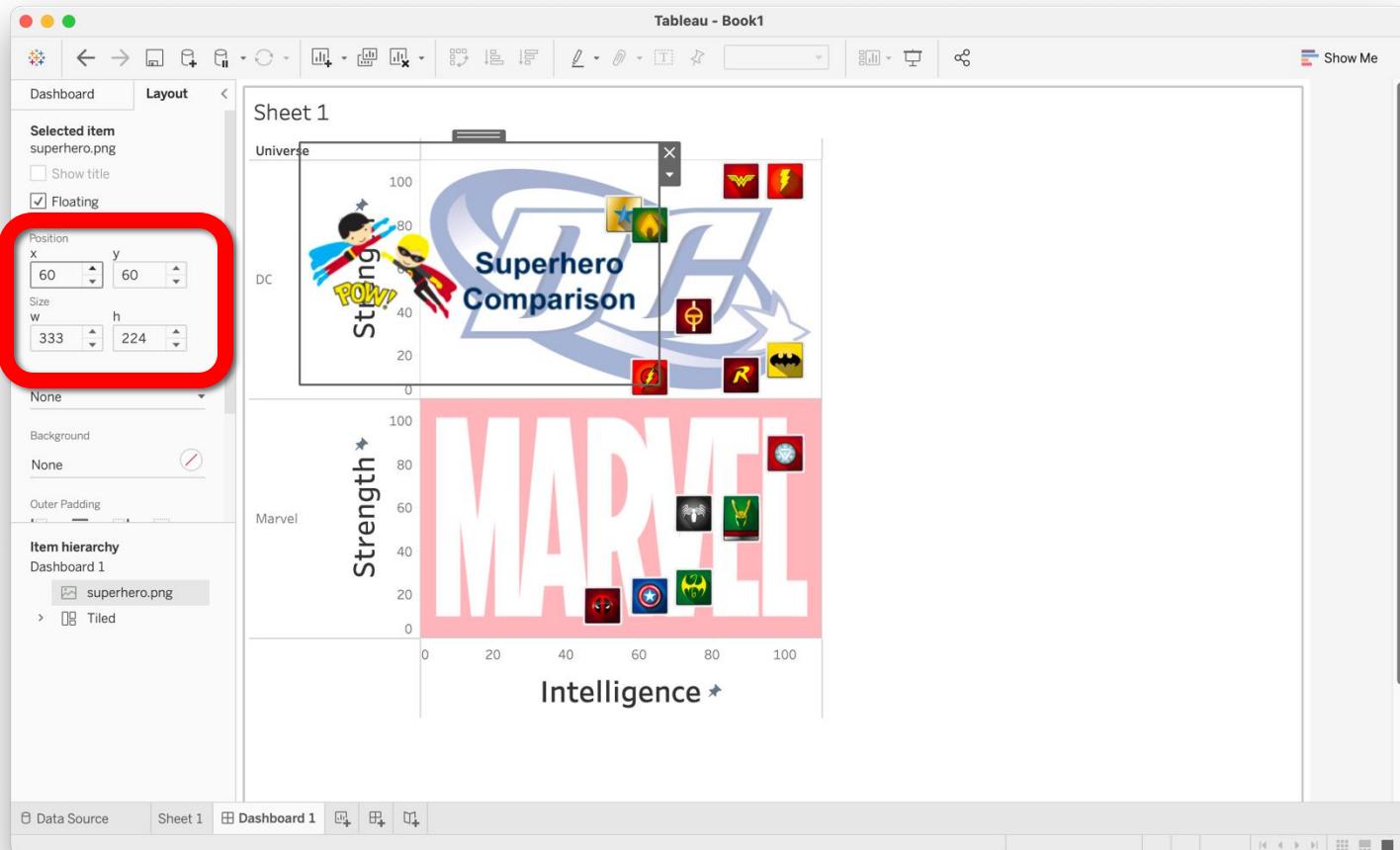
Customizing a dashboard



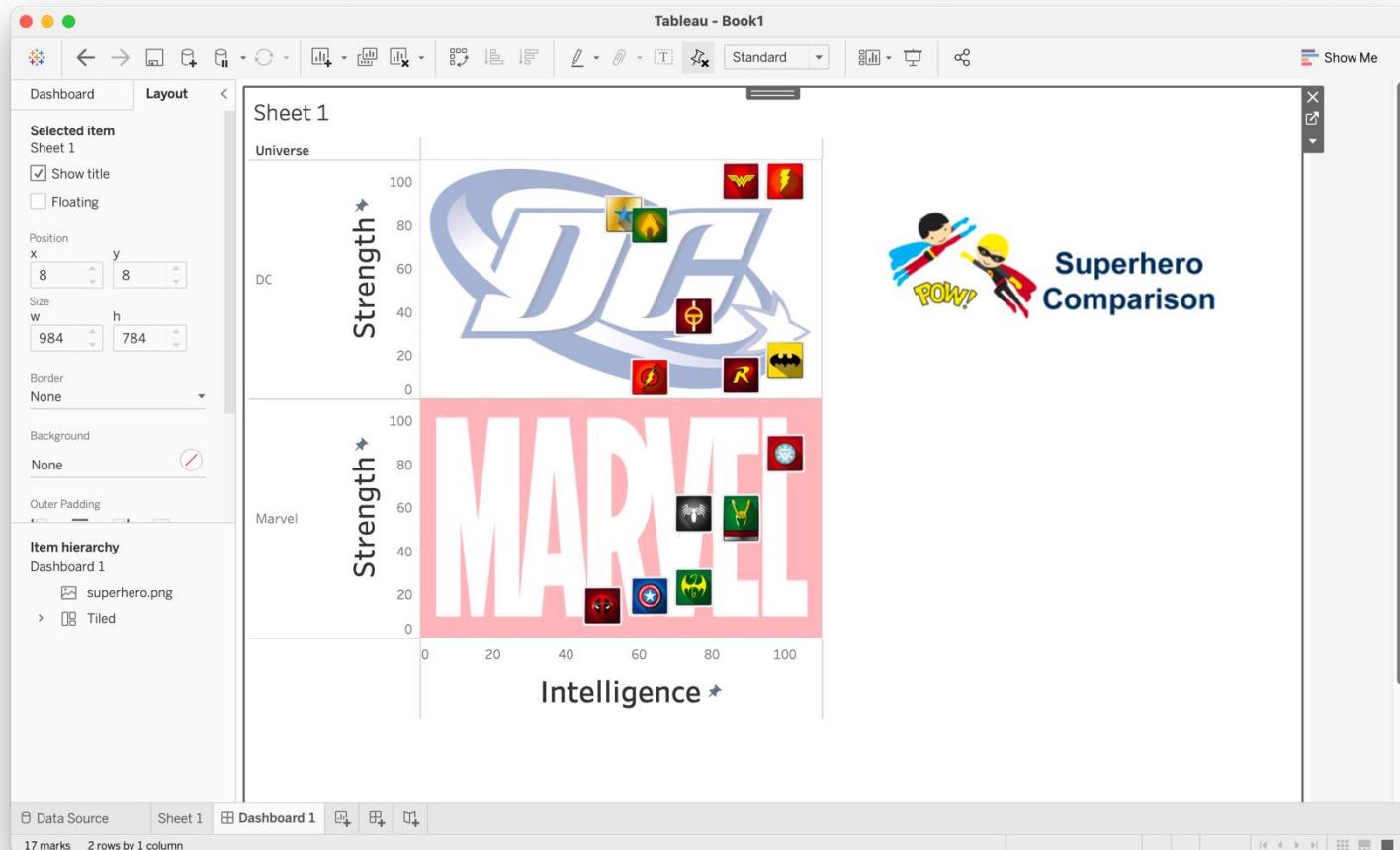
Customizing a dashboard



Customizing a dashboard



Customizing a dashboard



Flashback: dataset

Tableau - Book1

Connections

- superdata
- superhero-wikis

Files

- superdata.csv
- superhero-wikis.csv

superdata.csv+ (Multiple Connections)

superdata.csv

superhero-wikis.csv

Connection: Live

Filters: 0 | Add

Sort fields Data source order

Show aliases Show hidden fields 17 rows

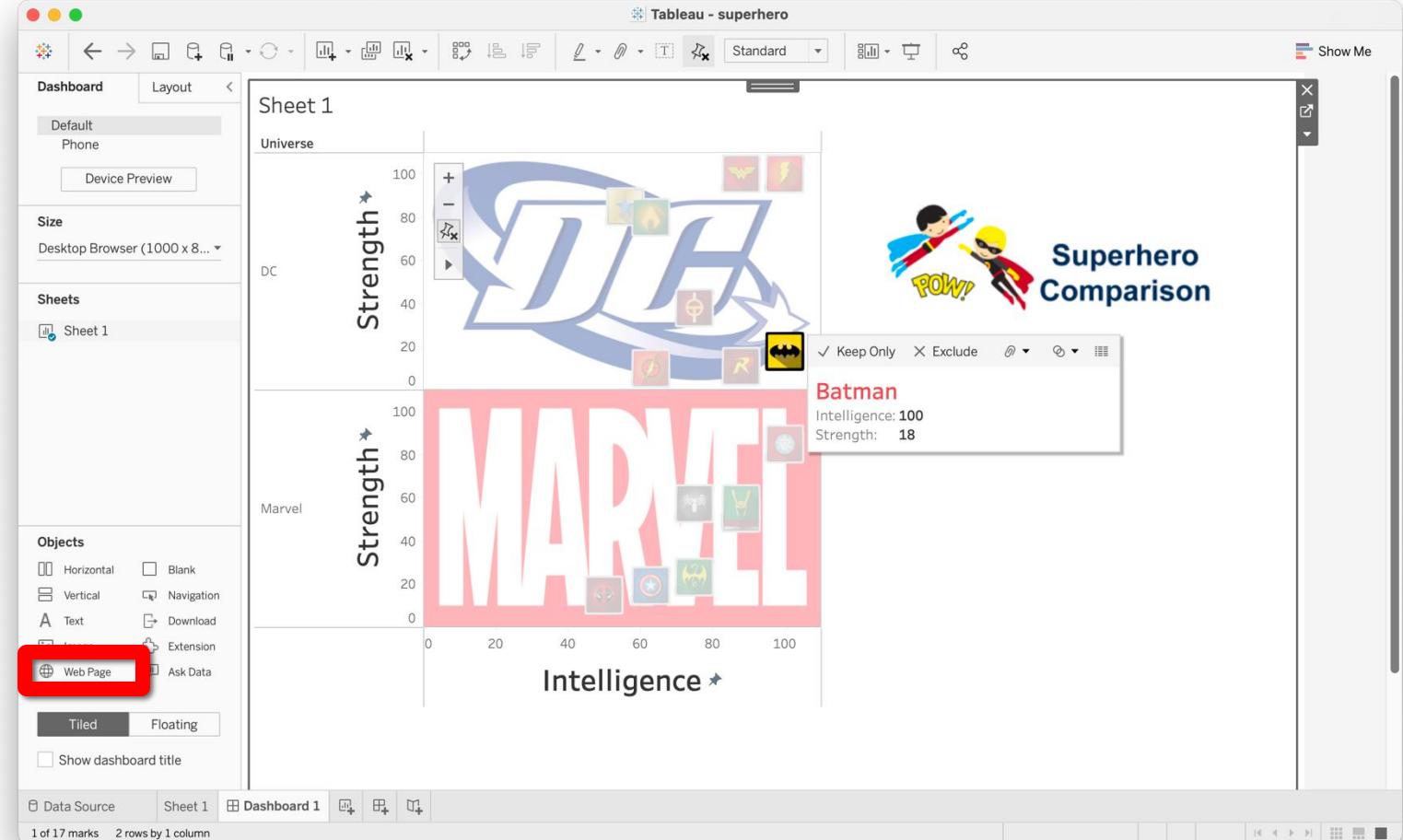
| superdata.csv | superhero-wikis.csv |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|---|
| Intelligence | Strength | Speed | Durability | Power | Combat | Abc | Universe | Name (superhero-wikis.csv) |
| 63 | 80 | 50 | 80 | 65 | 80 | DC | Aquaman | https://en.m.wikipedia.org/wiki/Aquaman_(DC_Comics) |
