

Using + a b l e a u[®] to Teach Economics

Jadrian Wooten
Virginia Tech

Marisa Cameron
Pomona College

Problem-solving

88.7%

Team work

78.9%

Written communication skills

72.7%

Strong work ethic

71.6%

Flexibility/Adaptability

70.1%

Verbal communication skills

67.5%

Shawn VanDerziel

NACE Executive Director

The key then is for students to not only develop these competencies, but also to **be able to articulate how they use them in their classwork**, experiential education, student organization activities, and more. Unfortunately, **many students don't effectively identify and communicate about the competencies and skills they've learned** in their college experiences. As a result, **they don't give themselves credit** for the experiences and knowledge they are bringing to an employer. That coupled with students, in general, believing they are more proficient in the competencies than employers rate them as being means **there is an opportunity for students to develop and promote these competencies to stand out** in the job market.

Data scientist jobs

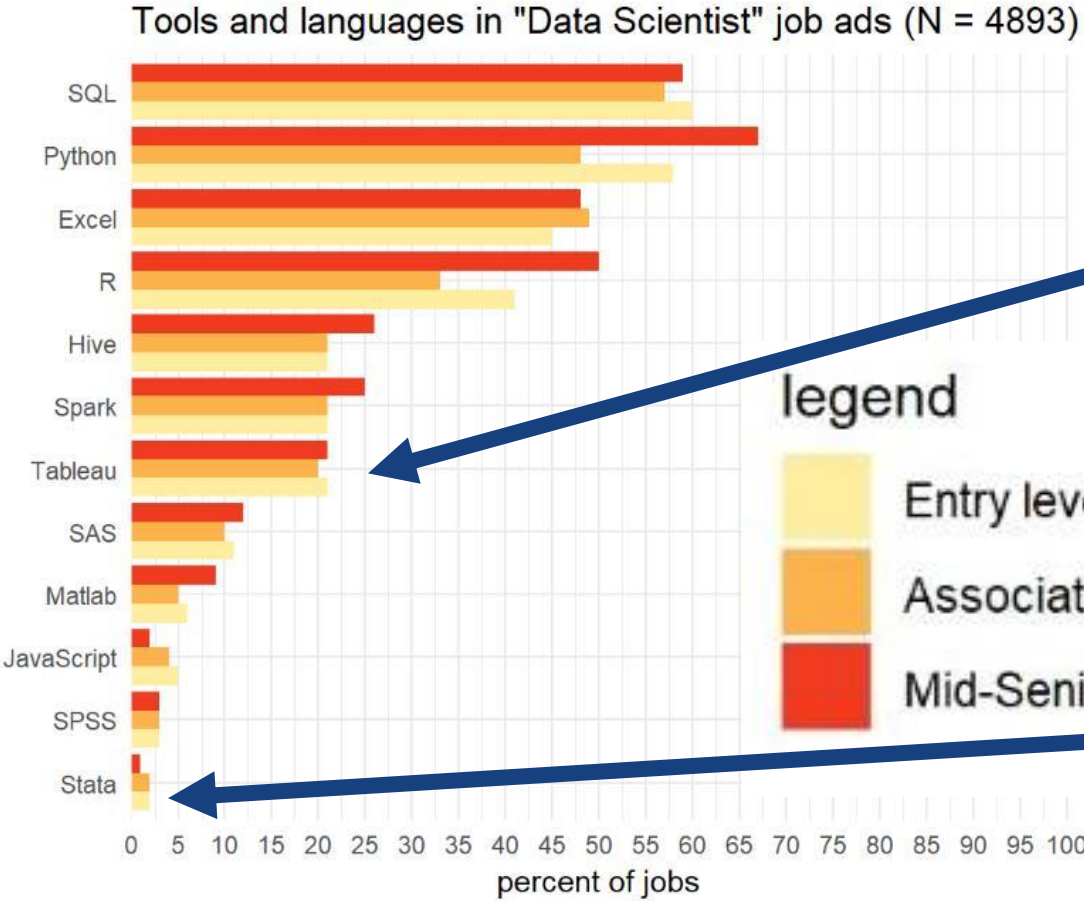
4893 data scientist job ads were included in this analysis.

