

MATH 3190 Homework 3

Data Visualizations and Ethics

Due 3/9/2022

Here is

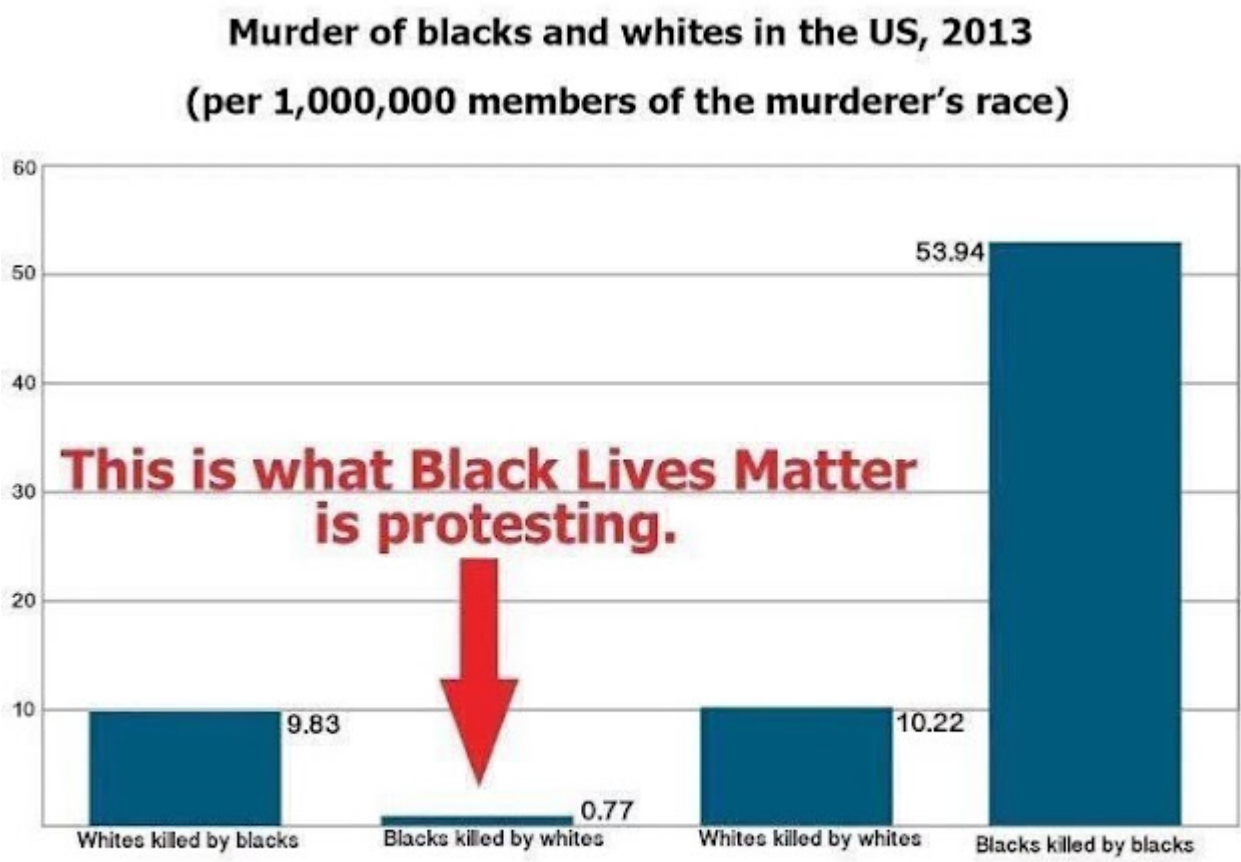
\begin{enumerate} (get your previous points!) Keep working on your Shiny interfaces and packages! Complete any of the previous tasks you have not finished, and work to make your packages and interfaces better!
(20 points) Using the principles and guidelines from the data visualization lecture slides (we did not finish!), evaluate the plots in your Shiny interfaces (k means and basketball) and improve them! Also, add 3 more high-quality and highly-informative plots or tables to your interface. Use ggplot for all plots in the interface!

Done

\item (20 points) Finish going through the examples from the ggplot lecture. Confirm in your RMarkdown that you completed this task (on your honor!).

