IOWA STATE UNIVERSITY
Extension and Outreach

Visualizing Community Assets:
Leveraging Tableau Public for Data- Driven Decision-Making within the Community Capitals Framework

NACDEP

June 10, 2025

Agenda

- Menti Activity
- What is Tableau?
  - Sharing with Tableau Public
- How we are using Tableau
  - Data Team & how we got here
  - Teaching with Tableau
  - DSPG & Community Capitals
  - Dollar bill tool & others
- Hands-on workshop
  - Set up a Tableau Public Account
  - Library Statistics Demo
  - Help Resources

Mentimeter Activity

Join at menti.com | use code 8787 2438

Mentimeter

Instructions

Go to

www.menti.com

Enter the code

8787 2438

Or use QR code

What is Tableau?

- “Tableau is a visual analytics platform transforming the way we use data to solve problems—empowering people and organizations to make the most of their data.”
- Powerful tool that helps users analyze and share data through interactive dashboards and visualizations

- Tableau Desktop – paid desktop application to connect to data, analyze data, create visualizations, and build dashboards.

Tableau Public

- A free platform to explore, create, and publicly share data visualizations online.
  - Tableau Desktop Public Edition
  - Tableau Public Web Authoring (browser-based application)

public.tableau.com

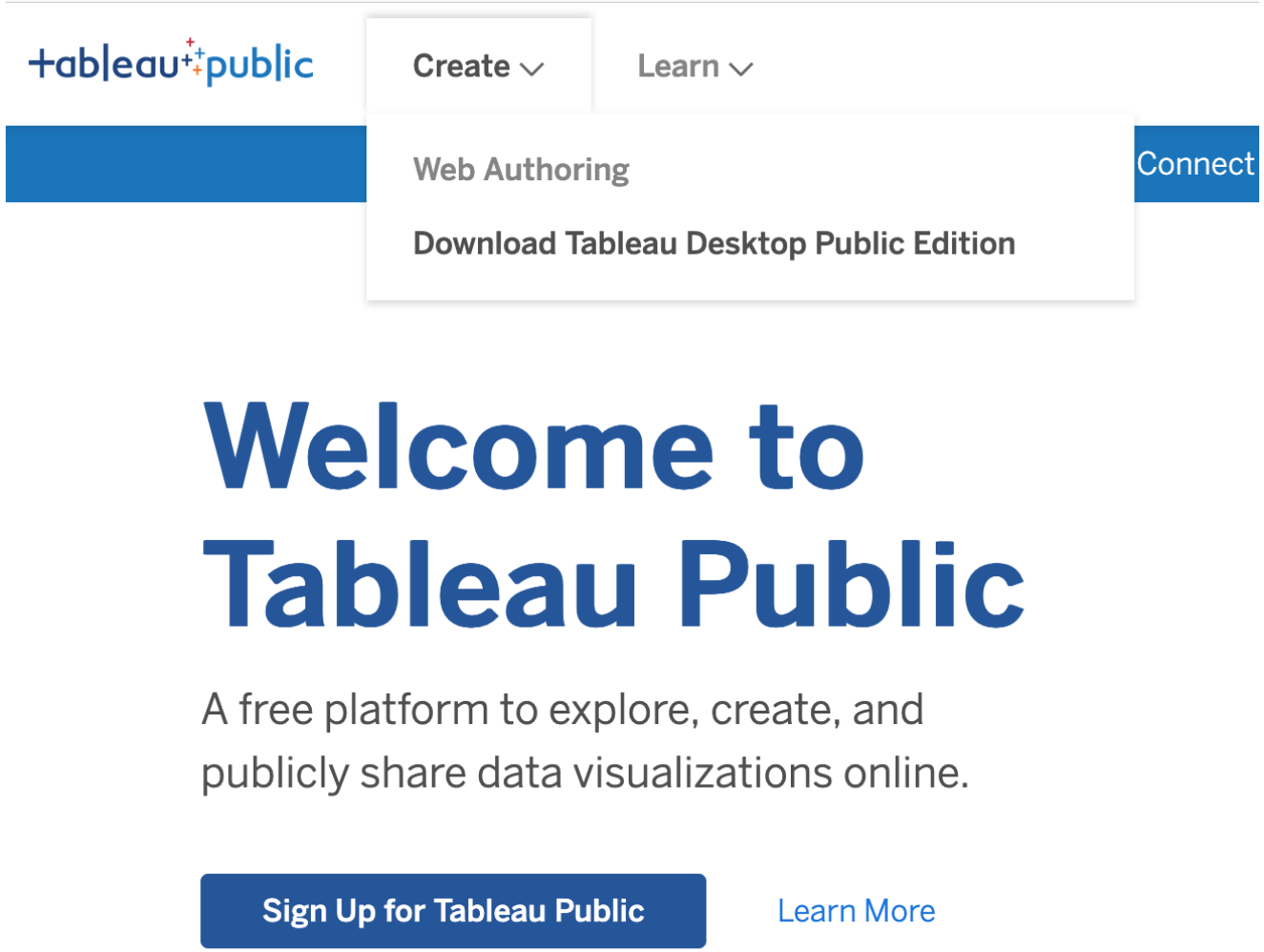


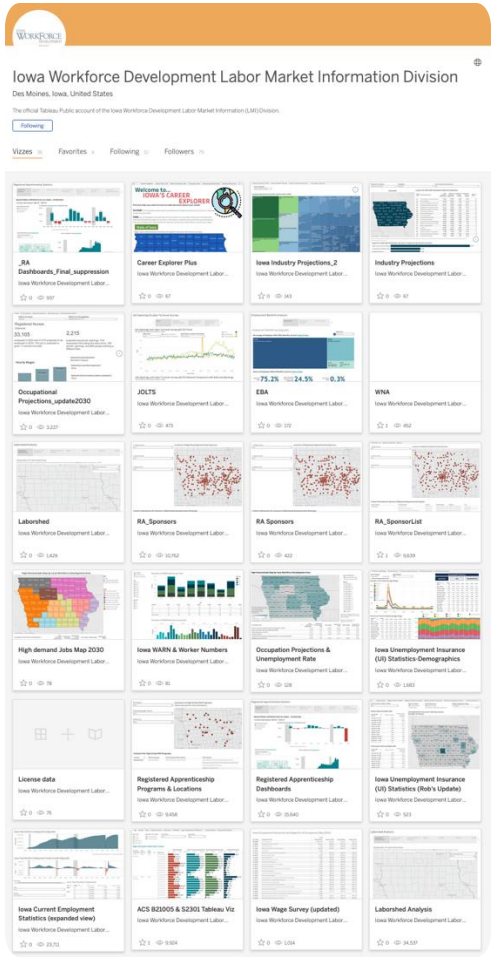
Tableau Desktop vs Tableau Public

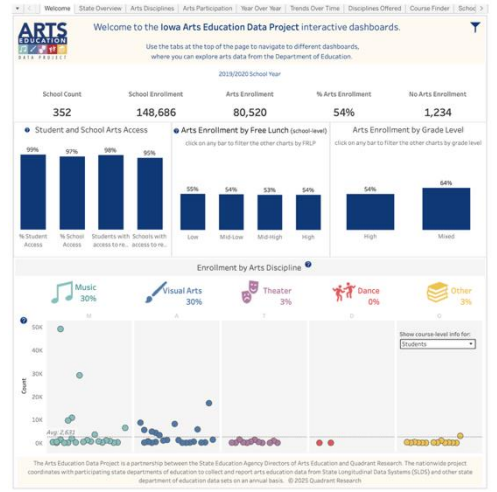
Comparison guide

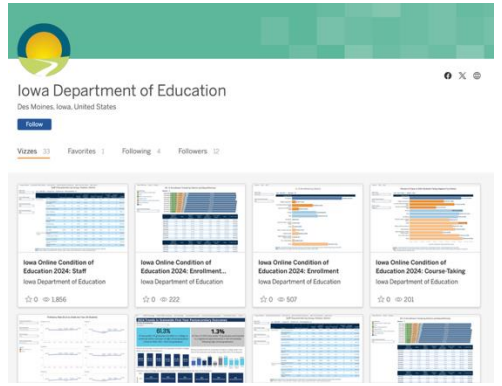
Features and Capabilities	Tableau Desktop Public Edition (free)	Tableau Desktop
Privacy and security	✓	✓
Save visualizations locally	✓	✓
Autorecovery	✓	✓
Unlimited storage	✓	✓
Publish or embed visualizations on other public sites	✓	✓
Download or copy published workbooks	✓	✓
Publish visualizations to Tableau Public	✓	✓
Infrastructure deployment	✓ (Infrastructure available at no cost)	Self-hosted on premise (Role-based licenses)
Share visualizations to Tableau Cloud or Tableau Server	✗	✓
Live data refresh	Limited data refresh (Google Sheets only. Data is refreshed automatically once every 24 hours)	✓
Data sources	Limited data source options (Google Sheets, JSON files, Microsoft Excel 2007 or later, OData, PDF, Spatial files, Statistical files, Text files, and more with Web Data Connector)	✓ (Can connect to all data sources)
Data source row limit	15M rows	Unlimited
Monitoring and metrics	Limited monitoring and metrics	✓