Tools / languages

Other skills

Degrees

Disciplines



Data analyst jobs

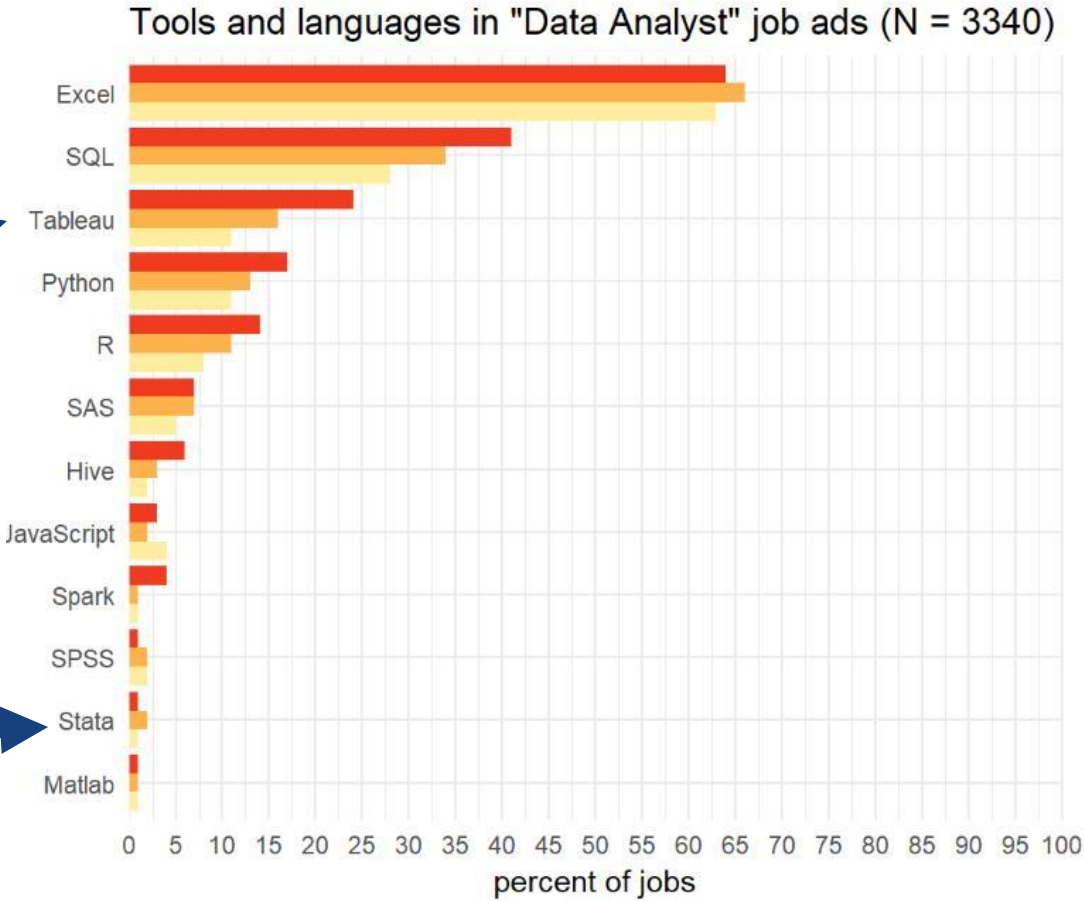
3340 data analyst job ads were included in this analysis.

Tools / languages

Other skills

Degrees

Disciplines



Scraped from LinkedIn in September 2019.
Locations: NYC, San Francisco, Seattle, Boston, and Toronto.

The background is a dark blue gradient. It is decorated with several speech bubbles of different colors (blue, orange, and light blue) and sizes. Some bubbles are solid, while others are just outlines. They are scattered around the central text, creating a conversational feel.

**Let's Explore
Tableau
Together!**

Project Overview

Total of **5 guided projects** during the semester.
Best 4 count toward your grade.

- ❖ Create 2 - 4 data visualizations from datasets
- ❖ Organize visualizations into a dashboard
- ❖ Write a 3-page summary paper
- ❖ Peer review 5 of your classmates' dashboards

For the final project, you'll find your own dataset and pick your own visualizations.

You can pick **any labor topic** that interests you!

