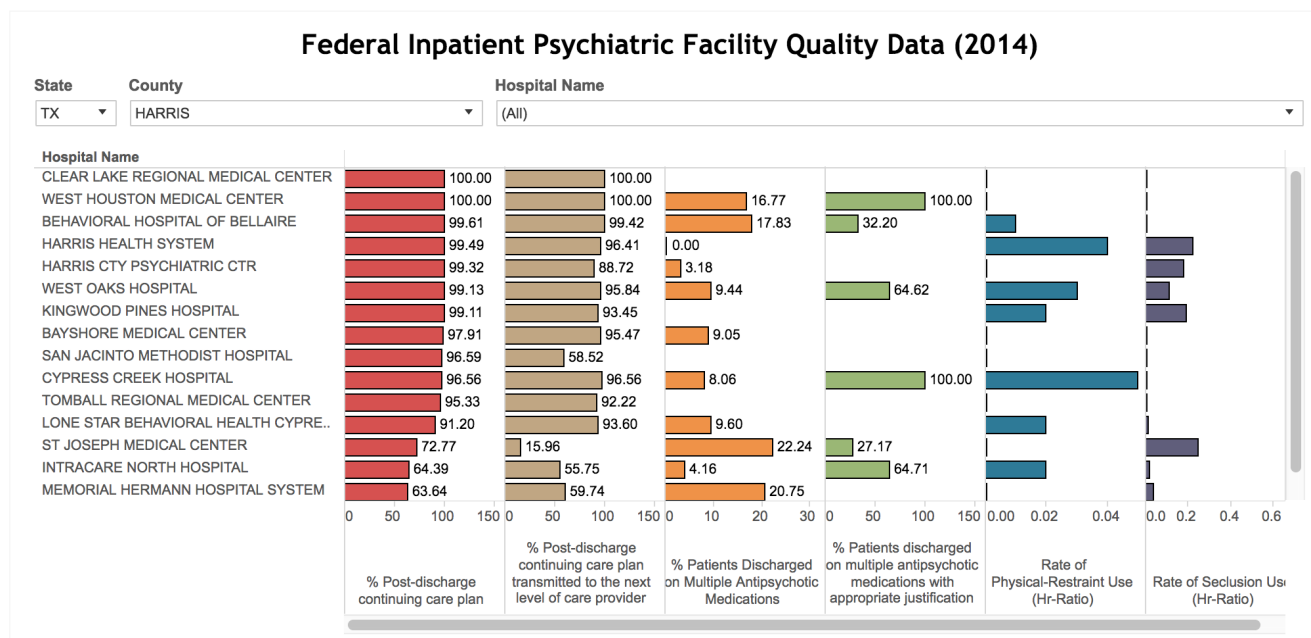


# 20.3 The Answer, My Friend, Is Tableauring in the Wind

## 01. Students Do: Psychiatric Health Care (0:30)

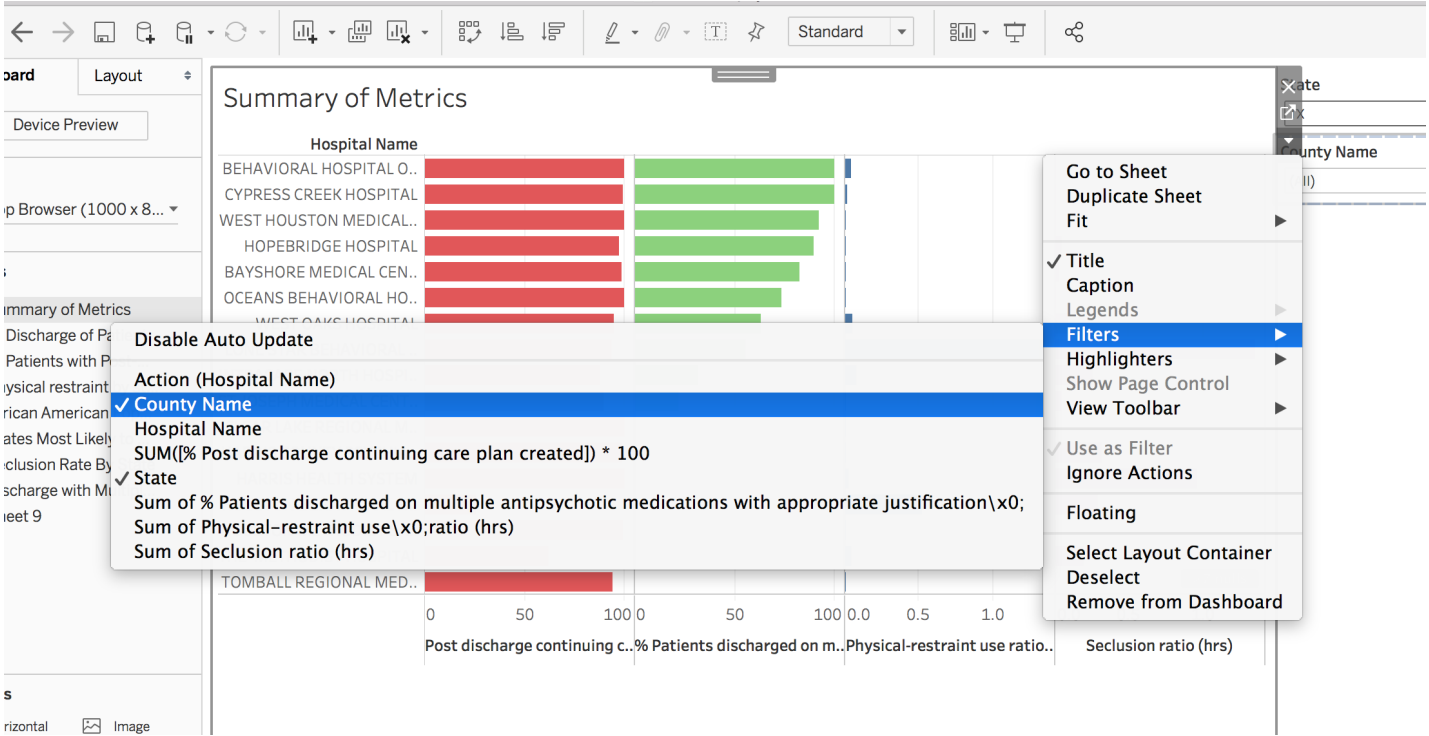
- **Instructions:** [Activities/01-Stu\\_Healthcare/readme.md](#)
- In this warm-up activity, students will work with 2014 data on in-patient psychiatric patient care in hospitals across the United States.
- The data set contains information on, among other things:
  - The number of patients who were discharged with a continuing care plan
  - The number of patients who were discharged with multiple anti-psychotic medications
  - The use of physical restraint
  - The use of seclusion
- Students will first have to clean the data, at a minimum fixing the column headings. They will use the included **HBIPS\_Measure\_Sets.pdf** to accomplish this task.
  - For example, HBIPS3 in the CSV refers to the use of seclusion, in hours.
- Students should first come up with a dashboard summary that resembles the following.