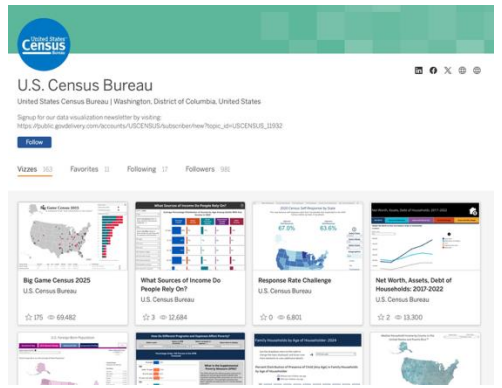
Sharing Data with Tableau Public

- Iowa Workforce Development
- Iowa Department of Education
- Arts Education Data Project https://artseddata.org/iowa/
- U.S. Census Bureau

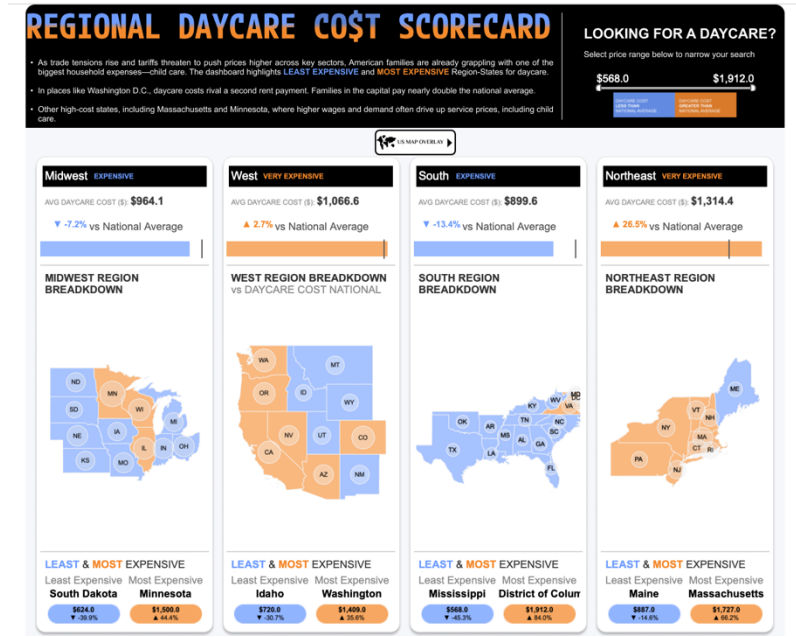


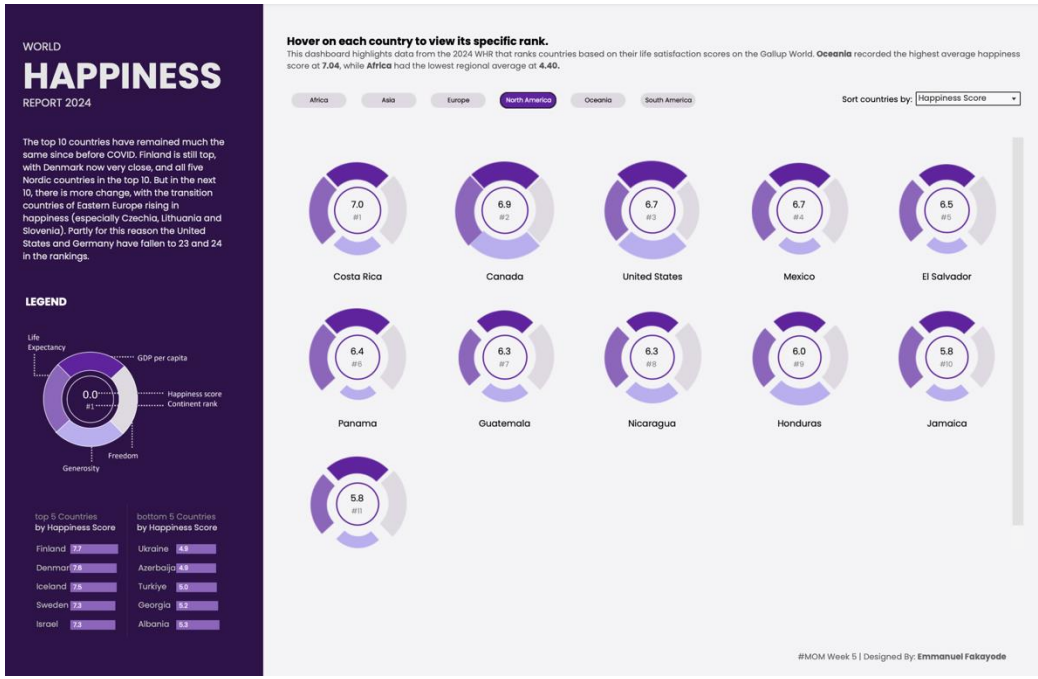






Viz of the Day

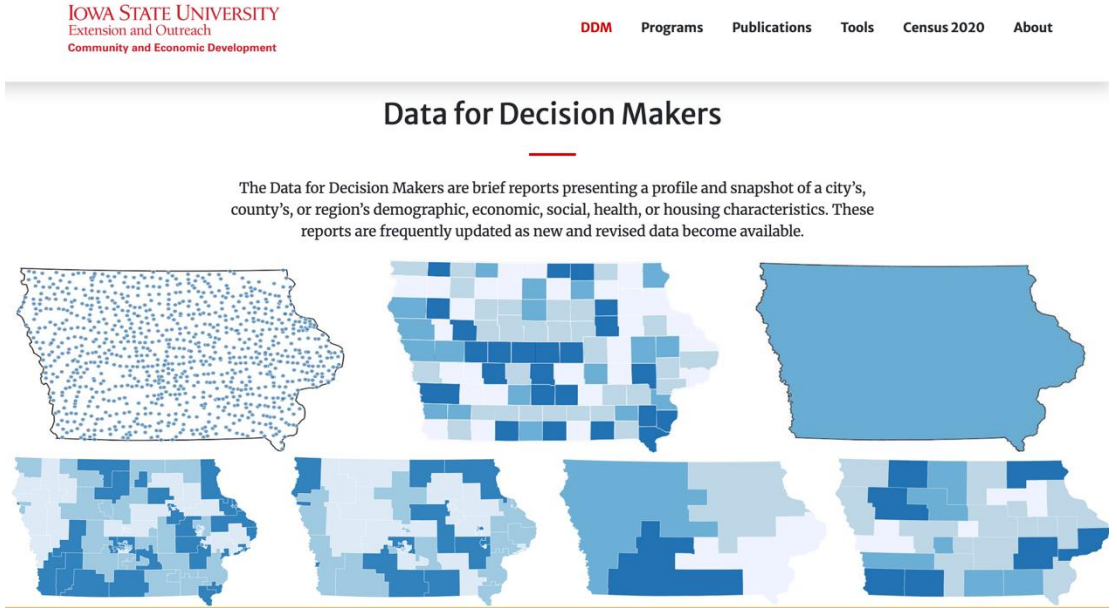


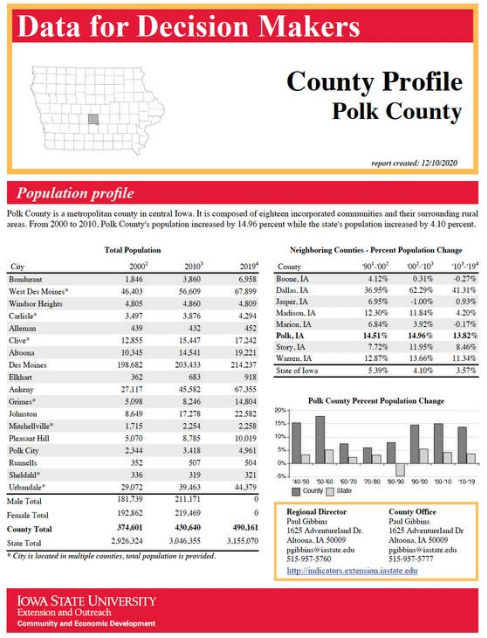


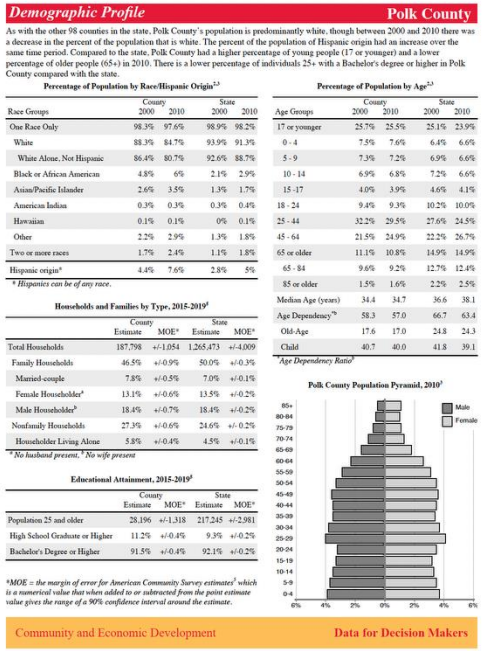
How we are using Tableau

Data Team

- Data Team within Iowa State University Extension and Outreach Community & Economic Development