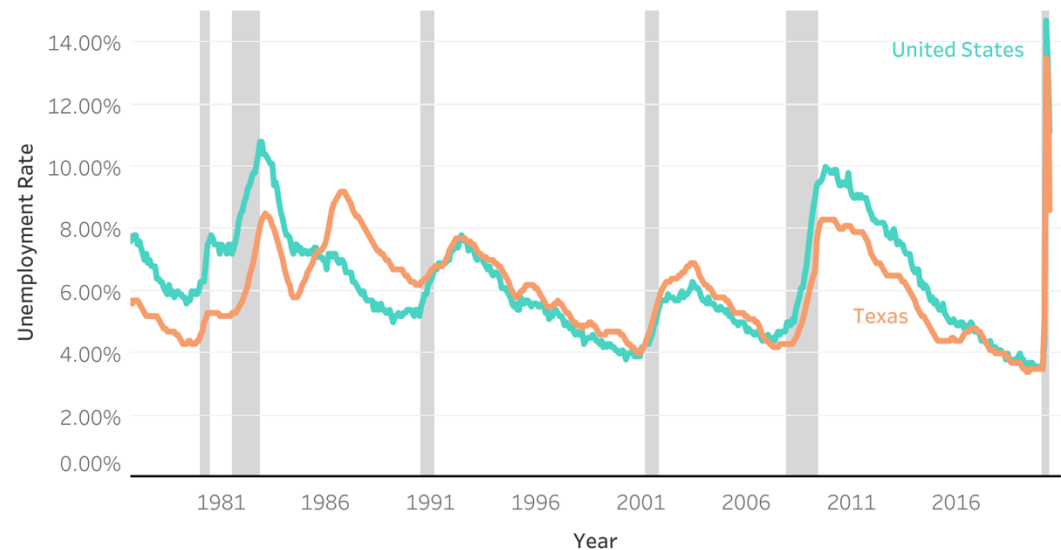


**Tableau Toolbox
Assignment**
(Due Week 2)

This provides a
“Getting Started”
experience on
using Tableau.

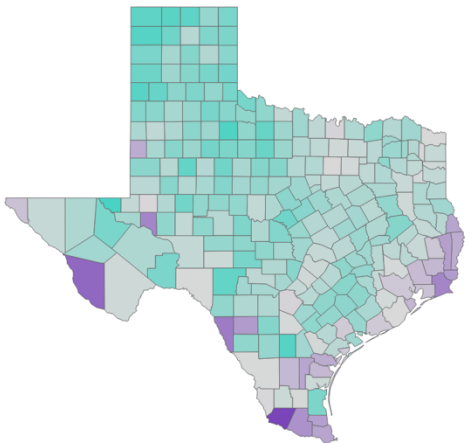
A Look at Unemployment in Texas

Historical Unemployment Rate Since 1976



The Bureau of Labor Statistics began tracking state level unemployment in 1976. For most states in the United States, the historical peak occurred in 2020, but previous peaks occurred after the 1982 recession. The shading in the line chart above indicates recessions defined by the National Bureau of Economic Research.

The map of Texas shows the county-level variation in unemployment in April 2020, which was the highest unemployment rate the state has experienced since the BLS began tracking. The midpoint of the color segmentation is the average for the entire state of Texas.



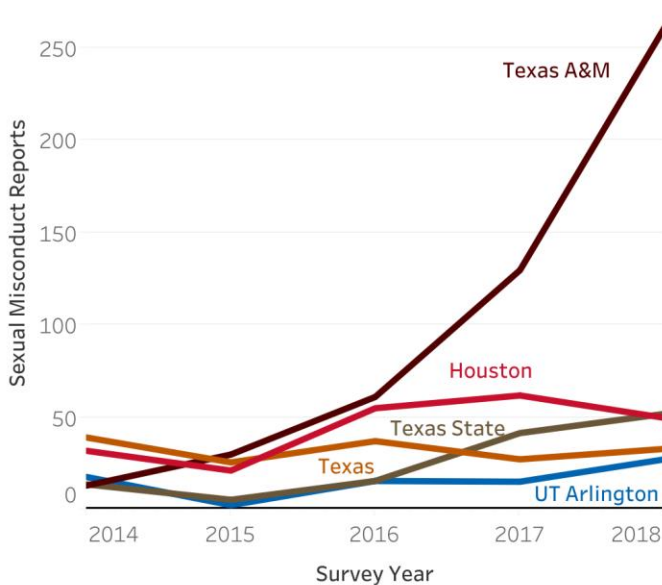
Source: Data comes from the Bureau of Labor Statistics.



Campus Crime from 2014 to 2018 in Texas

Data Source:
Department of Educa..

