Assignment4_v2

Alekhya Chaparala, Juliet Hayes, Kieran Connolly

Quarto

Quarto enables you to weave together content and executable code into a finished document. To learn more about Quarto see https://quarto.org.

Running Code

When you click the **Render** button a document will be generated that includes both content and the output of embedded code. You can embed code like this:

```
#load data
library(tidyverse)
```

```
-- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
v dplyr     1.1.2     v readr     2.1.4
v forcats   1.0.0     v stringr   1.5.0
v ggplot2   3.4.3     v tibble    3.2.1
v lubridate 1.9.2     v tidyr     1.3.0
v purrr     1.0.2
-- Conflicts ------------------------------------------ tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to beco
```

```
#alekhya
hate_crimes <- read_csv(file = "/Users/alekhya/Desktop/03_ARC School/02 McCourt Year 2/Dat
```

```
Rows: 51 Columns: 12
-- Column specification --------------------------------------------------------
Delimiter: ","
chr  (1): state
dbl (11): median_household_income, share_unemployed_seasonal, share_populati...

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

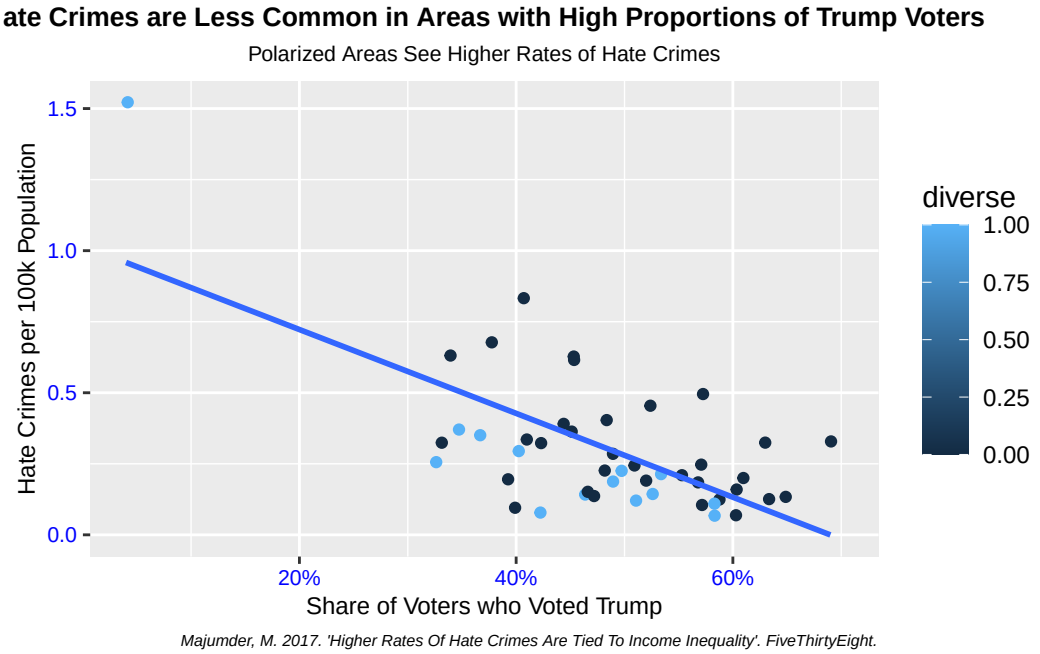
```
#juliet
#hate_crimes <- read_csv(file = "C:/Users/kjcst/Downloads/hate_crimes.csv")

#kieran
#hate_crimes <- read_csv("/Users/Juj/Desktop/hate_crimes.csv")
```

You can add options to executable code like this

```
#Graph of relationship between Trump voters and hate crimes
library(ggplot2)

hate_crimes_diverse <- hate_crimes %>%
  mutate(diverse = if_else(share_non_white>0.4, 1, 0))

hate_crimes_diverse %>%
ggplot(mapping = aes(x = share_voters_voted_trump, y = hate_crimes_per_100k_splc, color =
  geom_jitter() +
  geom_smooth(method = "lm", se = FALSE) +
  labs(y = "Hate Crimes per 100k Population", x = "Share of Voters who Voted Trump", title
    theme(
        axis.text = element_text(size=8, color = "blue",
                                 hjust = 0.5),
        plot.title = element_text(size=10, face = "bold", hjust = 0.5),
        plot.subtitle = element_text(size=8, hjust = 0.5),
        axis.title = element_text(size=9),
        plot.caption = element_text(size = 6, face = "italic")
      ) +
  scale_x_continuous(labels = scales::percent)
```