- Slowly growing team since 2013 – recently adding two new employees with focus on data literacy
- https://indicators.extension.iastate.edu/
- Data for Decision Makers

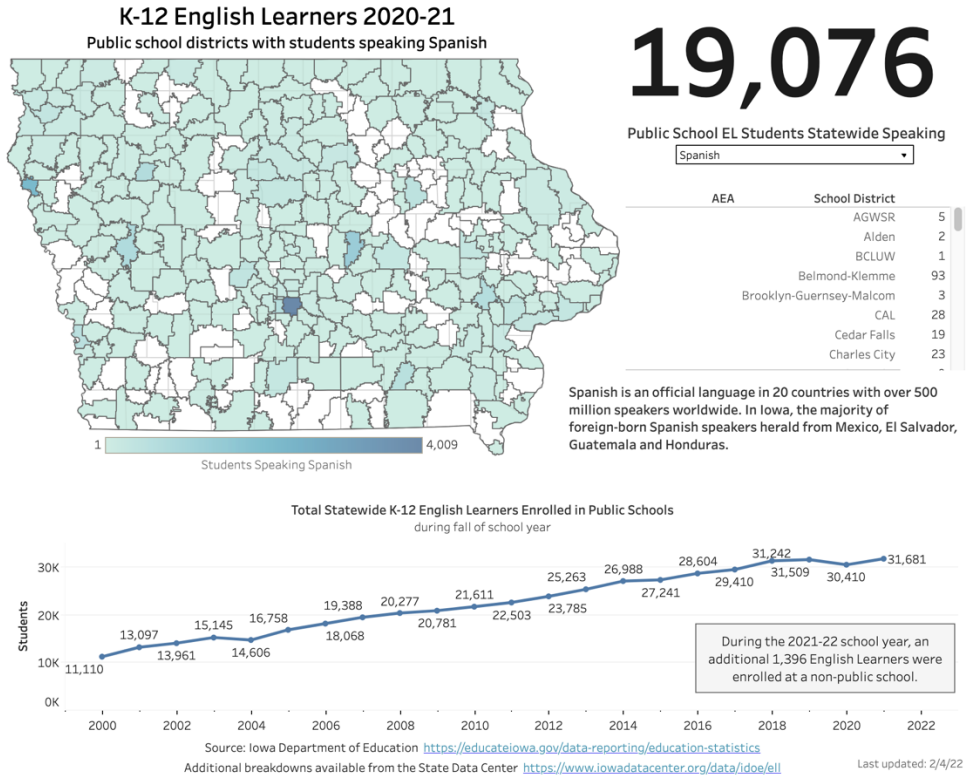






Data Team

- We have gotten into Tableau as a way of creating interactive visualizations rather than just providing the static PDF reports
- Expands the opportunities for the data and stories we can share – can provide more information/detail than can be provided in a PDF