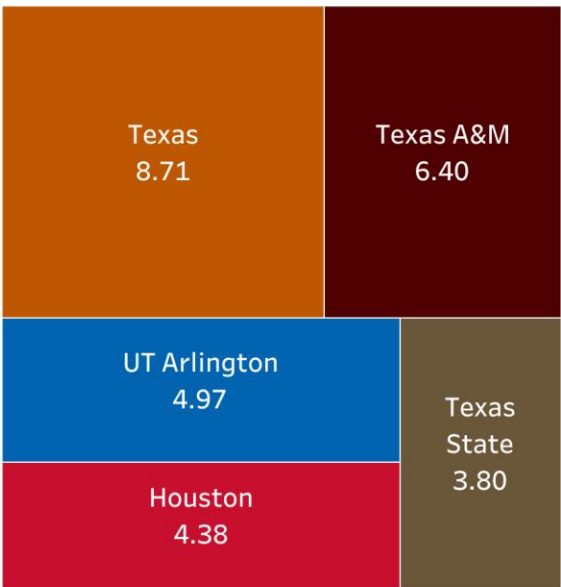
Sexual Misconduct Crimes per 100,000 Students



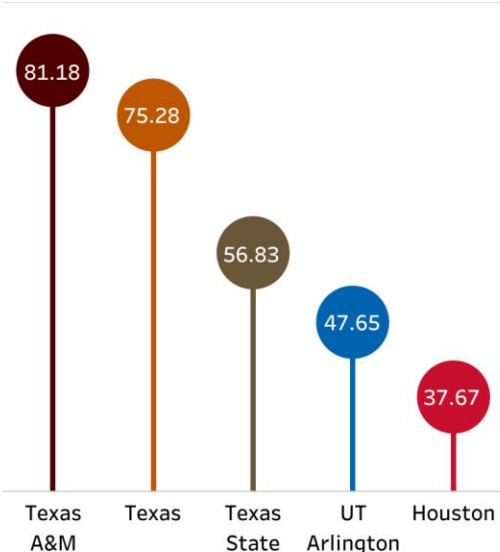
Using data from the Department of Education, we can see various measures of crime across the five largest 4-year universities in the state of Texas. Sexual misconduct crimes include rape, incest, and fondling. All of the crime measures are adjusted to a common rate of per 100,000 students to account for differences in population sizes and to compare to national statistics.

This dashboard is interactive and clicking on one of the elements will highlight the same university in the other visualizations. The bottom two visualizations look at average assaults and burglaries on campus from 2014 to 2018.

Average Assaults per 100,000 Students



Average Burglaries per 100,000 Students





Jadrian Wooten

Penn State University | University Park, Pennsylvania, United States | jadrianwooten.com



11 vizzes

31 followers

39 following

I am an economics educator at Penn State University. I teach courses in applied microeconomic topics like labor, crime, and natural resources.

View profile as

Me

Others

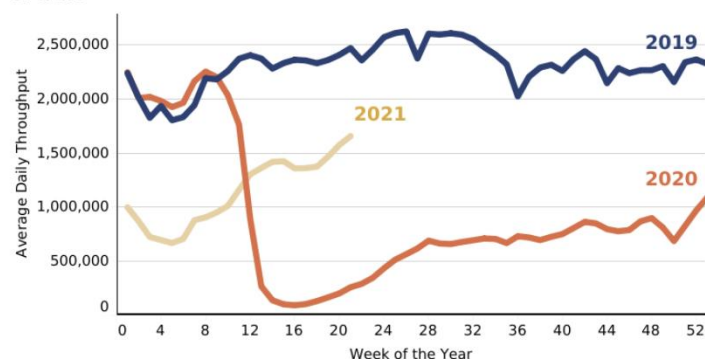
Vizzes 11

Followers 31

Following 39

Favorite 1

Average Daily TSA Checkpoint Travel Numbers by Week

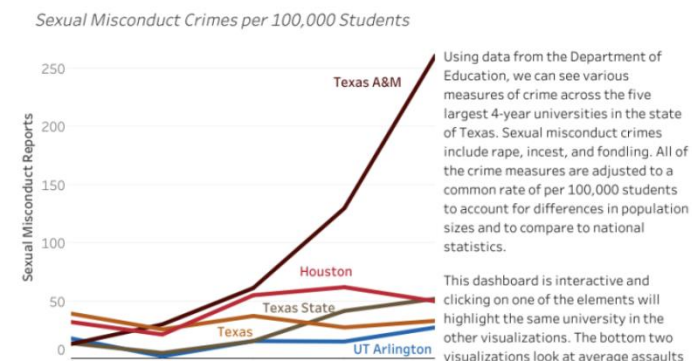


TSA Throughput (May 23)

16 views

Campus Crime from 2014 to 2018 in Texas

Data Source: Department of Educa..