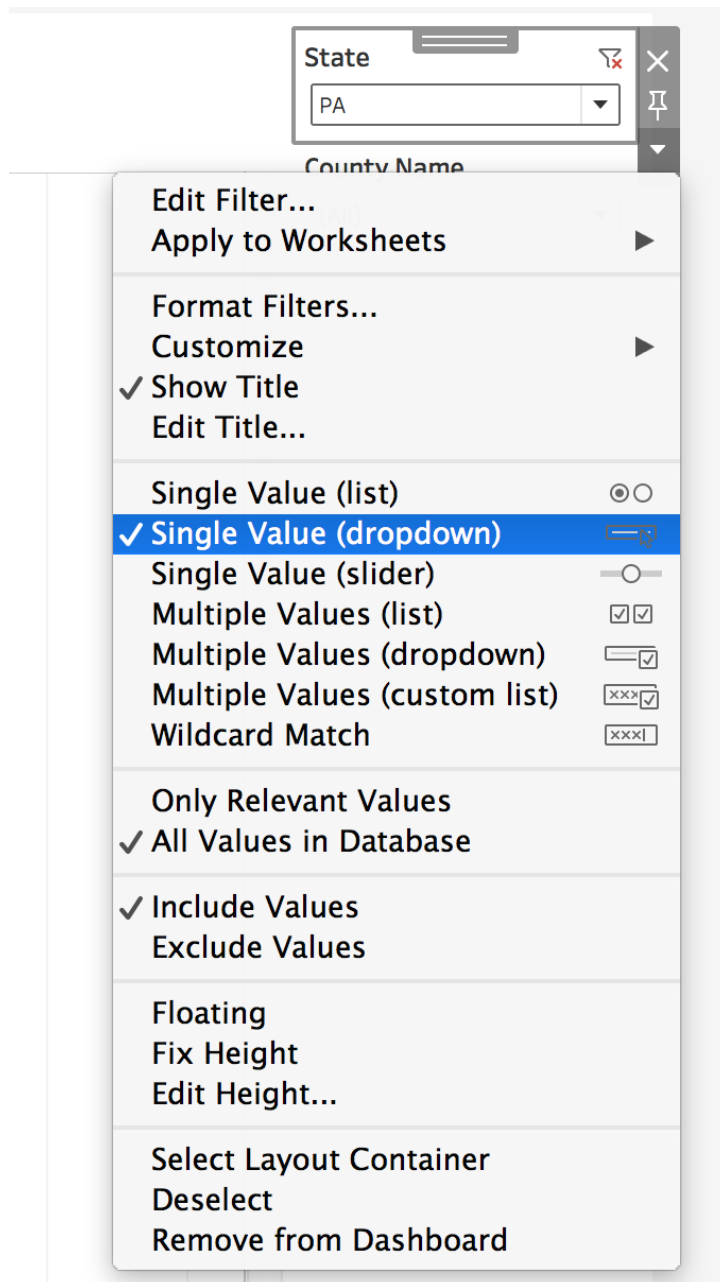
- Afterwards, they will create additional visualizations of their choosing. This activity will focus on data exploration, rather than obtaining pre-defined visualizations. Students are encouraged to come up with interesting and creative visualizations, and they are free to bring additional data sources into the workbook.
- Encourage students to slack out screenshots of interesting visualizations.

## 02. Instructor Do: Review Activity (0:10)

- **File:** [Activities/01-Stu\\_Healthcare/Solved](#)
- If necessary, take a few minutes to review the basics of creating a dashboard and filters. In the current example, dropdown menus are employed.
  - In the dashboard, click on the downward pointing arrow to access the filters submenu, then choose the filter.