| 100 | 18 | 27 | 42 | 37 | 100 | DC | Batman | https://en.m.wikipedia.org/wiki/Batman |
| 56 | 85 | 53 | 50 | 72 | 40 | DC | Booster Gold | https://en.m.wikipedia.org/wiki/Booster_Gold |
| 63 | 19 | 35 | 56 | 46 | 100 | Marvel | Captain America | https://en.m.wikipedia.org/wiki/Captain_America |
| 100 | 100 | 67 | 95 | 62 | 56 | DC | Captain Marvel | https://en.m.wikipedia.org/wiki/Captain_Marvel_(Marvel_Comics) |
| 50 | 15 | 30 | 100 | 100 | 100 | Marvel | Deadpool | https://en.m.wikipedia.org/wiki/Deadpool |
| 63 | 10 | 100 | 50 | 57 | 32 | DC | Flash | https://en.m.wikipedia.org/wiki/The_Flash |
| 75 | 23 | 35 | 42 | 43 | 100 | Marvel | Iron Fist | https://en.m.wikipedia.org/wiki/Iron_Fist |
| 100 | 85 | 58 | 85 | 100 | 64 | Marvel | Iron Man | https://en.m.wikipedia.org/wiki/Iron_Man |
| 88 | 57 | 47 | 85 | 85 | 56 | Marvel | Loki | https://en.m.wikipedia.org/wiki/Loki |