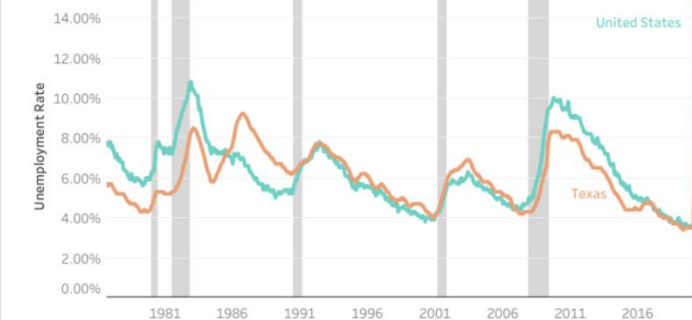


Campus Crime in Texas's 5 Largest Universities

41 views

A Look at Unemployment in Texas

Historical Unemployment Rate Since 1976



Texas Unemployment

65 views

Making a line chart...

Visualization #1: Historical Unemployment

Your first worksheet will look at monthly unemployment rates in your state and how it compares to the US rate. We will start by recreating the graphs you saw in FRED before downloading the data, but the benefit of using Tableau is that we can display them on a dashboard with other visualizations. Select Sheet 1 from the lower menu to start a new worksheet. Right-click on the **Unrate** measure to create a new calculated field and name it **United States**. In the calculation field, divide the Unrate by 100. Right click on your state's unemployment measure and repeat the process for your state. Name that calculated field after your state and divide your state's unemployment rate by 100.

Drag the **Observation Date** dimension from your variable pane and place it on the Columns shelf. Drag the **United States** measure to the Rows shelf. Right-click on the Observation Date pill in your Columns shelf and select the second entry for Month that let's Tableau know your data has month and year information in the cell. Drag the **State** measure that you created and place it on the vertical axis of the chart in the visualization window. This will place both lines on the same chat and use a blended axis.

Next, we will add some light reference bands to the graph to indicate each recession determined by the NBER. A link for the dates is included in the Data section above. To add a reference band to your visualization:

- Change the left column from Data to Analytics.
- Drag the Reference band from the menu to your chart and drop the item in the Observation Date section of the table. This will open a box to let you determine where the band should be placed. It's easier to start this process from the most recent recession and work backward.
- Change the "Band From" section from minimum to a constant. Set the value at the beginning of one of the recessions. Do not include a label and do not include a tooltip.
- Change the "Band To" section from minimum to a constant. Set the value at the end of the same recession. Do not include a label and do not include a tooltip.
- Format as you wish, but be sure you're consistent across all of your recession bands.
- Repeat for each recession that has occurred since 1976.

You have officially created your first visualization, but we need to format the visualization to improve its presentation:

- Rename your worksheet in the bottom toolbar
- Edit the axis labels to be more informative and give your chart a suitable title
- Edit your horizontal axis so that your timeline starts/ends at the same year as the data
- Format your vertical axis to represent a percentage
- Format both axes so that the font is larger
- Format your horizontal axis so that your zero line is thicker than the default
- Make your graph lines thicker by adjusting the size mark card
- Label your lines by dragging **Measure Names** from the dimensions to the Label mark. Select the Label mark card and "Allow labels to overlap other marks." Adjust the label options to improve the presentation
- Remove the label card from the right menu since your lines are labeled on the visualization.
- Update the tooltip marks card to be more informative. You may need to drag different measures/dimensions to the tooltip marks card
- Change the color of your lines to be something other than the default. Need inspiration for colors? Check out this [Instagram account](#) .
- From the Worksheet menu in the main menu, show the caption for this visualization, and indicate that the shading represents recessions



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Filter Results

634 Results for "Tableau"

Sort by: **Best Match** ▼

Content by ^

☐ LinkedIn Learning (634)

Type ^

☐ Courses (12)

☐ Videos (621)

☐ Learning Paths (1)

Level v

Time to Complete v

Software v

Continuing Education Units v

Language: English ^

About

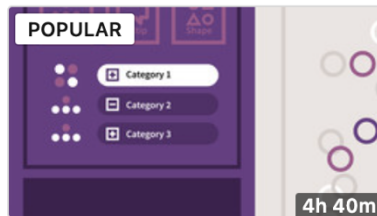
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COURSE

Tableau Essential Training (2020.1)

By: Curt Frye · Updated Sep 2020

4h 40m 1s left

... [Save](#)