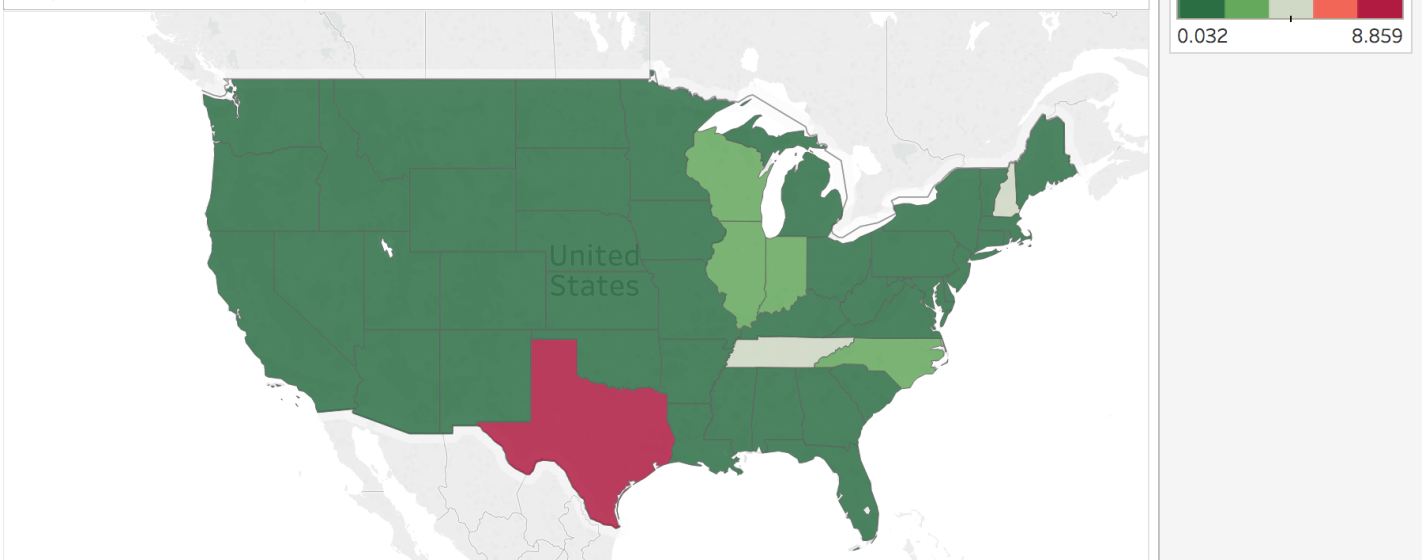


- Then click on the downward pointing arrow in the *filter* box to choose a dropdown menu.



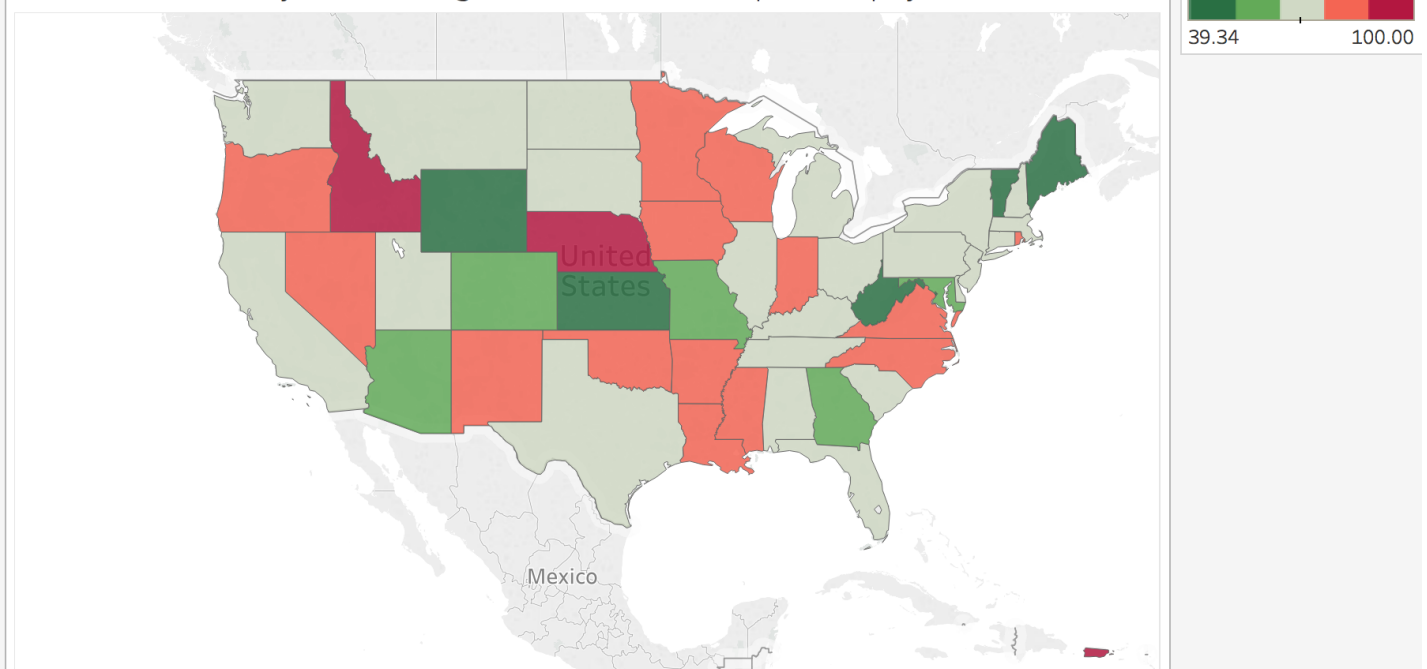
- Also go over the visualizations in the instructor example, as well as visualizations created by students.
  - For example, Texas stands out as a state in which physical restraint is used, or at least reported, more than in other states.