Data Source Sheet 1

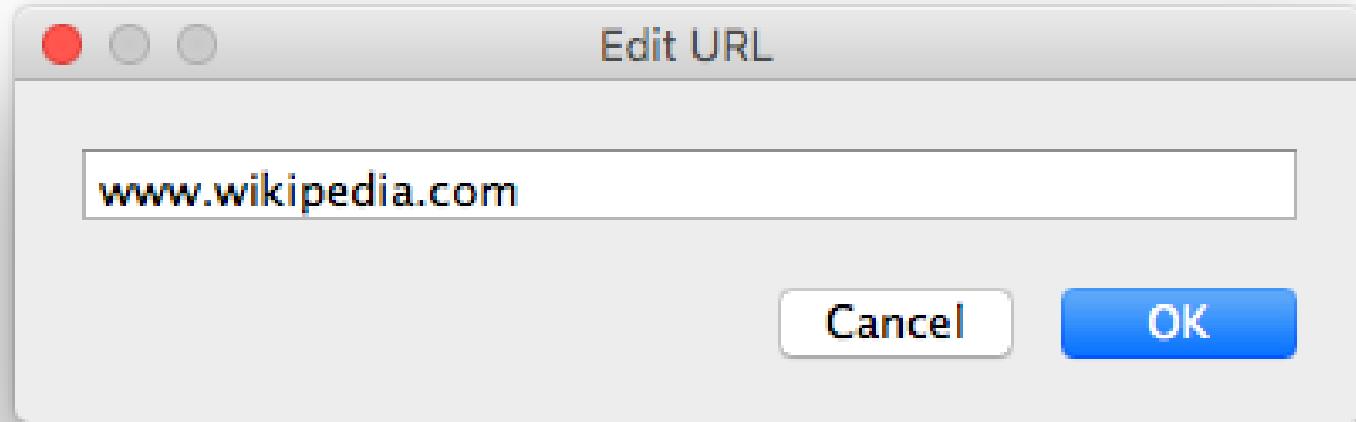
superhero-wikis.csv
Wikipedia Page

- [https://en.m.wikipedia.org/wiki/Aquaman_\(DC_Comics\)](https://en.m.wikipedia.org/wiki/Aquaman_(DC_Comics))
- <https://en.m.wikipedia.org/wiki/Batman>
- https://en.m.wikipedia.org/wiki/Booster_Gold
- https://en.m.wikipedia.org/wiki/Captain_America
- [https://en.m.wikipedia.org/wiki/Captain_Marvel_\(Marvel_Comics\)](https://en.m.wikipedia.org/wiki/Captain_Marvel_(Marvel_Comics))
- <https://en.m.wikipedia.org/wiki/Deadpool>
- https://en.m.wikipedia.org/wiki/The_Flash
- https://en.m.wikipedia.org/wiki/Iron_Fist
- https://en.m.wikipedia.org/wiki/Iron_Man
- <https://en.m.wikipedia.org/wiki/Loki>