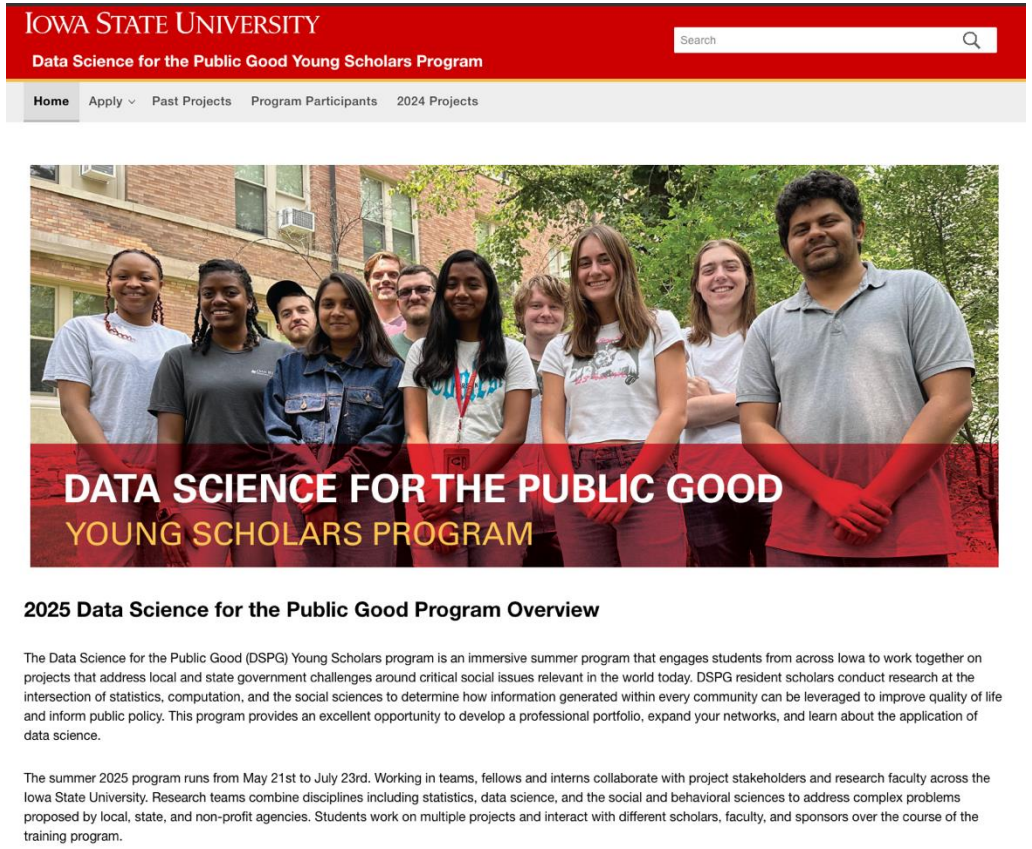


Teaching with Tableau

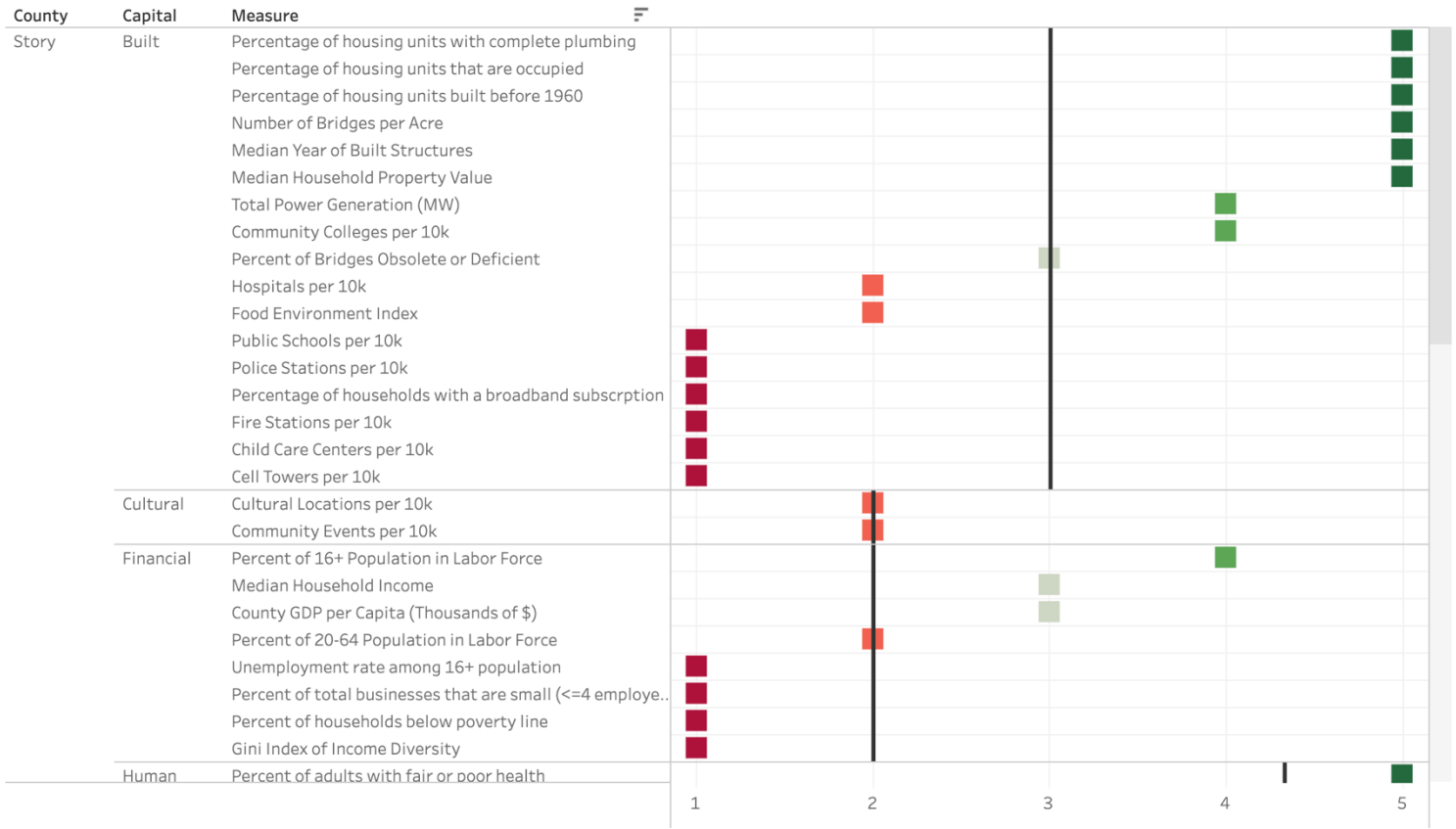
- Grant from the Midwest Big Data Hub to develop and deliver a pilot workshop on community data and Tableau Public
- Colleague using Tableau Public in their for-credit university course

Evaluating Community Capitals

- Summer 2024 students worked on collecting data measures related to the 7 community capitals at the county and city level based on lit review
- Created a Tableau dashboard at the end of the program to showcase the data
- Over 80 measures from nearly 20 data sources



Evaluating Community Capitals



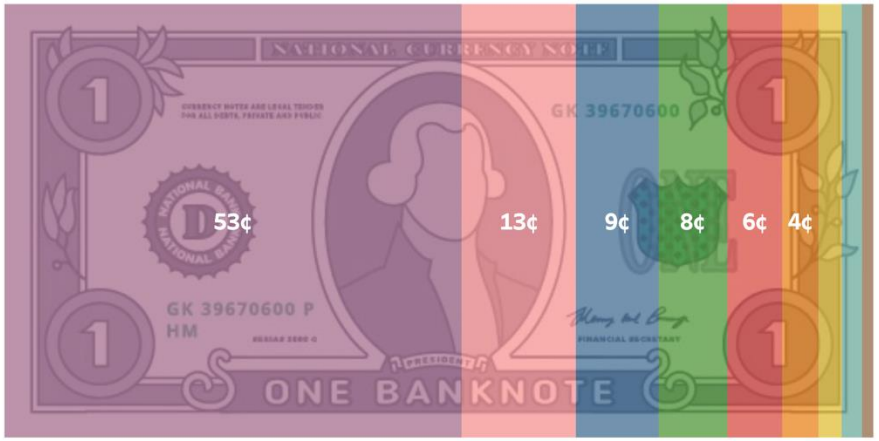
Other Examples

City General Fund Expenditure by Budget Category: Dollar Bill *Planning* Tool

Visualize your city's planned general fund expenditures with this interactive Dollar Bill *Planning* Tool. Building upon ISU Extension Community & Economic Development's original Dollar Bill Tool, which displays current spending, this new planning tool empowers communities to create a custom dollar bill for planning purposes, projecting their budgeted expenditures. It offers a clear visual representation of how planned expenses are distributed across different budget categories, facilitating informed decision-making and community engagement.

How to use this tool:
1. **Locate the Budget Categories:** On the right side of the dollar bill graphic, you will find the main budget expenditure categories.
2. **Enter Planned Expenditures:** For each category, enter your city's *planned* expenditure amount for the upcoming budget cycle in the corresponding input field.
3. **Observe the Visual:** As you enter the planned amounts, the dollar bill graphic will automatically update.
4. **Understand the Representation:** The shaded portion of the dollar bill for each category represents the proportion of your total *planned* general fund expenditures allocated to that category. For example, if your total budgeted general fund expenditures are $100,000, and you enter $40,000 for the "public safety" category, approximately 40% of the dollar bill will be shaded in light purple, visually indicating that 40 cents of every general fund dollar is planned for public safety.

Important Note: Ensure that the sum of your planned expenditures across all categories represents your total budgeted general fund expenditures.



Public Safety	100,000
Public Works	25,000
General Government	15,000
Culture & Recreation	12,000
Community & Economic De...	8,000
Capital Projects	18,000
Health & Social Services	5,000
Transfers	2,500
Debt Service	4,500
Total:	**$190,000**

Public Safety
Public Works
Capital Projects
General Government
Culture & Recreation
Community & Economic Development
Health & Social Services
Debt Service
Transfers

Contact erinm1@iastate.edu with questions

IOWA LEAGUE of CITIES

IOWA STATE UNIVERSITY
Extension and Outreach
Community and Economic Development

This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to www.extension.iastate.edu/legal.

City General Fund Expenditure by Budget Category, FY 2025

The dollar bill tool below shows the categories in which the selected city spends, or invests in, from its general fund. It represents how much of every dollar of revenue that comes to the city goes to each of the functions below by budget category. For example, if a city spends 35 cents of every general fund dollar on public safety, the dollar bill will show 35 cents for that category. Property tax revenues make up a significant portion of general fund revenues (about 54% for fiscal year 2025).

For more detailed information on general fund revenues and expenditures by category, see the ***City General Fund Revenue and Expenditures*** reports at: https://indicators.extension.iastate.edu/Indicators/Publications/?.
Use the drop-down menu to the right to select a city.

2025 | AMES

** Calculated values are rounded to the nearest cent which may add up to a total slightly more or less than $1.00*

Data Source: Iowa Department of Management

Budget Category
- Public Safety
- Public Works
- Culture & Recreation
- Health & Social Services
- Transfers
- Debt Service
- General Government
- Capital Projects
- Community & Economic Development

For more details on the source of average city general fund revenues visit the chart below.