## Physical restraint by state



- Nebraska, Idaho, and Puerto Rico stand out as places where patients are likelier to be discharged with multiple antipsychotic medications.

## States Most Likely to Discharge Patients on Multiple Antipsychotics

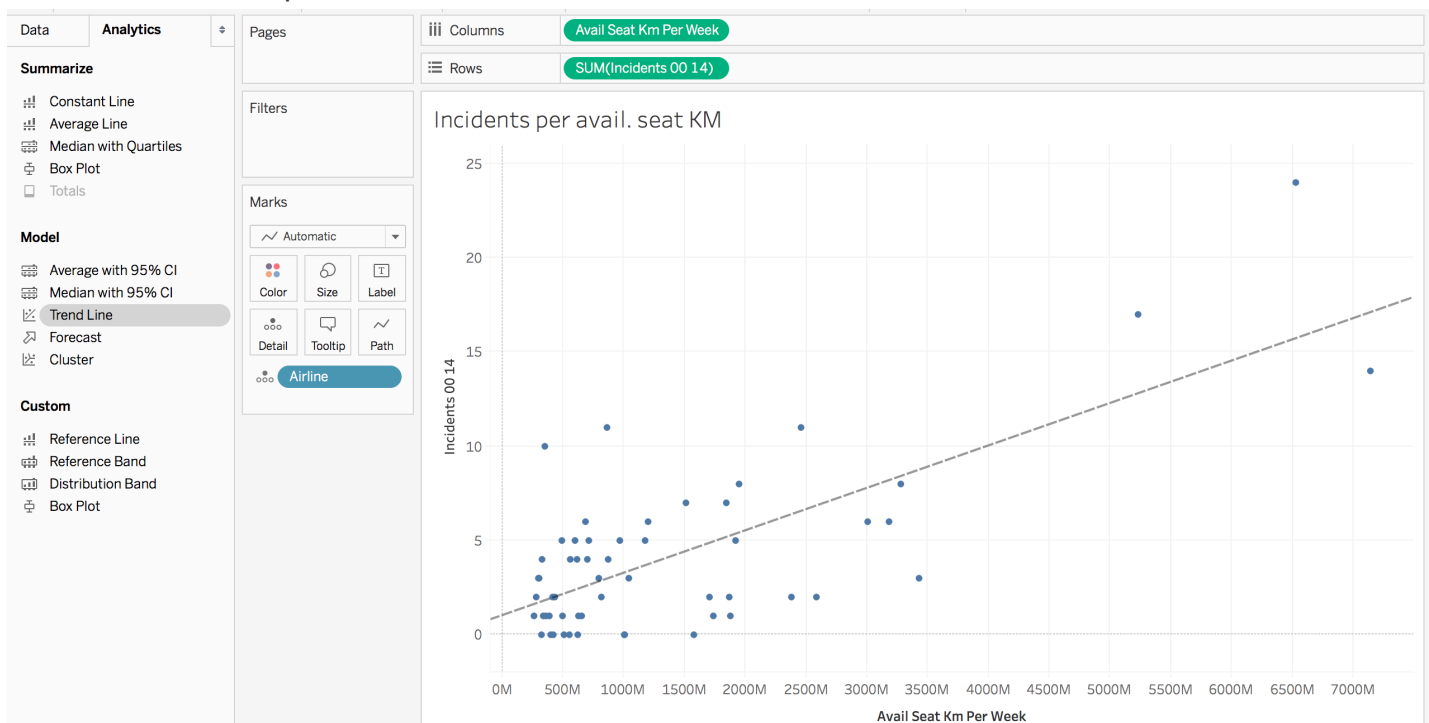


### 03. Students Do: Airline Safety (0:15)

- **Instructions:** [Activities/02-Stu\\_Airline/readme.md](#)
- In this activity, students will explore the safety of the world's airlines. The data set used here is from [fivethirtyeight.com](#)
- It will be an open-ended exploration of the data, but some questions to consider might be:
  - What are the safest airlines in the world, and how do we define the idea of safety?
  - Can we group airlines by region to determine whether some regions have better track records than others? What are some possible fallacies of this approach?

## 04. Instructor Do: Review Activity (0:05)

- **File:** [Activities/02-Stu\\_Airline/Solved/airline.twbx](#)
- Spend a few minutes reviewing the activity, and having students share their results.
- As noted in the associated [article](#), it may be preferable to take incidents into account, rather than fatalities, as fatalities comprise only a quarter of the total incidents.
- In one of the tabs in the instructor solution, airlines from east and southeast Asia were grouped together in a set, and measured against the rest. The Asian airlines show higher fatalities per available seat kilometer, but it is worth noting that the results amount to a difference of about one in ten million, and it is not immediately clear whether they are statistically significant.
- The last visualization plots the number of incidents against available seat kilometer across all airlines in a scatter plot.



- It appears, as we might predict, that the number of incidents goes up with more miles flown.
- To create a regression line, click on the **Analytics** tab next to the **Data** tab, and click on **Trend Line**.

