Lab 03

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# Packages

library(tidyverse)  
library(sf)

# Data

fl\_votes <- st\_read("data/fl\_votes.shp", quiet = TRUE)  
fl\_votes %>%  
 slice(1:6)

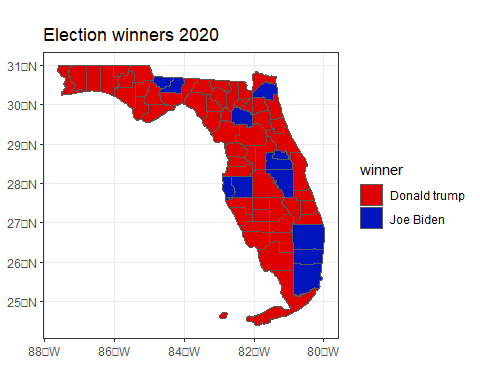
## Simple feature collection with 6 features and 5 fields  
## Geometry type: MULTIPOLYGON  
## Dimension: XY  
## Bounding box: xmin: -85.99989 ymin: 25.95675 xmax: -80.01528 ymax: 30.58427  
## Geodetic CRS: NAD83  
## county rep16 dem16 rep20 dem20 geometry  
## 1 Alachua 46834 75820 50972 89704 MULTIPOLYGON (((-82.37389 2...  
## 2 Baker 10294 2112 11911 2037 MULTIPOLYGON (((-82.10107 3...  
## 3 Bay 62194 21797 66097 25614 MULTIPOLYGON (((-85.65968 3...  
## 4 Bradford 8913 2924 10334 3160 MULTIPOLYGON (((-82.274 29....  
## 5 Brevard 181848 119679 207883 148549 MULTIPOLYGON (((-80.49977 2...  
## 6 Broward 260951 553320 333409 618752 MULTIPOLYGON (((-80.29693 2...

# Exercise 1

#mutate add a new column   
fl\_votes <- fl\_votes %>% mutate(winner20 = if\_else(rep20 > dem20, 'Donald trump','Joe Biden'))

# Exercise 2

ggplot(fl\_votes) +  
geom\_sf(aes(fill = winner20)) +  
 scale\_fill\_manual (values = c("#DE0100", "#0015BC")) +  
 labs(title="Election winners 2020", fill="winner") +  
 theme\_bw()

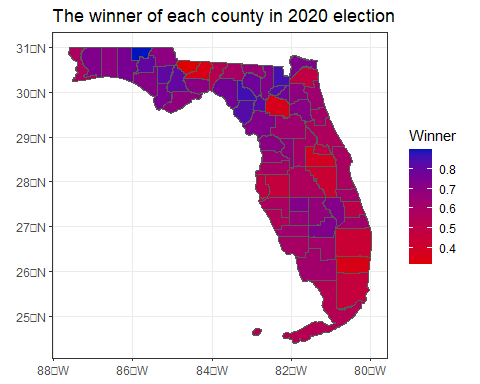


# Exercise #3

fl\_votes <- fl\_votes %>% mutate(prop\_rep16 = rep16/(rep16+dem16))  
fl\_votes <- fl\_votes %>% mutate(prop\_rep20 = rep20/(rep20+dem20))

# Exercise 4

ggplot(fl\_votes) +  
geom\_sf(aes(fill = prop\_rep20 )) +  
scale\_fill\_gradient(low = "#DE0100", high = "#0015BC") +  
labs(title = "The winner of each county in 2020 election ",fill = "Winner") + theme\_bw()

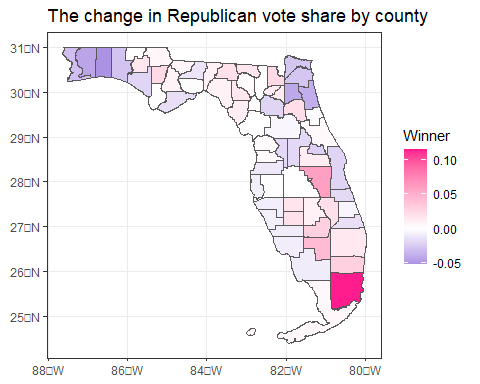


# Exercise 5

fl\_votes <- fl\_votes %>% mutate(diff\_rep = prop\_rep20 - prop\_rep16)

# Exercise 6

ggplot(fl\_votes) +  
 geom\_sf(aes(fill = diff\_rep)) +  
 scale\_fill\_gradient2(low = "#0015BC", high = "#FF1D8E") +  
 labs(title = "The change in Republican vote share by county",fill = "Winner") + theme\_bw()



# Exercise 7

They prefer Donald Trump more than Joe Byeden. The limitations of these visualizations: it is only for the 2016 and 2020 U.S.