Average City General Fund Revenues by Source

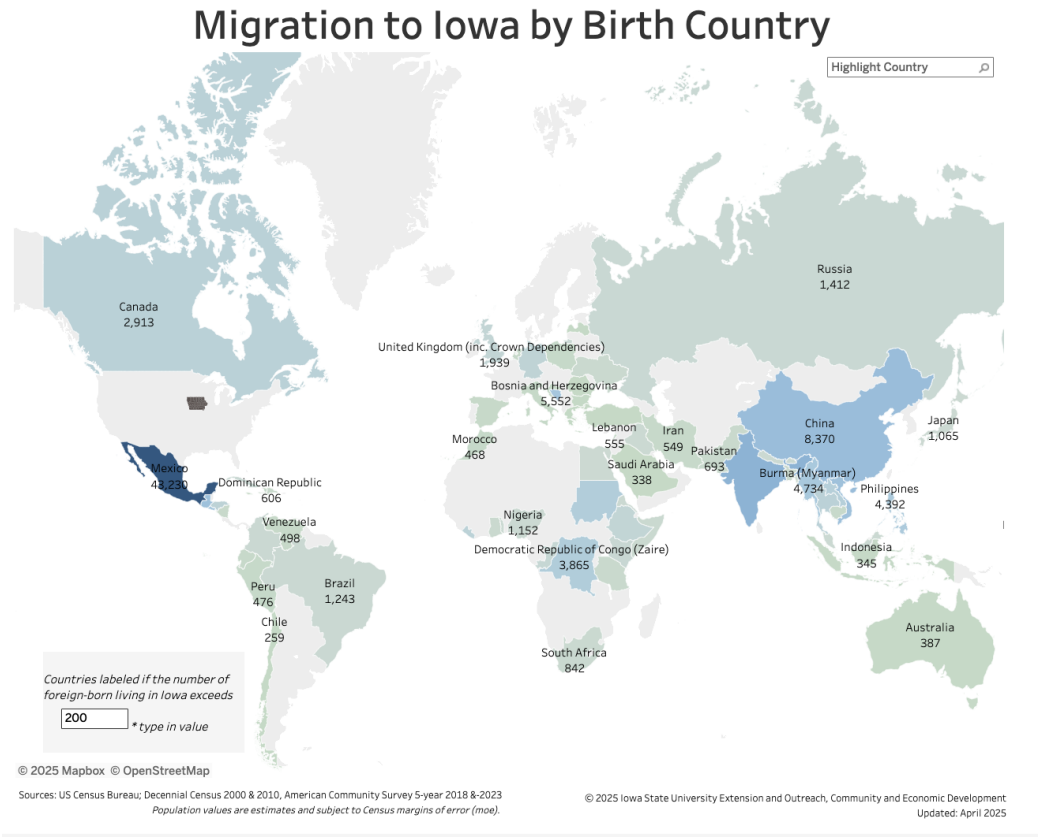
IOWA LEAGUE of CITIES

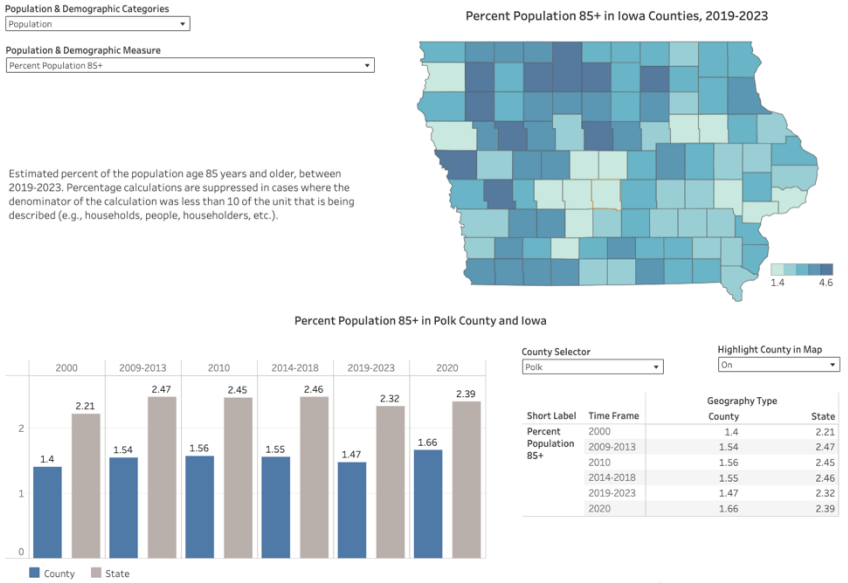
IOWA STATE UNIVERSITY
Extension and Outreach
Community and Economic Development

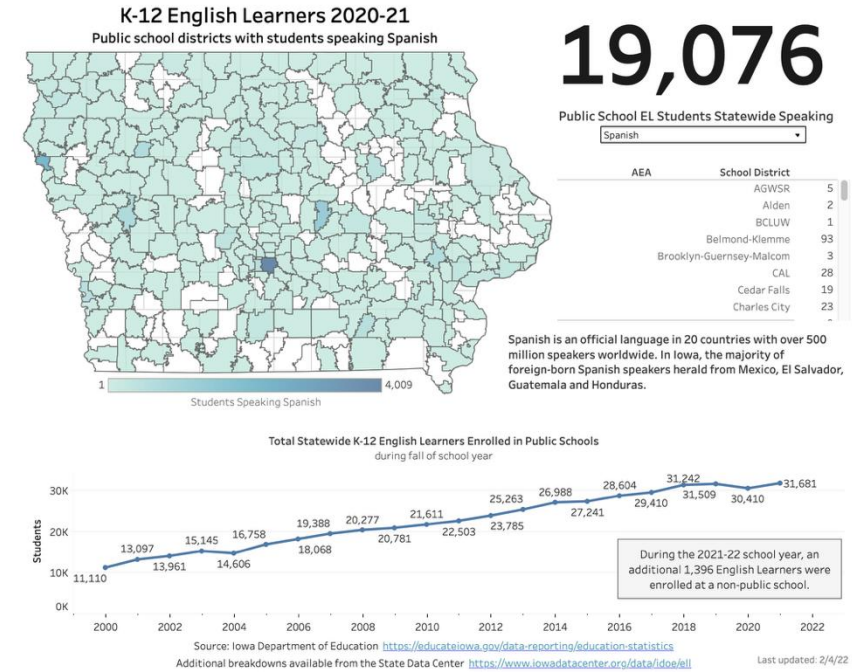
Contact erinm1@iastate.edu with questions

This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to www.extension.iastate.edu/diversity/ext.

Other Examples





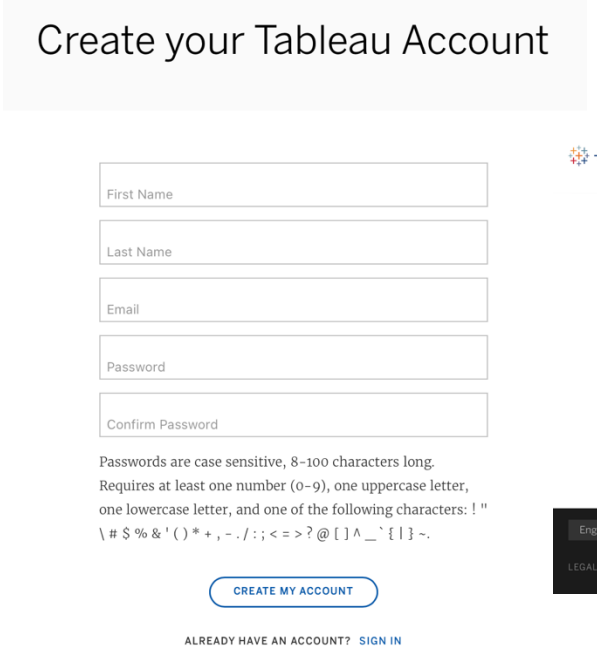


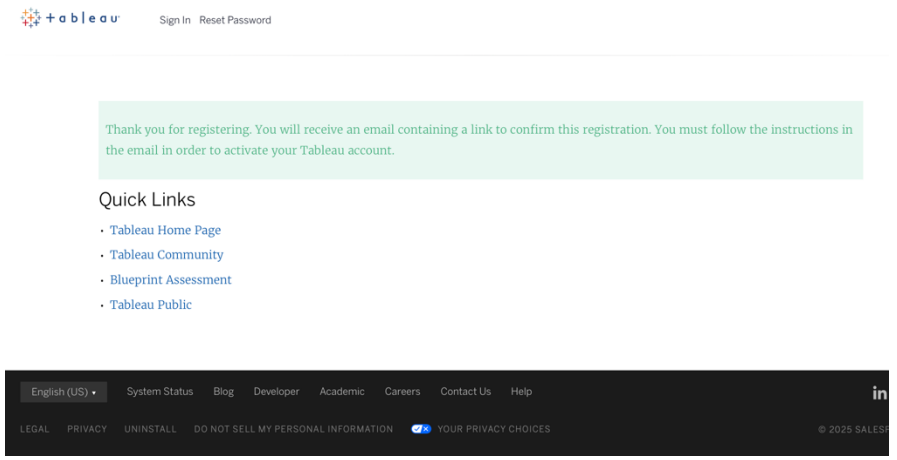
Hands on Tutorial

Iowa Public Library Statistics

Create Tableau Public Account

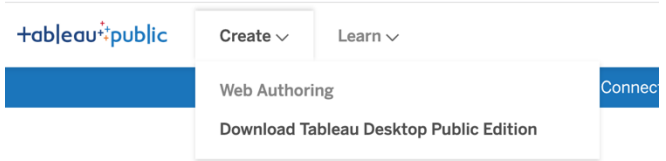
- Go to public.tableau.com
- Click **Sign Up for Tableau Public**
- You will receive an email containing a link to confirm this registration. You must follow the instructions in the email in order to activate your Tableau account
- **Sign in** with your new account information