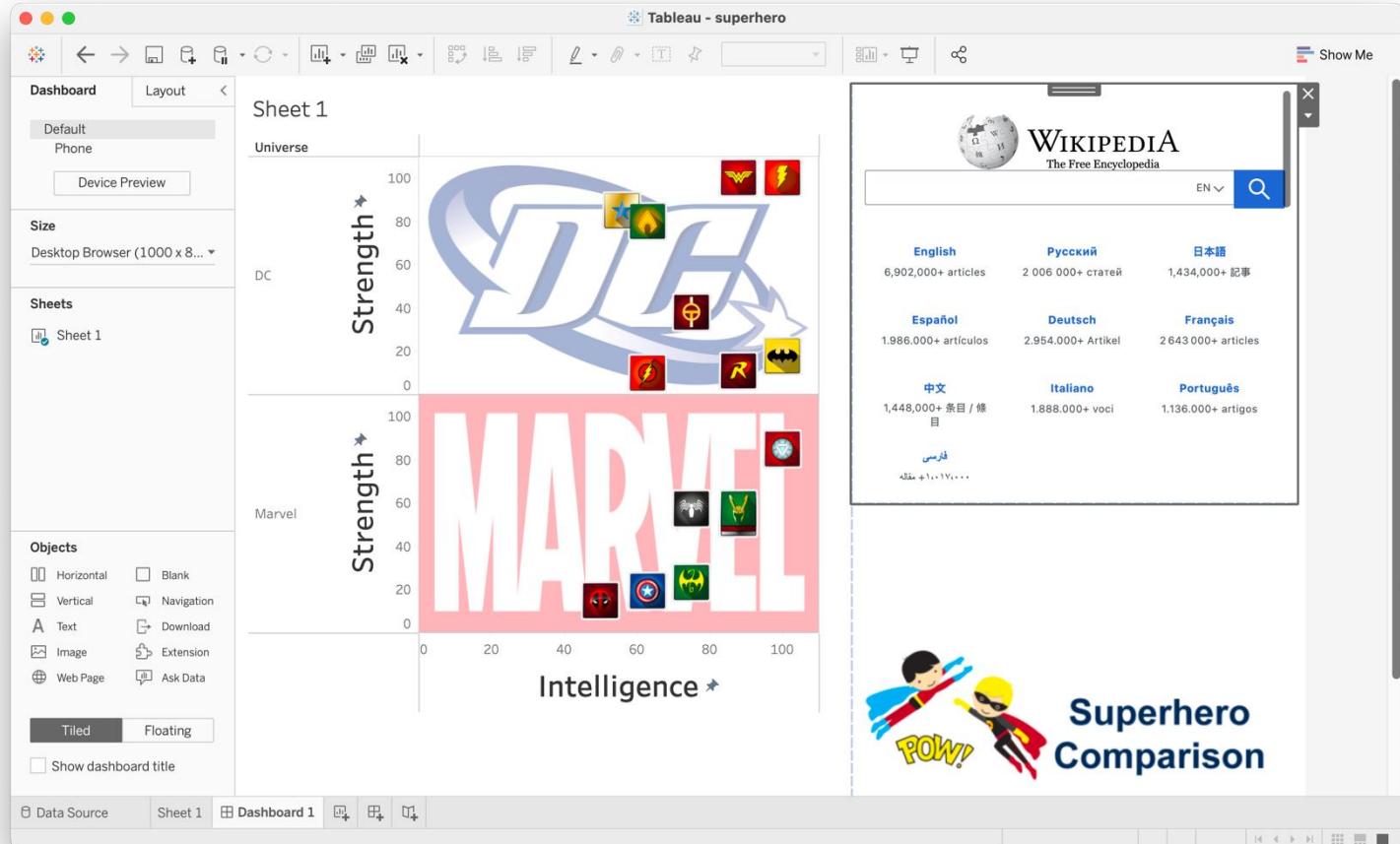
Load external data on click



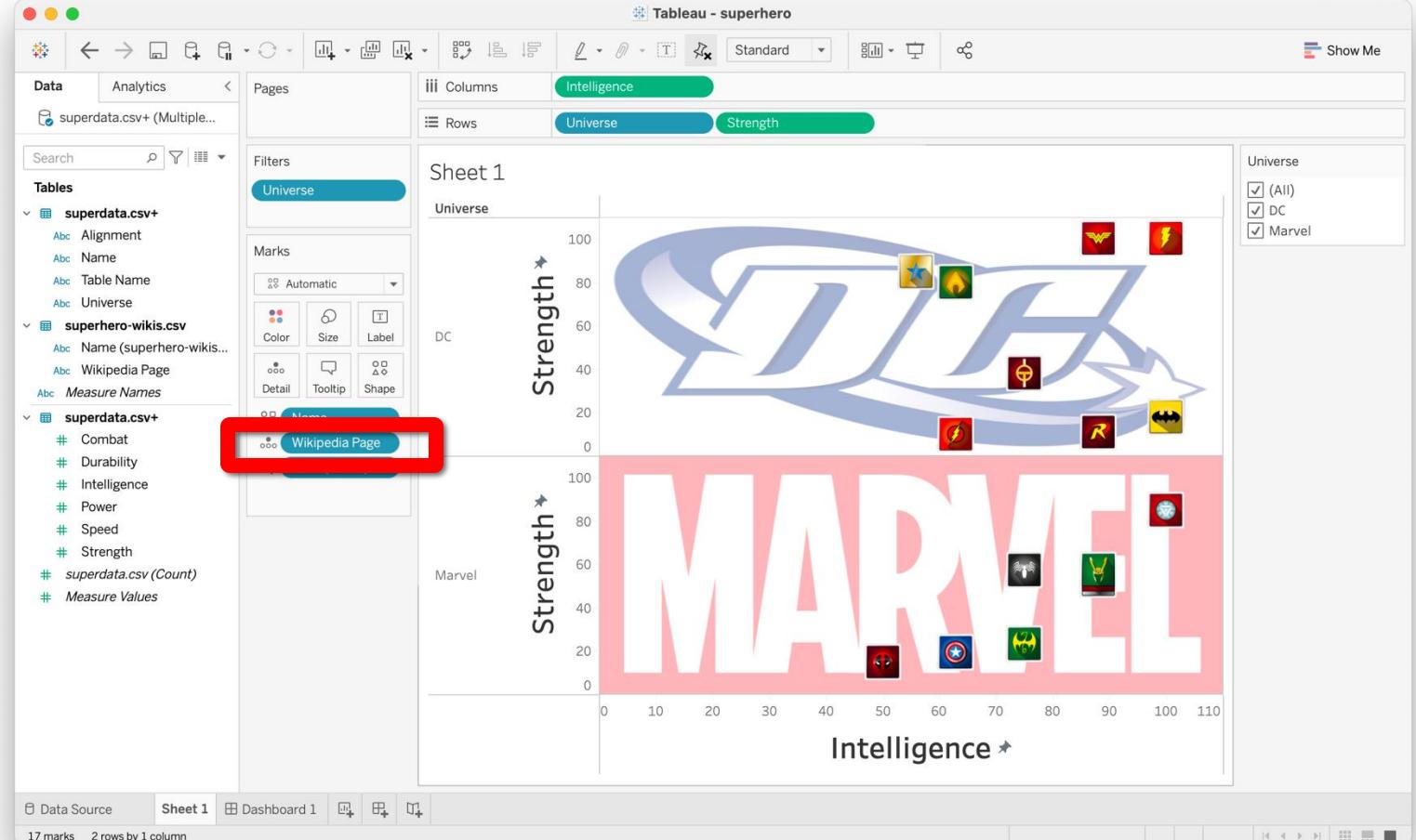
Load external
data on click



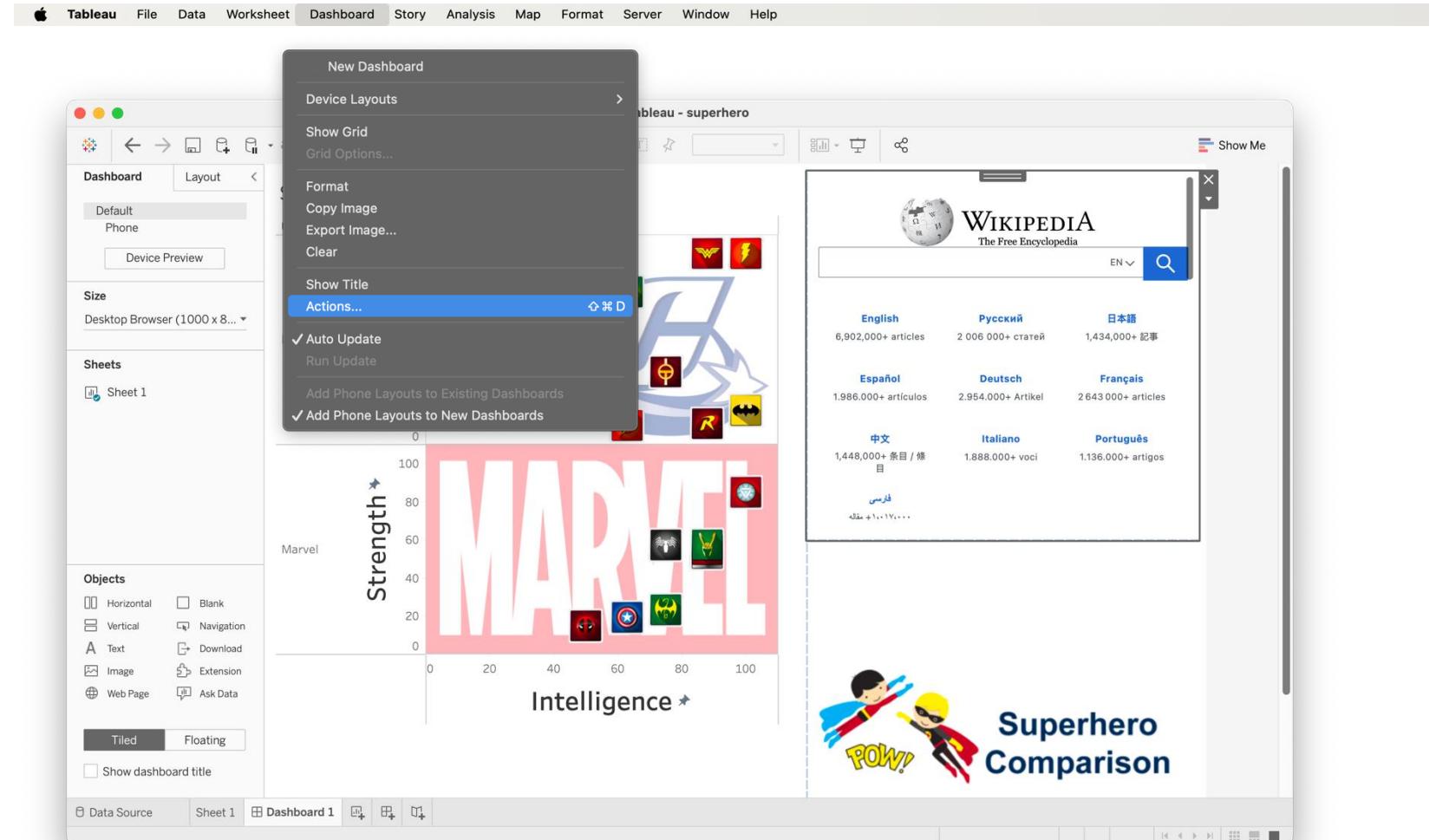