## 05. BREAK (0:40)

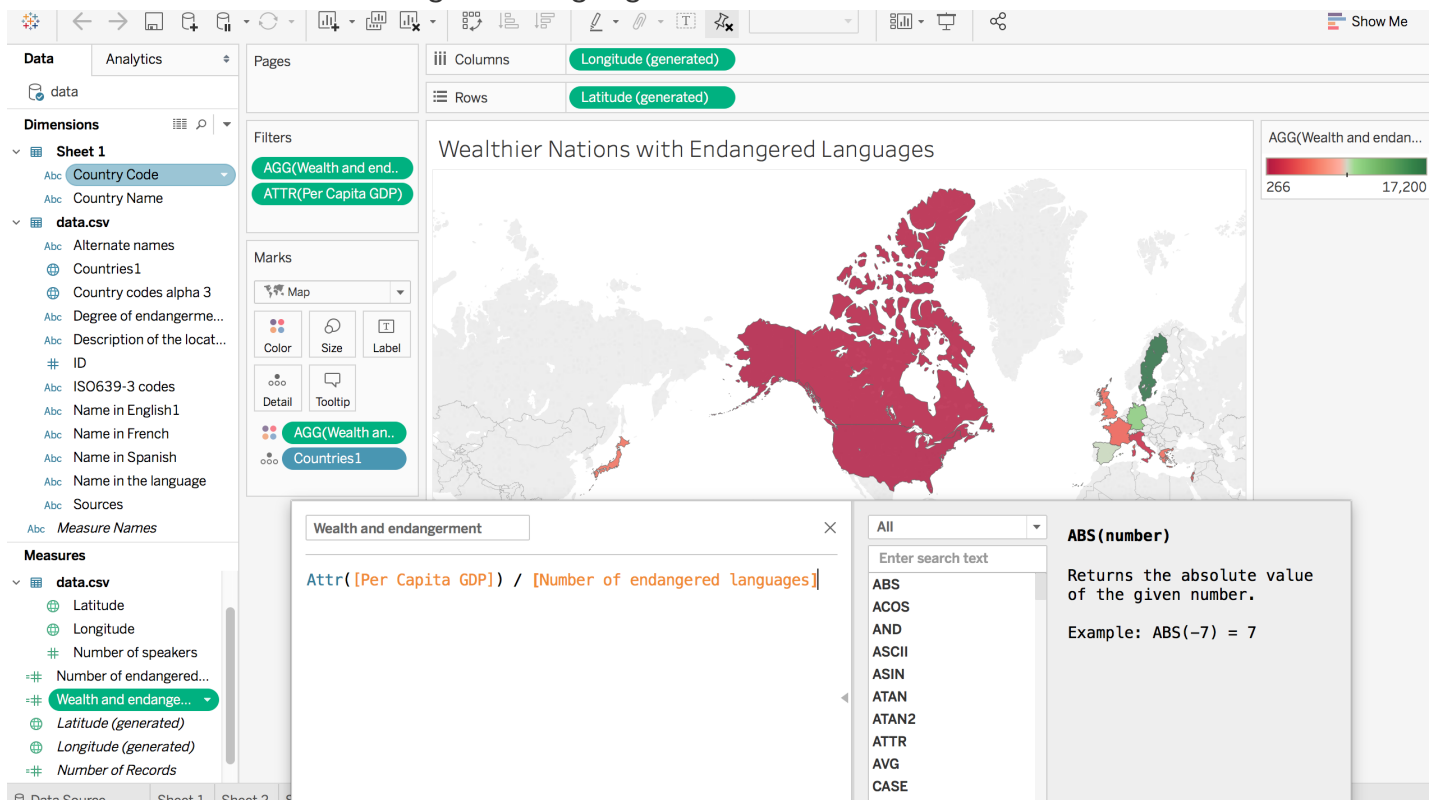
## 06. Students Do: Endangered Languages (0:20)

- **Instructions:** [Activities/03-Stu\\_Languages/readme.md](#)

- In this activity, students will be required to visualize data on the world's endangered languages. In addition, they will join additional data to their data set to create extra visualizations.

## 07. Instructor Do: Review Activity (0:10)

- **File:** [Activities/03-Stu\\_Languages/Solved/languages.twbx](#)
- Take a few minutes to review the activity. In the instructor solution, `Countries.csv` is data downloaded from the World Bank. It was joined to the `data.csv` to create the map in the final tab: **Wealthier Nations with Endangered Languages.**



- A custom field was made to divide a country's per capita GDP by its number of endangered languages. This index is meant to highlight the wealthiest countries with the largest number of endangered languages: in other words, countries that have the greatest responsibility to preserve their dying languages, and have the means to do so.
- A filter has also been applied to select for countries with a minimum per capita GDP of \$15,000 USD.
- The lower the index, the greater the urgency.
- The per capita GDP must be made into an attribute.
- Solicit students for any interesting visualizations they might have created, and discuss them.

## 08. Students Do: Mini Project (0:55)

- In this open-ended activity, students will use their Tableau skills to explore data and create visualizations.

- Students will work in pairs or groups of three.
- They must use at least two data sources.
- They may use their previous group projects for inspiration. However, they should not simply replicate their old projects in Tableau.
- When working with data, they may need to clean it with a tool like Pandas before bringing it into Tableau.
- They will give a brief (3-5 minutes) presentation to the class with a summary of their visualizations and findings.

## **09. Students Do: Presentations (0:55)**

- Groups will deliver a brief presentation of their findings.

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