```
`geom_smooth()` using formula = 'y ~ x'

Warning: Removed 4 rows containing non-finite values (`stat_smooth()`).
```

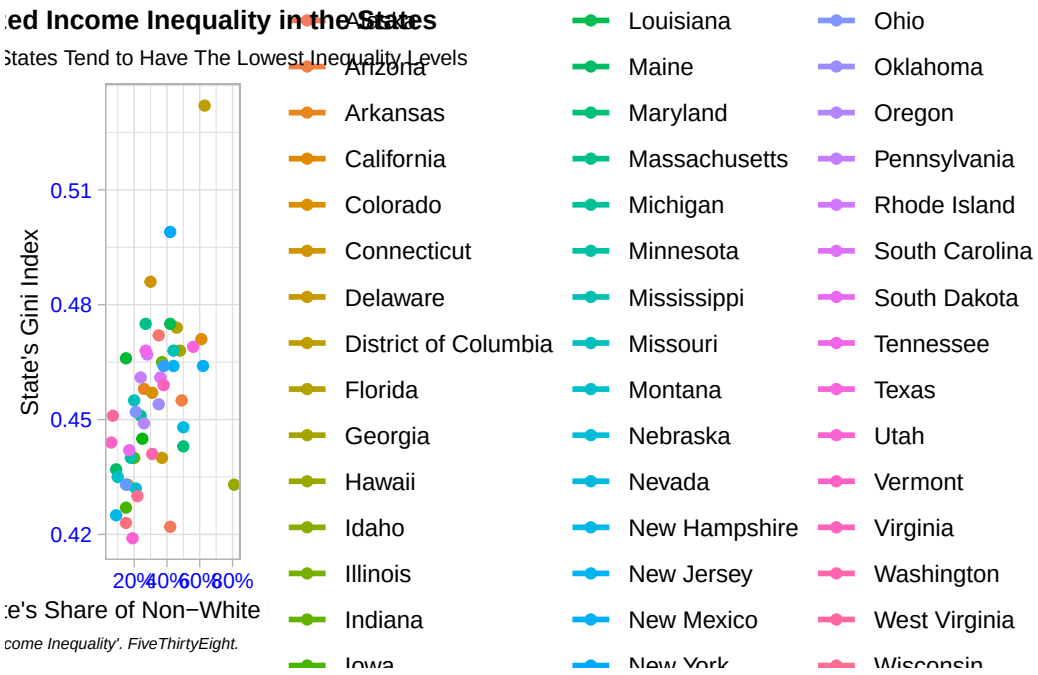
```
Warning: The following aesthetics were dropped during statistical transformation: colour
i This can happen when ggplot fails to infer the correct grouping structure in
  the data.
i Did you forget to specify a `group` aesthetic or to convert a numerical
  variable into a factor?

Warning: Removed 4 rows containing missing values (`geom_point()`).
```




```
library(tidyverse)
library(readr)
library(ggplot2)