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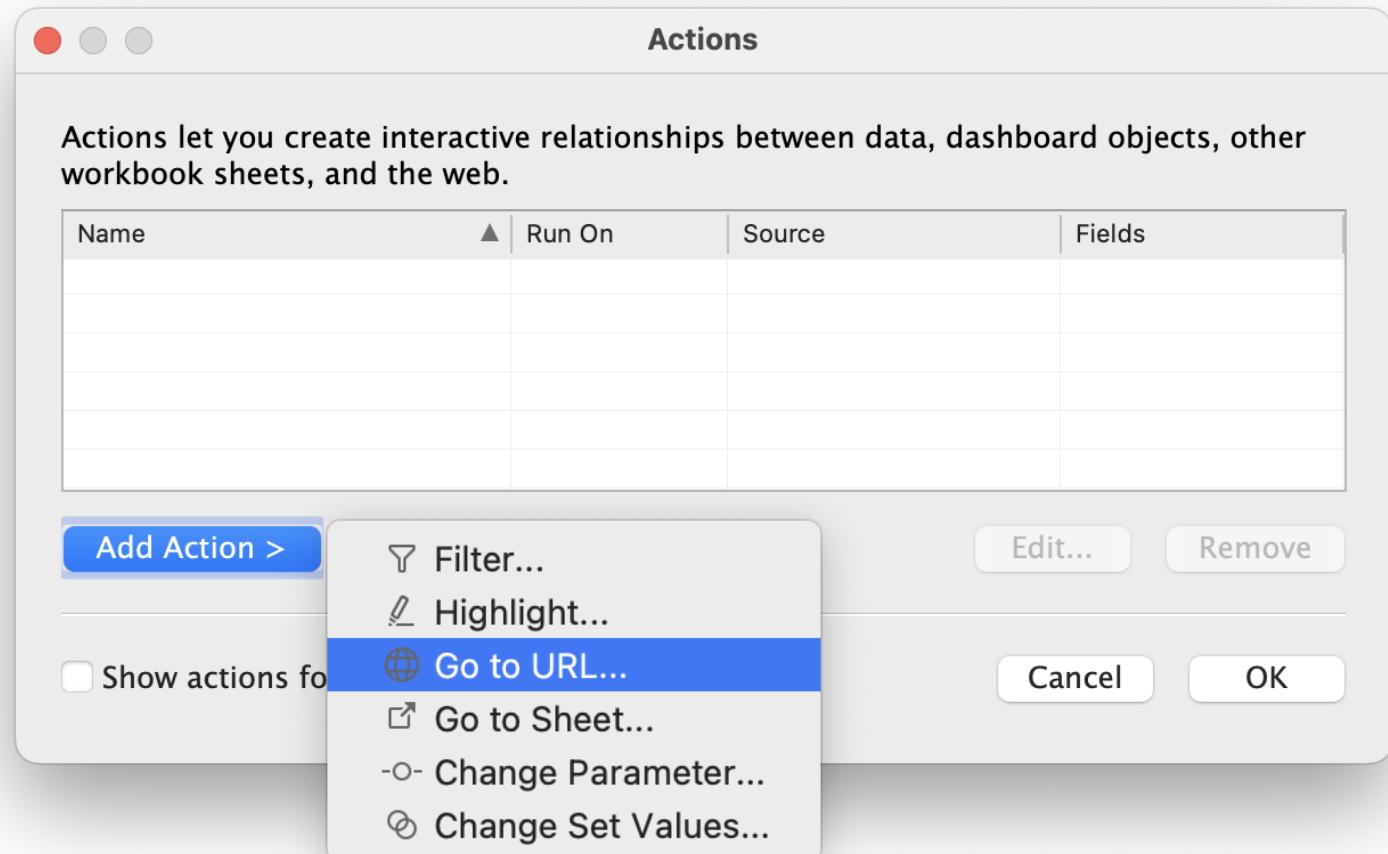
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