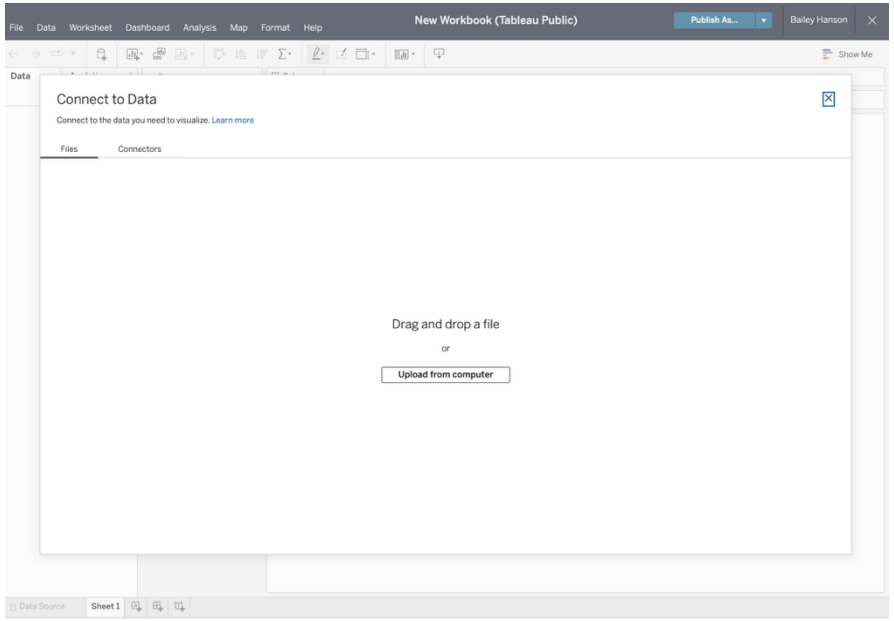




Create a New Workbook

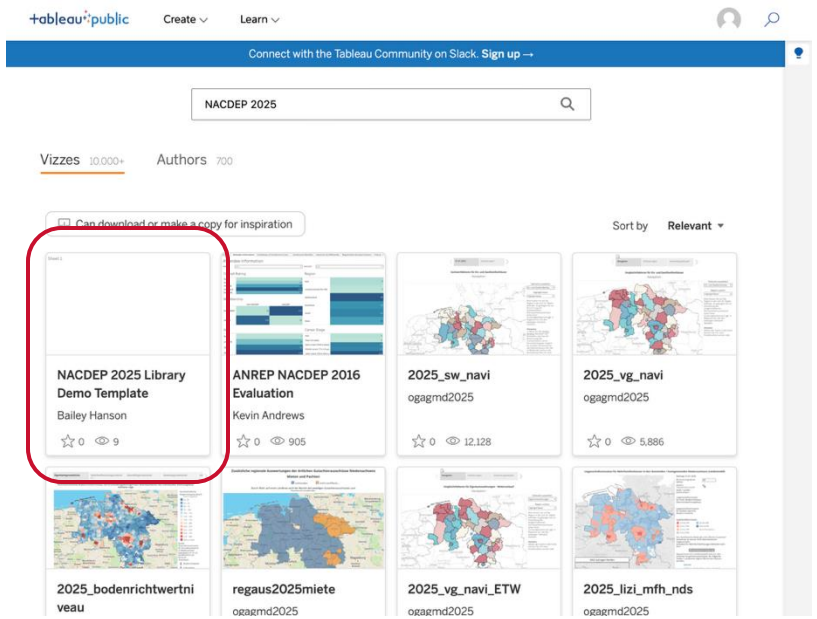
- Usually, you would click **Create** then **Web Authoring** to start a new workbook
- A new workbook would open asking you to connect to data
- But we are going to start with a template that already has data loaded





Make a Copy

- Search **NACDEP 2025** in Tableau Public
- Select **NACDEP 2025 Library Demo Template**
- Select **Make a copy**
- When the workbook opens, click **Publish As…** and give the project a name and click **Publish**



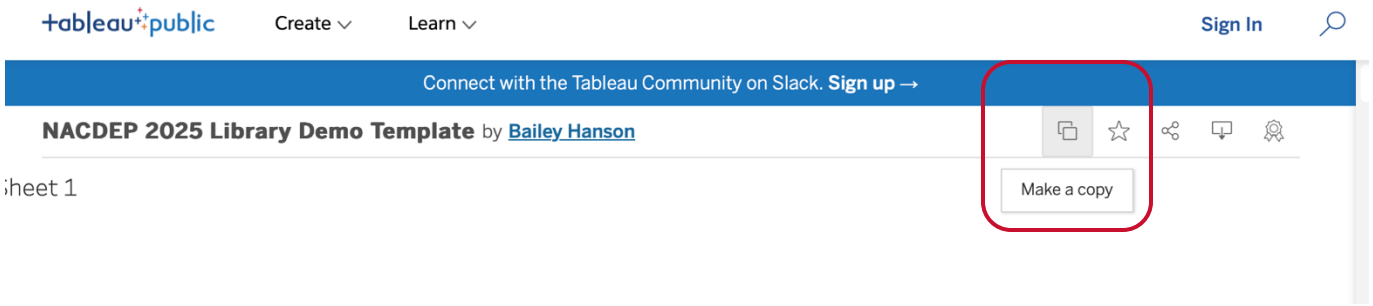
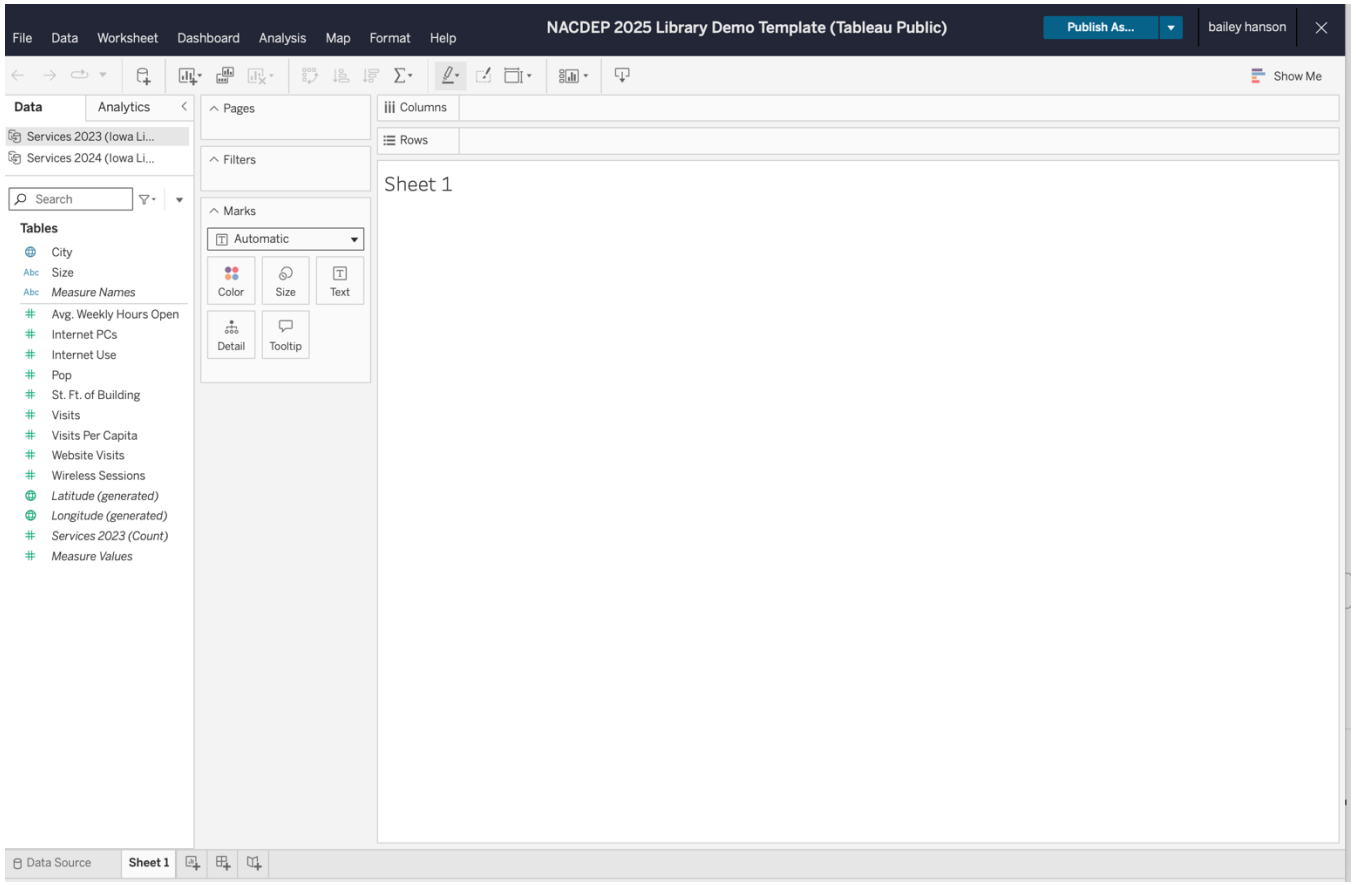