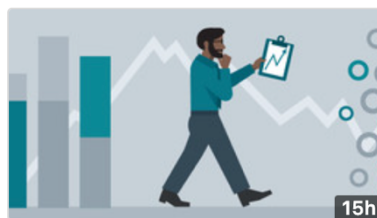
VIDEO

Build a KPI dashboard

Jul 2019 · From the course: Creating Interactive Tableau Dashboards

6,792 learners

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LEARNING PATH

Improve Your Tableau Skills

Skills: Data Visualization, Tableau

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COURSE

Creating Interactive Tableau Dashboards

By: Matt Francis · Jul 2019

3h 26m 18s left

... [Save](#)

ECONOMIC INSTRUCTION



Learning Tableau: A data visualization tool

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^aResearch and Instruction Librarian, University of Connecticut, Storrs, CT, USA; ^bDepartment of Accounting and Finance, Western New England University, Springfield, MA, USA; ^cDepartment of Economics, University of Connecticut, Storrs, CT, USA

ABSTRACT

“Doing economics” is an important theme of undergraduate economics programs. Capstone courses increasingly include instruction in “data literacy” and the STEM-related skills of quantitative and empirical methods. Because the professional discipline has moved in this direction and because of greater employer demand for these skills, data visualization is a key component of data literacy. Tableau is a free data visualization software widely used in the data analytics industry. In this article, the authors introduce an exercise that teaches the fundamental Tableau concepts and commands needed to create charts, assemble them in a dashboard, and tell a story of patterns observed in the data. The exercise assumes no prior experience in Tableau and is appropriate for undergraduate upper-level economics courses or an empirical methods course.

KEYWORDS

Data literacy; data visualization; econometrics; economic education

JEL CODE

A2



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U.S. BANK CRIME

The visualizations on this dashboard use data from the FBI's bank crime statistics throughout the years 2005-2018. All visualizations use the total number across the U.S..



The visualization on the right (hex map) displays the total bank violations across the U.S. over time. Bank violations include burglaries, extortions, larcenies, and robberies. Viewers can change the year to compare violations across the country over time. The visualization in the middle (heat map) of the dashboard, displays robbery occurrences on a specific day. The bottom visualization (stacked area chart) displays three types of bank violations: robberies, burglaries, and larcenies that have occurred across different bank institutions. Violations were reported at commercial banks, savings banks (comprised of mutual savings banks and savings and loan associations), and credit unions. This visualization excludes the FBI's reports of armored c..

Total Bank Violations Across U.S. in 2005

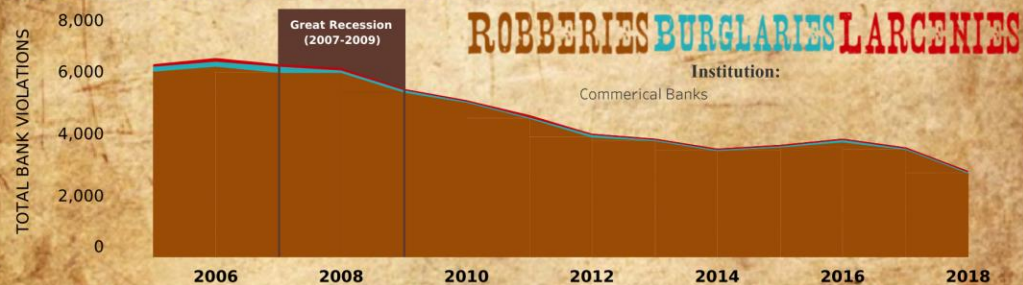
(Burglaries, Extortions, Larcenies, & Robberies)



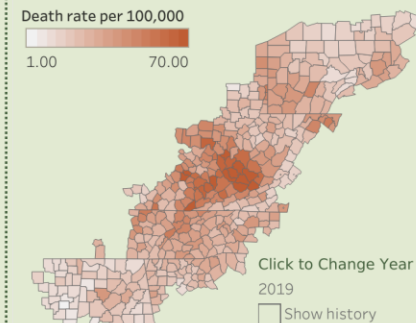
Daily number of Robbery Occurrences Within the U.S.