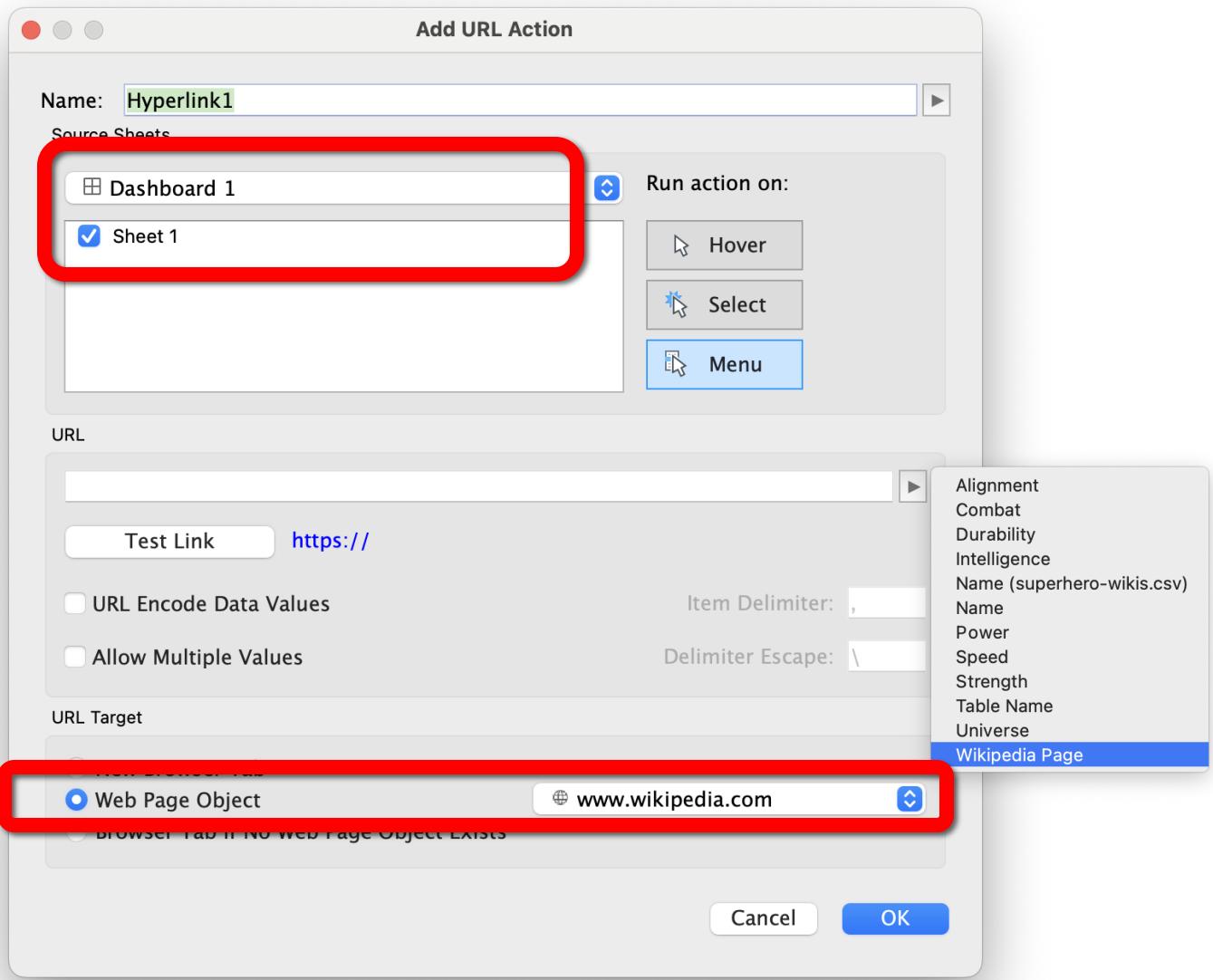
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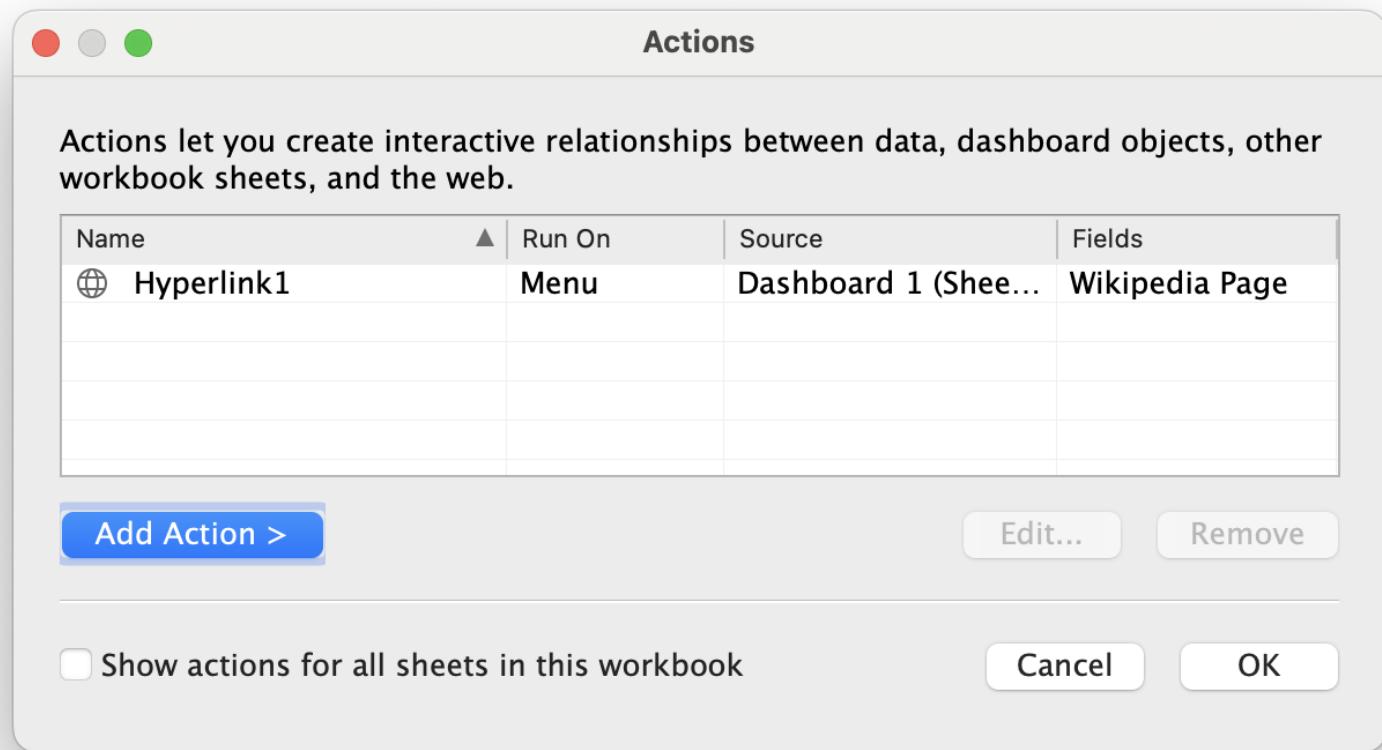
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