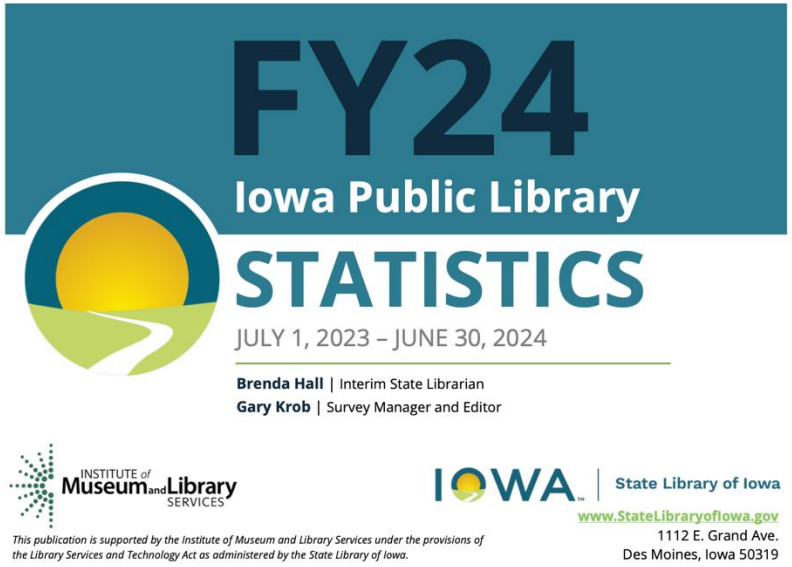
Tableau Workbook from Copy

- You now have a Tableau workbook saved to your public account that already has the data sources you need to start



Iowa Library Statistics Data

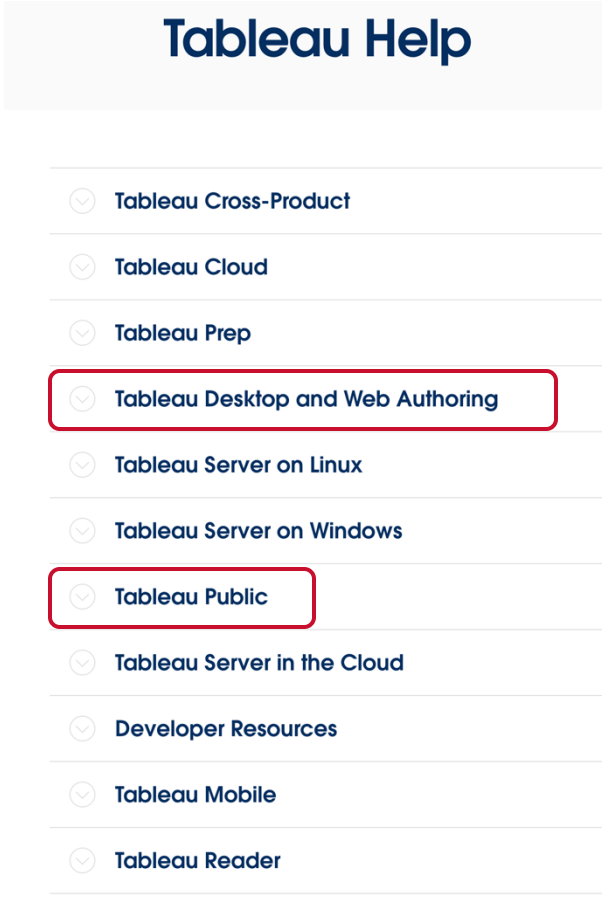
- The Public Libraries Survey (PLS) from The Institute of Museum and Library Services
- Iowa Public Library Stats Report – data provided as tables within a PDF report
- Created an Excel file from the tables in the PDF on library services (visits, public internet usage, etc.)

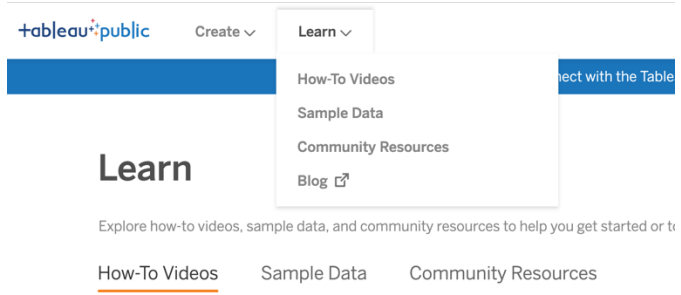


Demo in Tableau Public

Tableau Public Learning Resources

- Tableau Public Learn
- help.tableau.com





IOWA STATE UNIVERSITY
Extension and Outreach

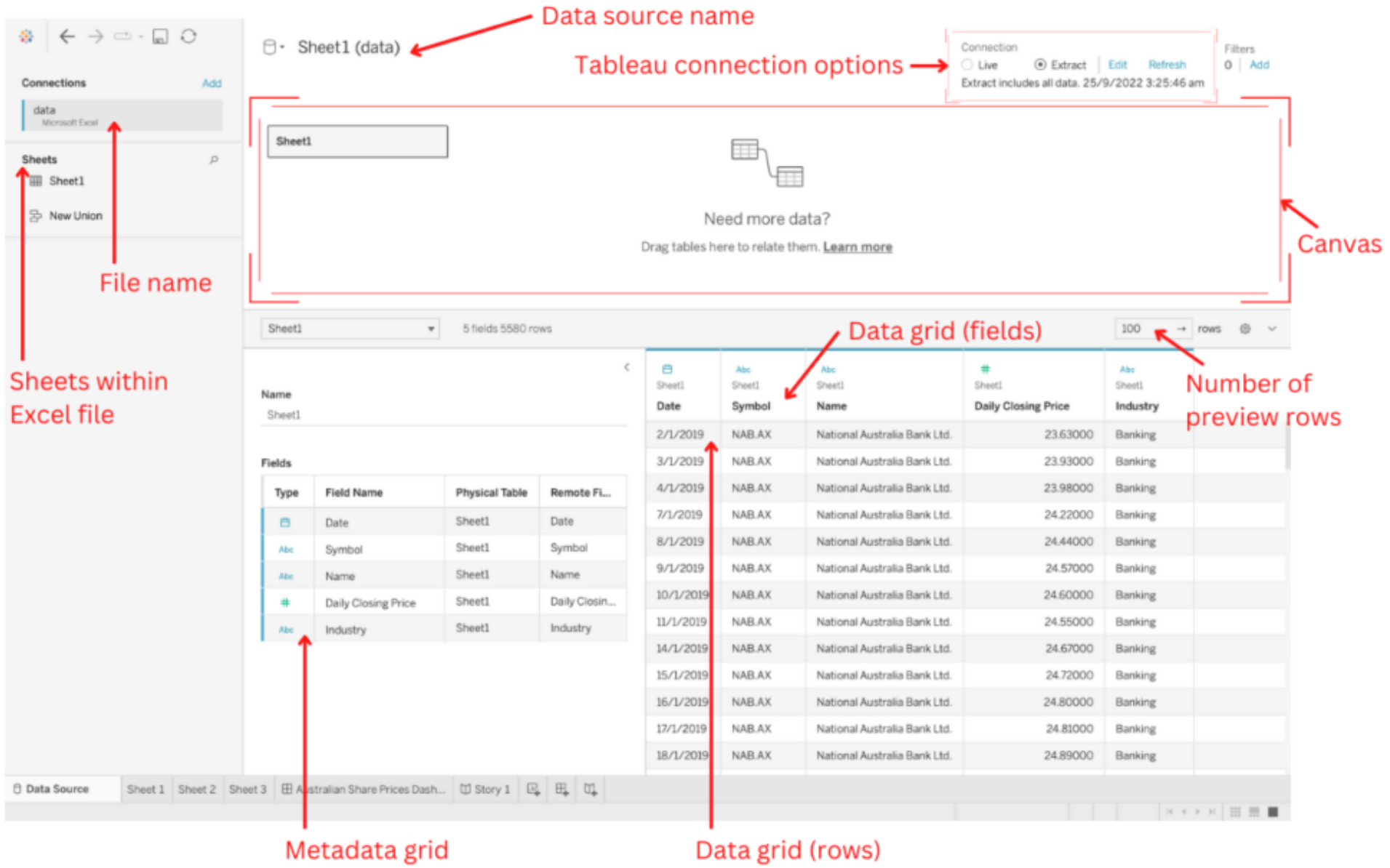
Questions?