Done

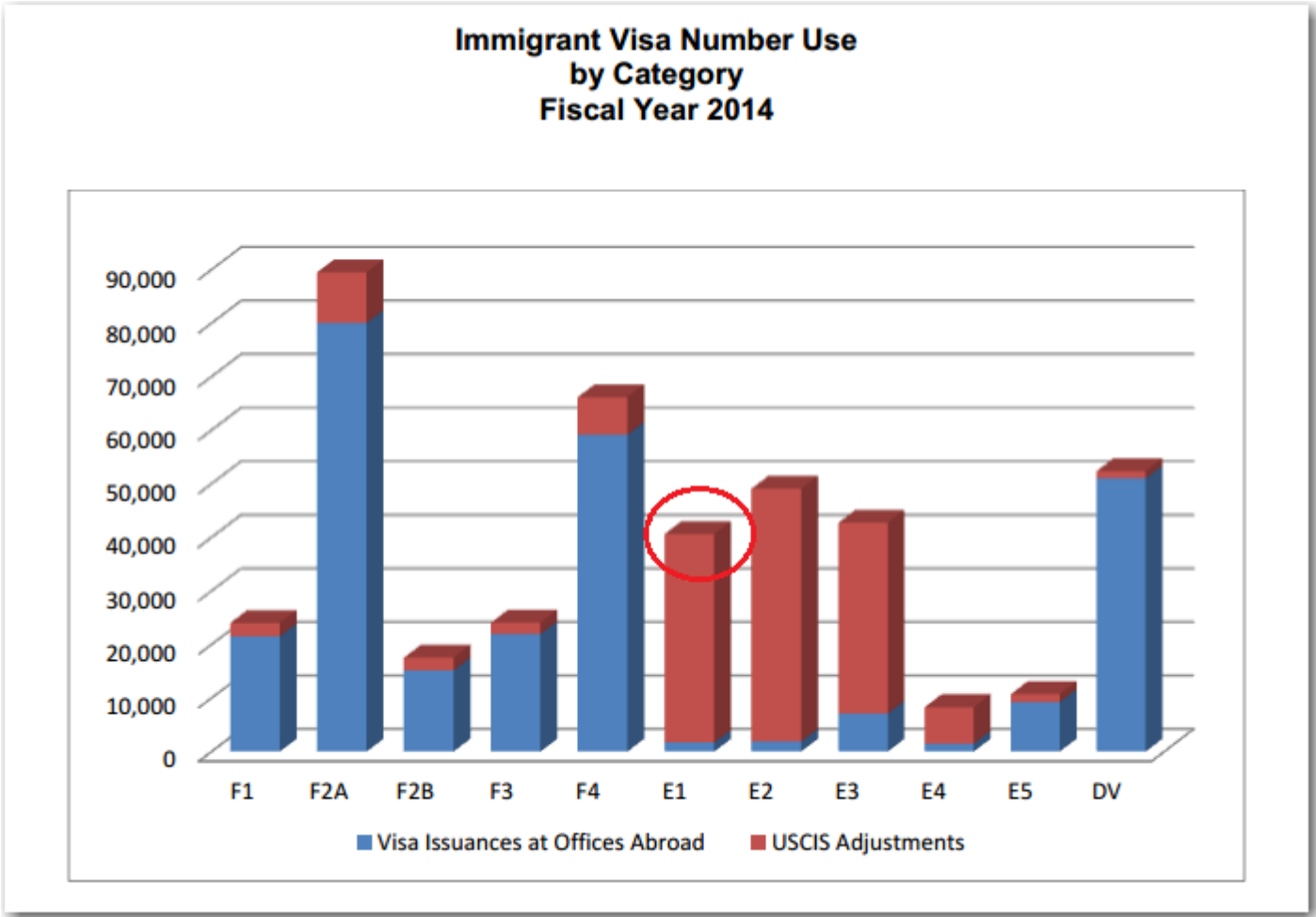
\item (20 points) Go find 5 solid examples where statistics have been misused, misrepresented (graphs), or misinterpreted. Add the link or graph to the RMarkdown document, and describe what they did wrong. What should they have done differently? Which of the 12 data science principles did they violate?



The issue here is that it show the rate by

Source:
2013 FBI Crime Report, Expanded Homicide Data Table 6:
https://ucr.fbi.gov/crime-in-the-u.s/2013/crime-in-the-u.s.-2013/offenses-known-to-law-enforcement/expanded-homicide/expanded_homicide_data_table_6_murder_race_and_sex_of_victim_by_race_and_sex_of_offender_2013.xls

the murder's race. It may very well be true that people are more likely to be murdered by those of their own race, but it would be better to show this on a rate by the victim's race. This could lead to people misinterpreting the data



The problem with this one is that

by using a 3d graph it made the total appear to be below 40,000 when it actually was not. The issue with that is that it's misleading.

When Colgate said that 80% of Dentists recommend them, that survey allowed them to recommend multiple options, so they were not recommending that Colgate be used over other brands

THE BLOG

Over 100 Million Now Receiving Federal Welfare
2:40 PM, AUG 8, 2012 • BY DANIEL HALPER

A new chart set to be released later today by the Republican side of the Senate Budget Committee details a startling statistic: "Over 100 Million People in U.S. Now Receiving Some Form Of Federal Welfare."