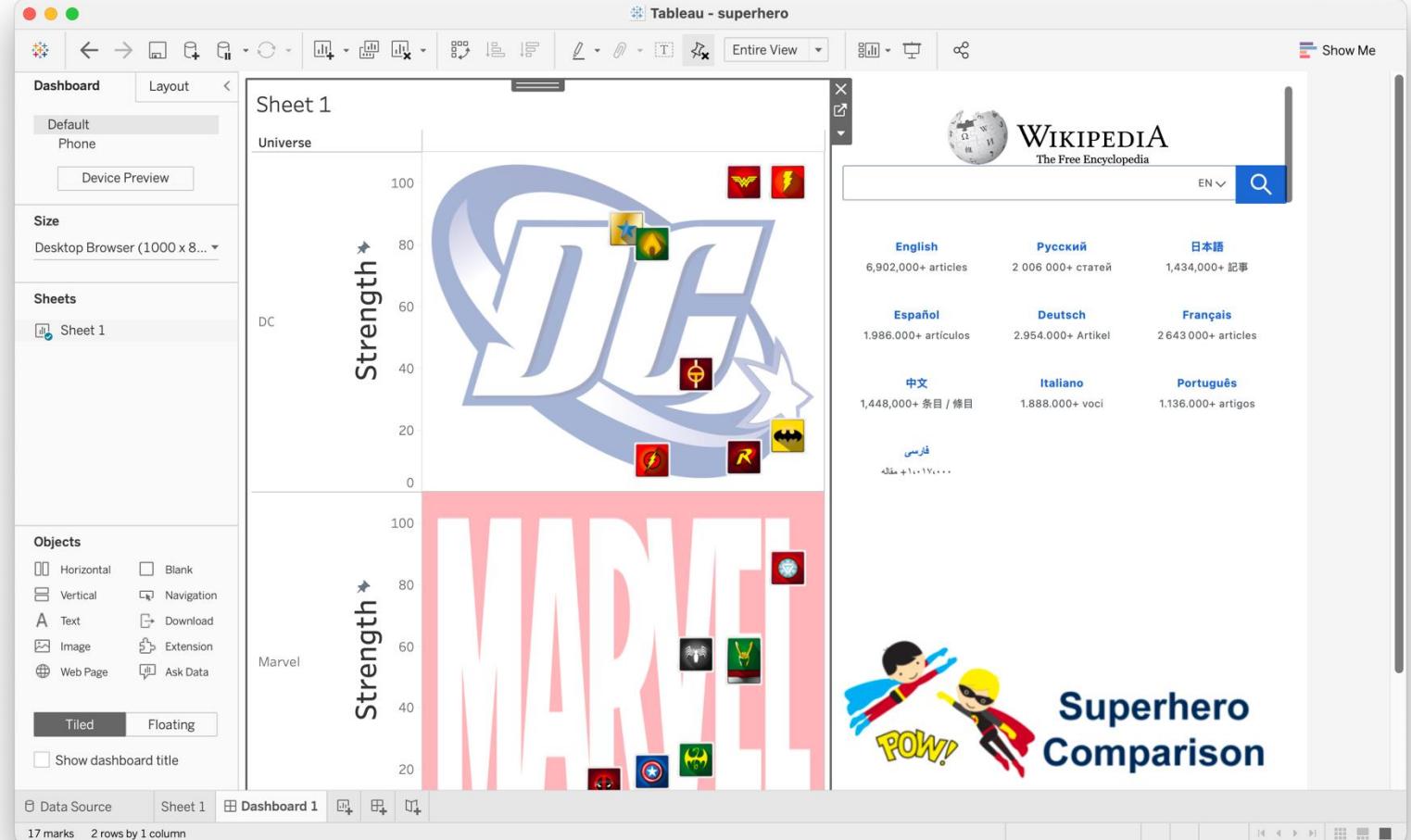
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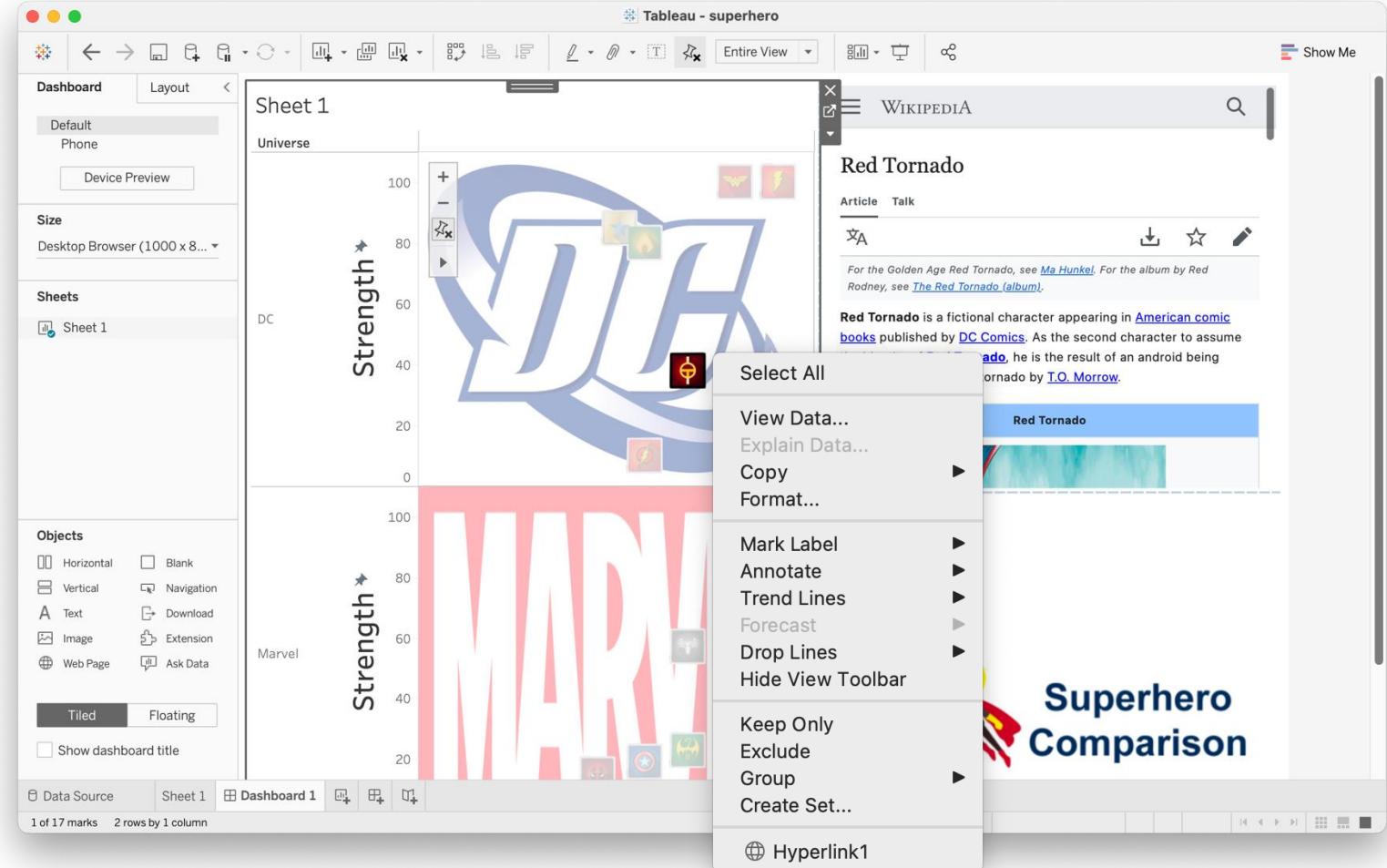
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Your Turn!

Find your final project group. Brainstorm how you can incorporate at least two of the skills you learned today into your final project.