#Graph of relationship between Inequality and Racial Diversity

hate_crimes %>%
  ggplot(mapping = aes(x = share_non_white, y = gini_index, transparency = 0.5, color = st
  geom_point() +
  geom_smooth(method = "lm", se = FALSE) +
  theme_light() +
  labs(
    y = "State's Gini Index",
```

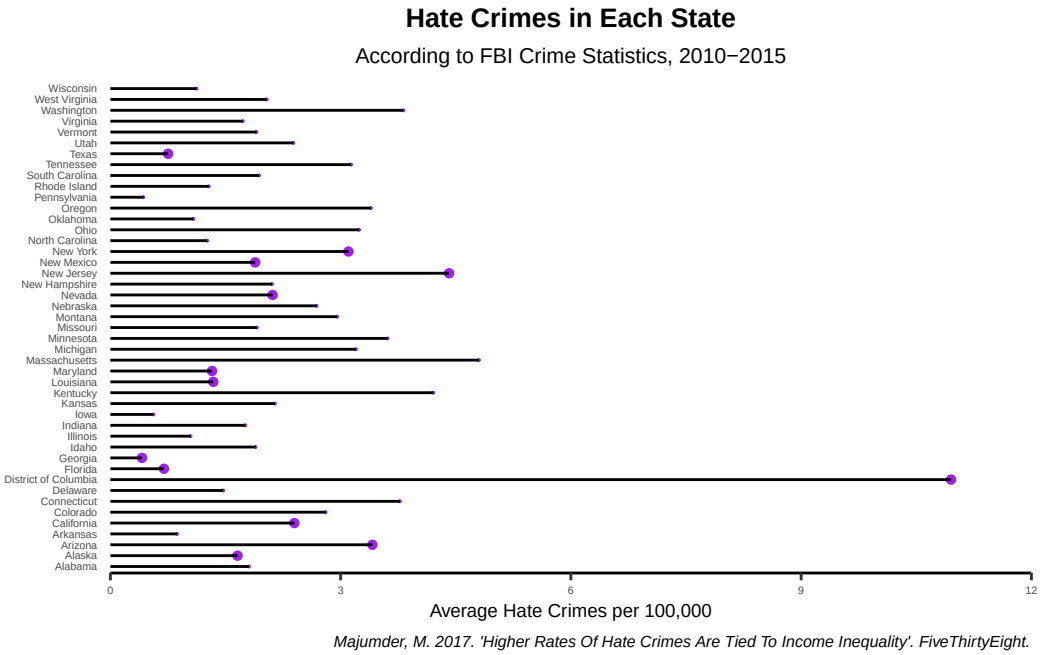
```
    x = "State's Share of Non-White Population",
    caption ="Majumder, M. 2017. 'Higher Rates Of Hate Crimes Are Tied To Income Inequalit
    title = "Racialized Income Inequality in the States",
    subtitle = "The Whitest States Tend to Have The Lowest Inequality Levels")+
  theme(
        axis.text = element_text(size=8, color = "blue",
                                 hjust = 0.5),
        plot.title = element_text(size=10, face = "bold", hjust = 0.5),
        plot.subtitle = element_text(size=8, hjust = 0.5),
        axis.title = element_text(size=9),
        plot.caption = element_text(size = 6, face = "italic")
      ) +
  scale_x_continuous(labels = scales::percent)
```