Total bank violations at Commerical Banks



Source: FBI Crime Statistics Data (2005-2018)

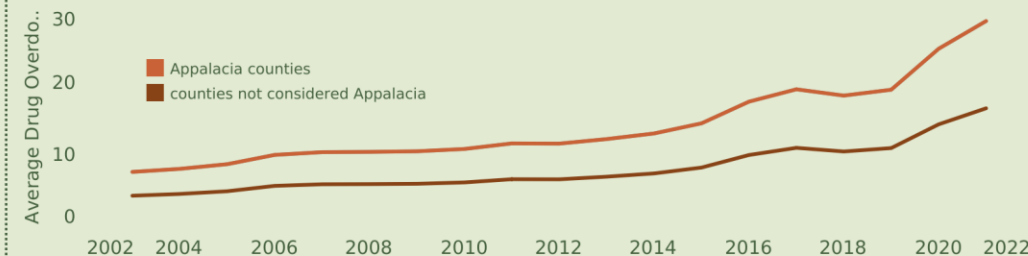


Drug Overdoses in Appalachia

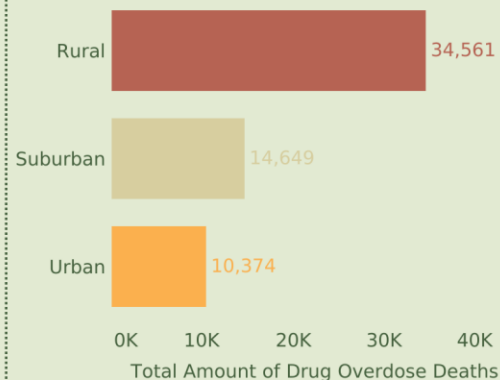
This dashboard shows drug overdose deaths in America between 2003 and 2021 with a focus on Appalachia. The map to the left is just the counties in Appalachia. The darker colors represent where more deaths occurred. The year slider can be utilized to see how the drug crisis became worse over time.

Then the line chart compares the amount of deaths in counties in Appalachia vs the deaths in the counties that are not. Then the bar chart looks at the breakdown to total drug overdose deaths by urbanization. Then the scatter plot compares the rate of drug overdose deaths with the rate of people that work in construction showing the urbanization using the same colors as the bar chart. Then the pill bottles can be clicked to highlight the different urbanization categor..

Deaths in Appalachia vs the Rest if the US



Drug Overdose By Urbanization



Click to Highlight Urbanization



Rural

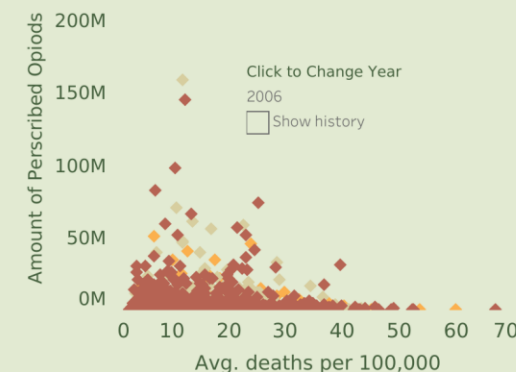


Suburban



Urban

Drug Overdose Deaths vs Amount of Opioids Perscribed



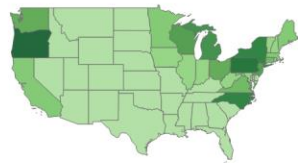
Data is sourced from the Center of Disease Control and Protection, the Bureau of Labor Statistics, and the Drug Enforcement Agency

Christmas Trees in The United States

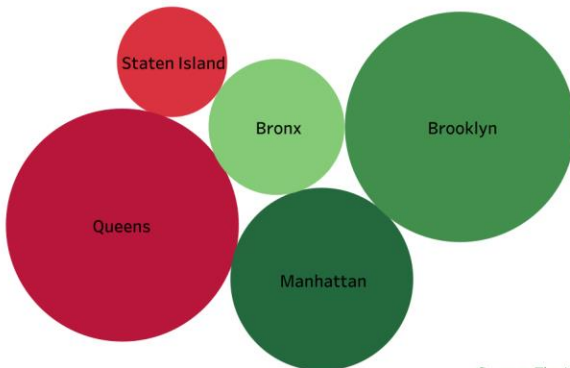
Christmas trees are a popular decoration during the holiday season. In 2018, 27 million Christmas trees were purchased in the United States. Miles of transportation are needed to deliver these trees to homes and businesses. The clean-up process from the Department of Sanitation has a large impact on the environment. The Christmas trees after the holiday have been recycled in to all different products and uses. The map of the United States shows the amount of current Christmas tree farms and the amount of Christmas tree farms that sell their trees. The horizontal bar graph illustrates the amount of Christmas trees that the New York Department of Sanitation picks up and disposes of. The bubble chart depicts one of the items that can be made from recycled Christmas trees and how much comes from each borough in New York.