Bailey Hanson
Data Analyst III
Iowa State University Extension and Outreach

bahanson@iastate.edu

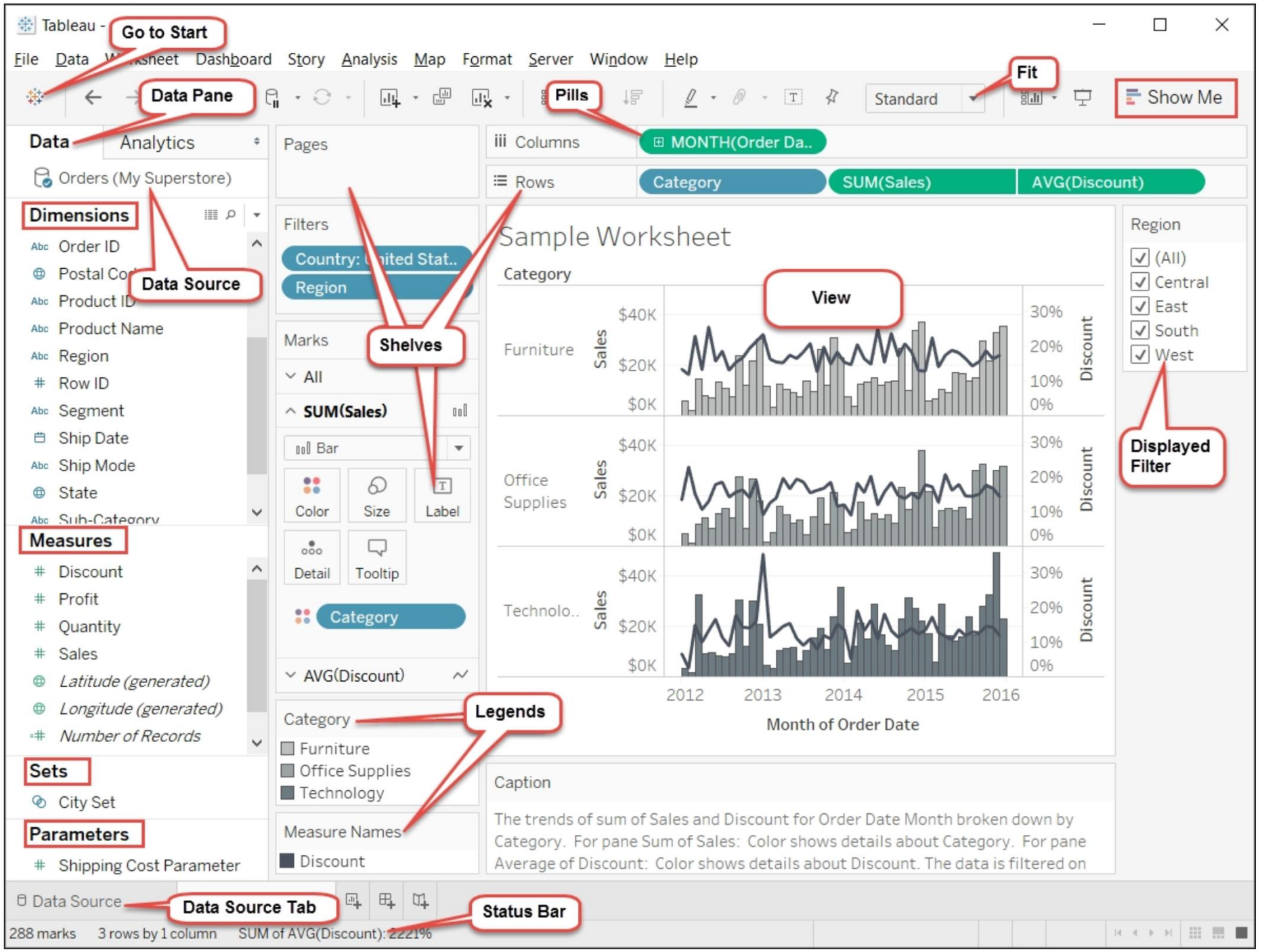
Data Source Interface

Source: Tableau Help



Worksheet Design Interface

Source:
O'Reilly *Mastering Tableau* by David Baldwin

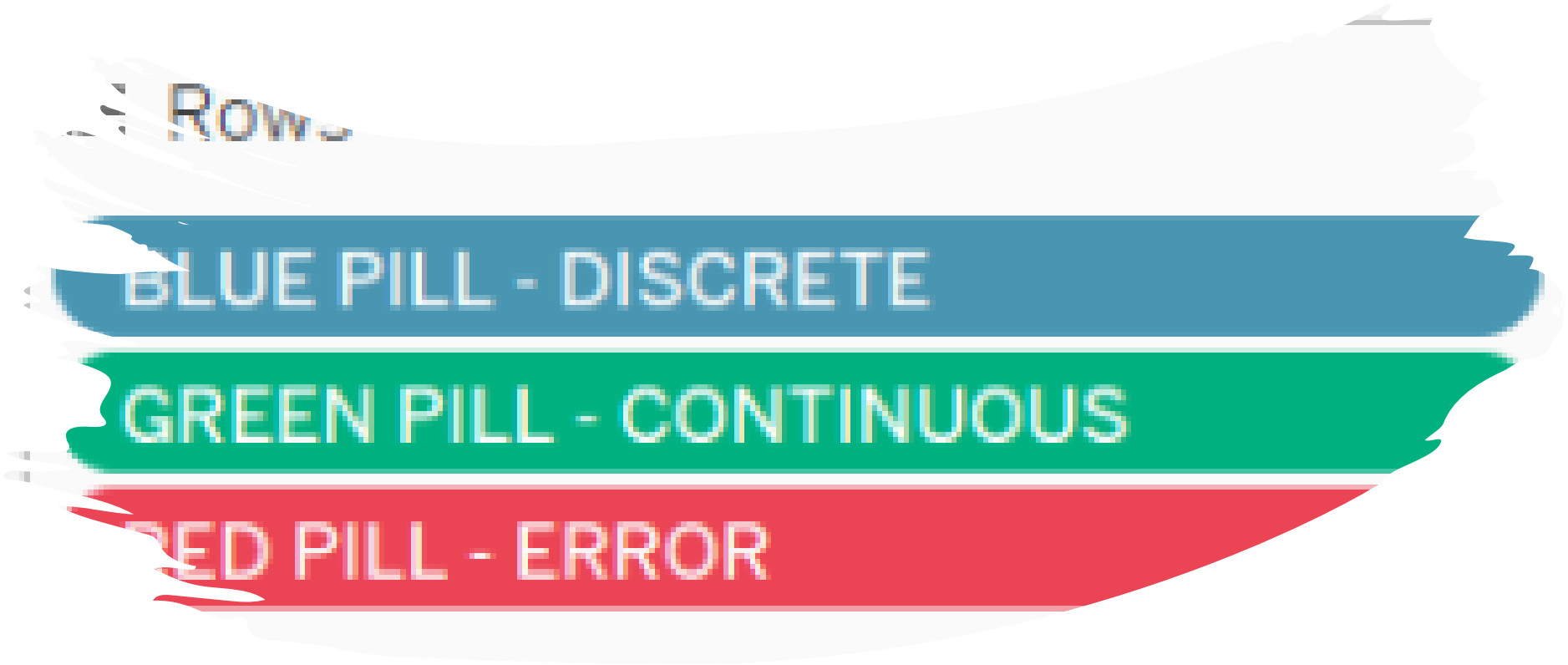


Data Categories: Dimension vs Measures Blue and Green Pills

- ***Dimensions* are qualitative**, meaning they can't be measured but are instead described. Dimensions are often things like city or country, eye color, category, team name, etc. Dimensions are usually discrete.
- ***Measures* are quantitative**, meaning they can be measured and recorded with numbers. Measures can be things like sales, height, clicks, etc. In Tableau Desktop, measures are automatically aggregated; the default aggregation is SUM. Measures are usually continuous.

Data Categories: Dimension vs Measures Blue and Green Pills

- *Discrete* means individually separate or distinct. Toyota is distinct from Mazda. In Tableau Desktop, discrete values come into the view as a label and they create panes.
- *Continuous* means forming an unbroken, continuous whole. 7 is followed by 8 and then it's the same distance to 9, and 7.5 would fall midway between 7 and 8. In Tableau Desktop, continuous values come into the view as an axis.
- Dimensions are usually discrete, and measures are usually continuous. However, this is not always the case. Dates can be either discrete or continuous.



A shorter answer …

Dimensions usually cannot be aggregated (summed, averaged etc), whereas measures can be.