```
`geom_smooth()` using formula = 'y ~ x'
```




```
#Lollipop Graph of Average Hate Crimes per 100K

hate_crimes_diverse %>%
  na.omit(hate_crimes_per_100k_splc) %>%
```

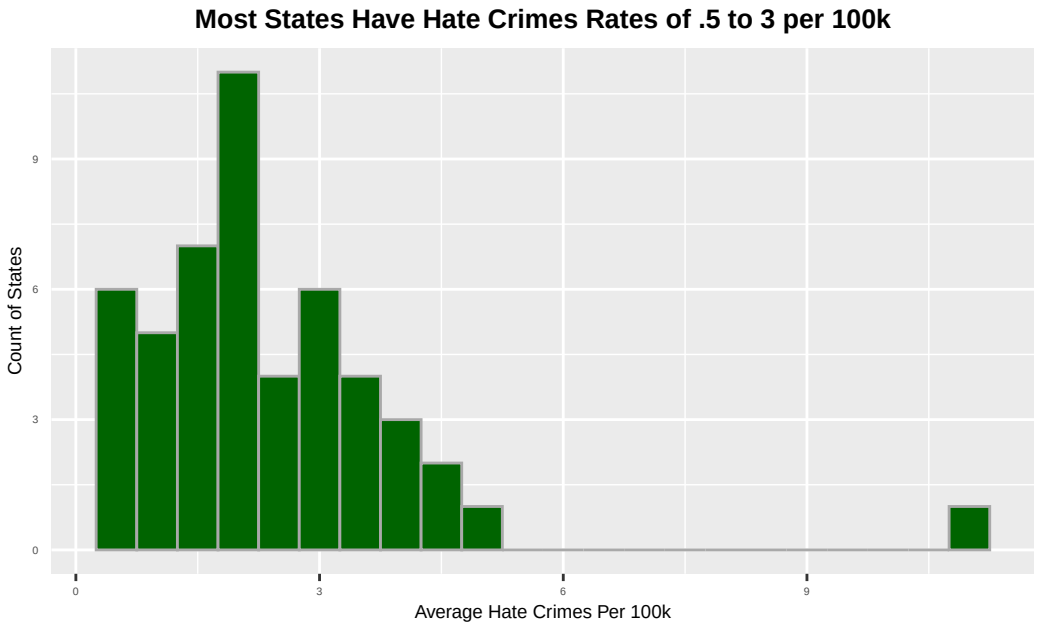
```
ggplot(aes(x= state,y= avg_hatecrimes_per_100k_fbi, stroke = diverse))+
geom_point(color="purple", size=.5, alpha=1) +
geom_segment(aes(x=state, xend=state, y=0, yend=avg_hatecrimes_per_100k_fbi)) +
scale_y_continuous(expand = expansion(mult = c(0,0)), limits = c(0, 12)) +
theme_classic() +
coord_flip() +
  labs(x = NULL,
       y = "Average Hate Crimes per 100,000",
       title = "Hate Crimes in Each State",
       subtitle = "According to FBI Crime Statistics, 2010-2015",
       caption ="Majumder, M. 2017. 'Higher Rates Of Hate Crimes Are Tied To Income Ineq
       ) +
theme(
      axis.text=element_text (size=4),
      plot.caption = element_text(size = 6, face = "italic"),
      axis.line.y = element_line(color = "transparent"),
      axis.ticks.y = element_blank(),
      plot.title=element_text(size=10, face = "bold", hjust = .5),
      plot.subtitle= element_text(size = 8,hjust = .5),
      axis.title=element_text(size=7),

    )
```



The `echo: false` option disables the printing of code (only output is displayed).

```
#Histogram of Average Hate Crimes per 100K

library(tidyverse)
library(readr)
library(ggplot2)

hate_crimes %>%
ggplot(mapping = aes(x = avg_hatecrimes_per_100k_fbi))+
  geom_histogram(binwidth = .5, fill = "darkgreen", color = "darkgray") +
  labs(
    y = "Count of States",
    x = "Average Hate Crimes Per 100k",
    caption ="Majumder, M. 2017. 'Higher Rates Of Hate Crimes Are Tied To Income Inequalit
    title = "Most States Have Hate Crimes Rates of .5 to 3 per 100k"
    ) +
   theme(
        axis.text=element_text (size=4),
        plot.caption = element_text(size = 6, face = "italic"),
        axis.line.y = element_line(color = "transparent"),
        axis.ticks.y = element_blank(),
        plot.title=element_text(size=10, face = "bold", hjust = .5),
        plot.subtitle= element_text(size = 8,hjust = .5),
        axis.title=element_text(size=7)
   )
```

```
Warning: Removed 1 rows containing non-finite values (`stat_bin()`).
```



Majumder, M. 2017. 'Higher Rates Of Hate Crimes Are Tied To Income Inequality'. FiveThirtyEight.

```
#Comment
```

"Hate Crimes Are Common in Polarized States": This graph shows the relationship between the proportion of Trump voters in a given state and the number of hate crimes per 100K people committed in that state. We might hypothesize that there would be a higher rate of hate crimes in states dominated by Trump voters, but in fact this graph illustrates that hate crimes are more prevalent in states where 40%-50% of voters support Trump. In other words, hate crimes are more prevalent in states that have a greater degree of political polarization, compared to states with a higher percentage of Trump voters. We also see an outlier in the District of Columbia, which has a very low percent of Trump voters (4%) but a high rate of hate crimes (1.5 per 100K). This is likely due to the fact that DC has a much smaller population size than most states, but a relatively high number of hate crimes compared to other small states.