Christmas Tree Farms Around The United States



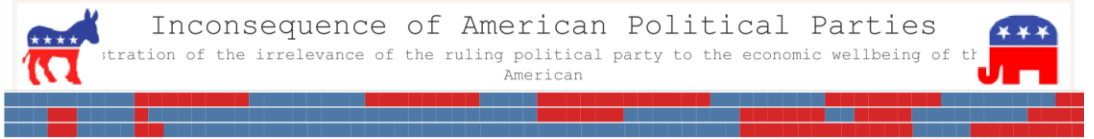
Recycled Paper Made From Christmas Trees in New York



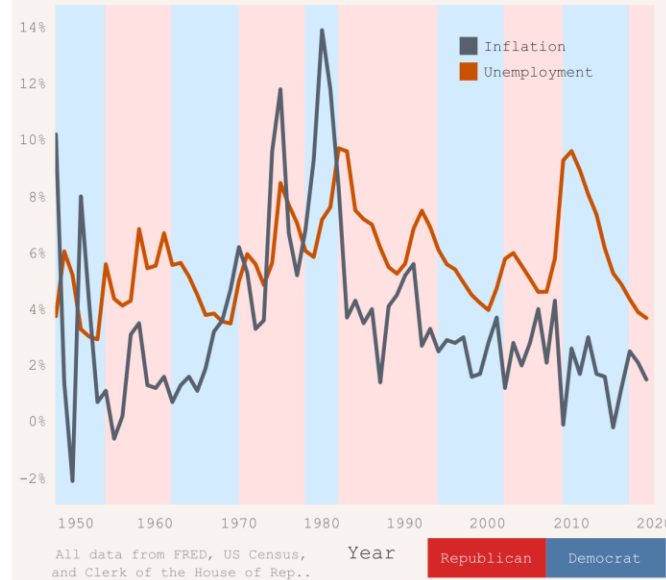
Christmas Trees Collected in New York in The Month of January



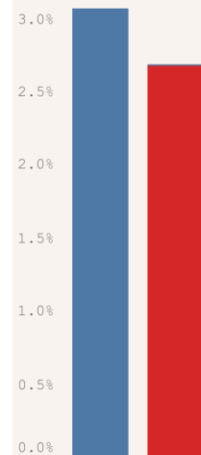
Source: The USDA Census of Ag and NYC Open Data



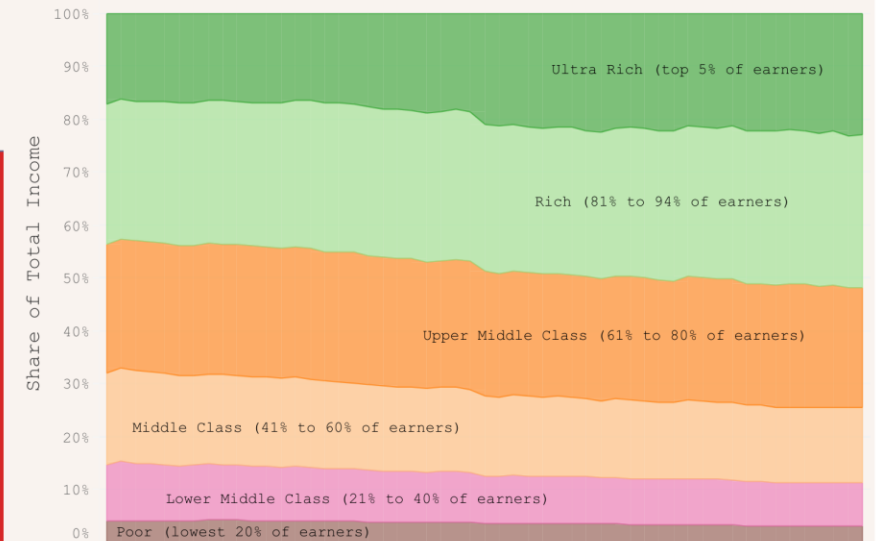
Inflation/Unemployment 1948-2020



Average Annual Real GDP Growth 1945-2019



Income Distribution 1967-2019



Senate Make Up in 1965

House Makeup in 1965

Top: An illustration of the political parties of the President and majority parties of the Senate and House, respectively.

Above: Breakdown of members of Congress. Manipulate these charts by clicking a year in in any other graph.

Left: Inflation and unemployment (U3) over time with blue and red shading representing Democratic and Republican presidents, respectively.

Bottom Left: Average annual real GDP Growth for both major parties between 1945 and 2019.

Below: Breakdown of how much each segment of the population earned in each year between 1967 and 2019.

The data show that inflation and unemployment spikes occur irrespective of..

[Click on any year to see the political makeup of Congress..](#)

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