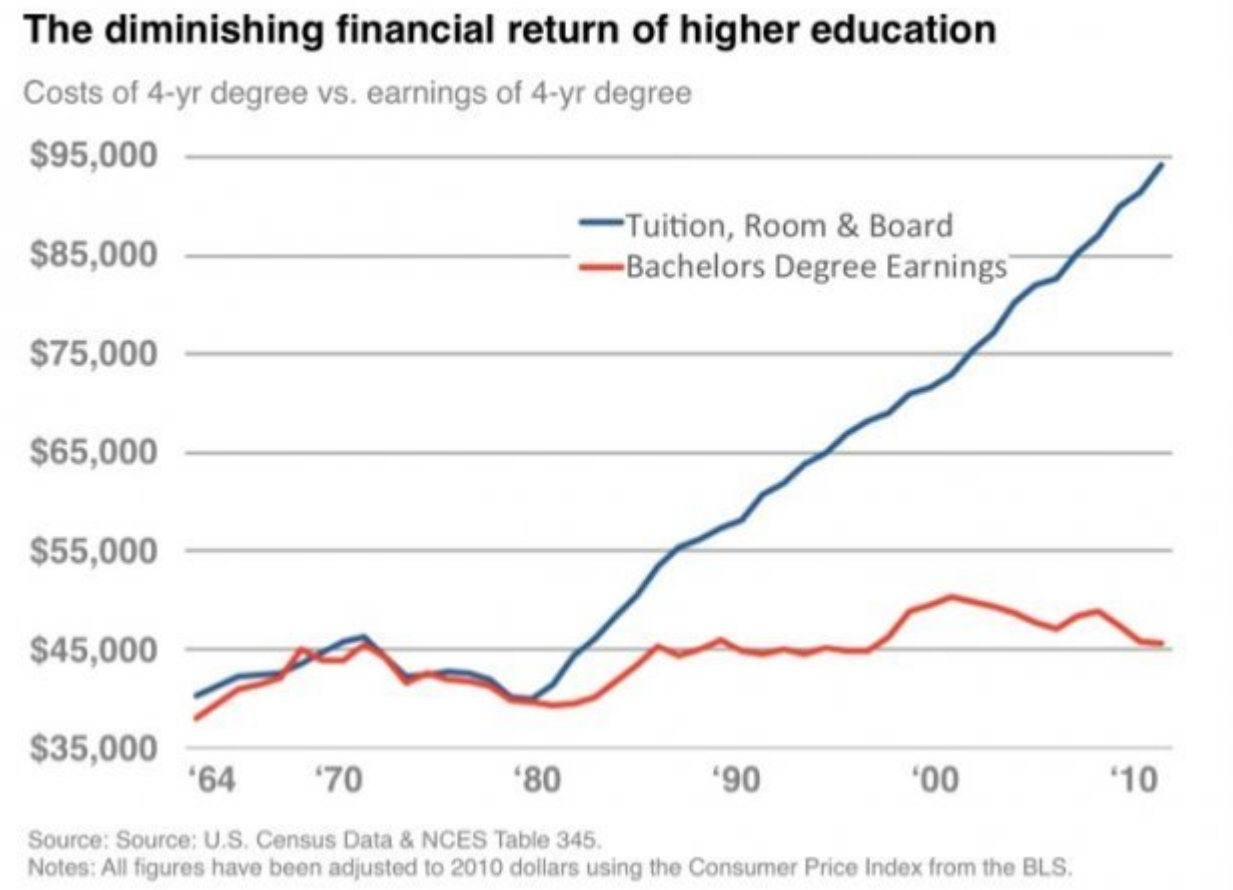
Over 100 Million People In U.S. Now Receiving Some Form Of Federal Welfare
Figures Count Means-Tested Welfare, Not Social Security Or Medicare

Quarter	Number of Americans
2009 Q1	97,000,000
2009 Q2	98,000,000
2009 Q3	99,000,000
2009 Q4	100,000,000
2010 Q1	101,000,000
2010 Q2	102,000,000
2010 Q3	103,000,000
2010 Q4	104,000,000
2011 Q1	105,000,000
2011 Q2	106,000,000

Figures include anyone residing in a household in which at least one person received a program benefit.
Source: U.S. Census/ Survey of Income and Program Participation.
Produced by Senate Budget Committee Republican staff, Ranking Member Jeff Sessions | <http://budget.senate.gov/repUBLICan>

This one is one where the y axis does not start at 0, and makes the increase

seem more extreme than it really is.



College graph

The issue here is that it left out the fact the the cost of not going to college is also rising at a rapid rate. It could lead to people making uninformed decisions about it. \end{enumerate}