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)
```

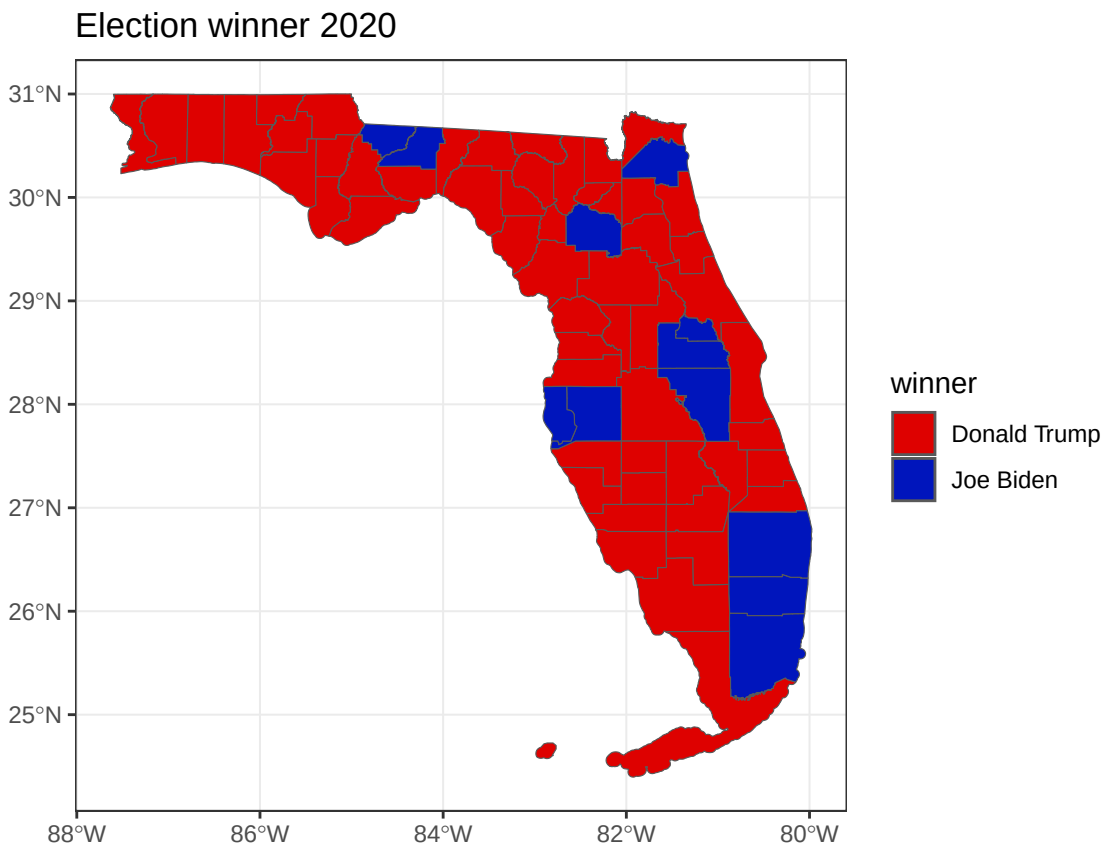
```
## Simple feature collection with 6 features and 5 fields
## Geometry type: MULTIPOLYGON
## Dimension:     XY
## Bounding box:  xmin: -85.99989 ymin: 25.95675 xmax: -80.01528 ymax: 30.58427
## Geodetic CRS:  NAD83
##     county  rep16  dem16  rep20  dem20                       geometry
## 1  Alachua  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

```
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 winner 2020", fill = "winner") +
  theme_bw()
```

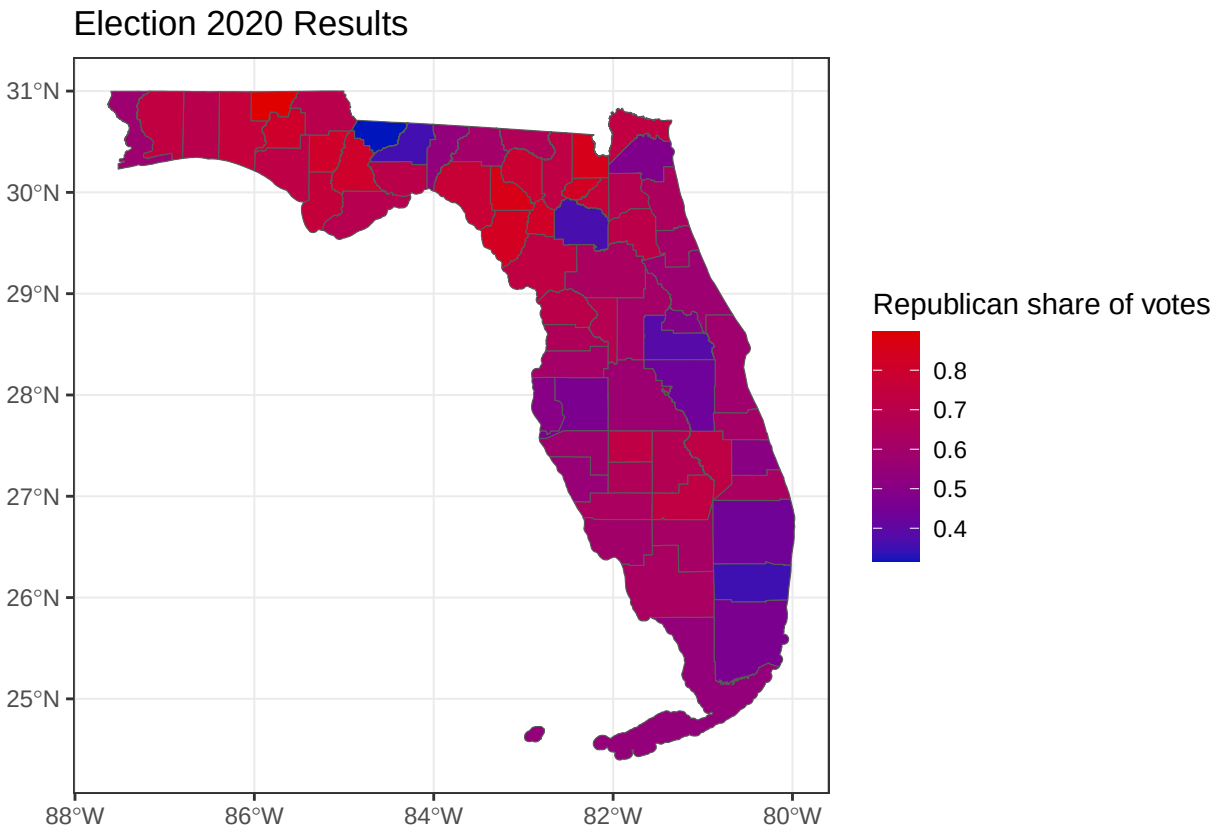


Exercise #3

```
fl_votes <- fl_votes %>%
  mutate(prop_rep16= rep16/(rep16+dem16), prop_rep20= rep20/(rep20+dem20))
```

Exercise 4

```
ggplot(fl_votes) + geom_sf(aes(fill = prop_rep20)) +
  scale_fill_gradient(low = "#0015BC", high = "#DE0100" ) +
  labs(title = "Election 2020 Results", fill = "Republican share of votes") +
  theme_bw()
```

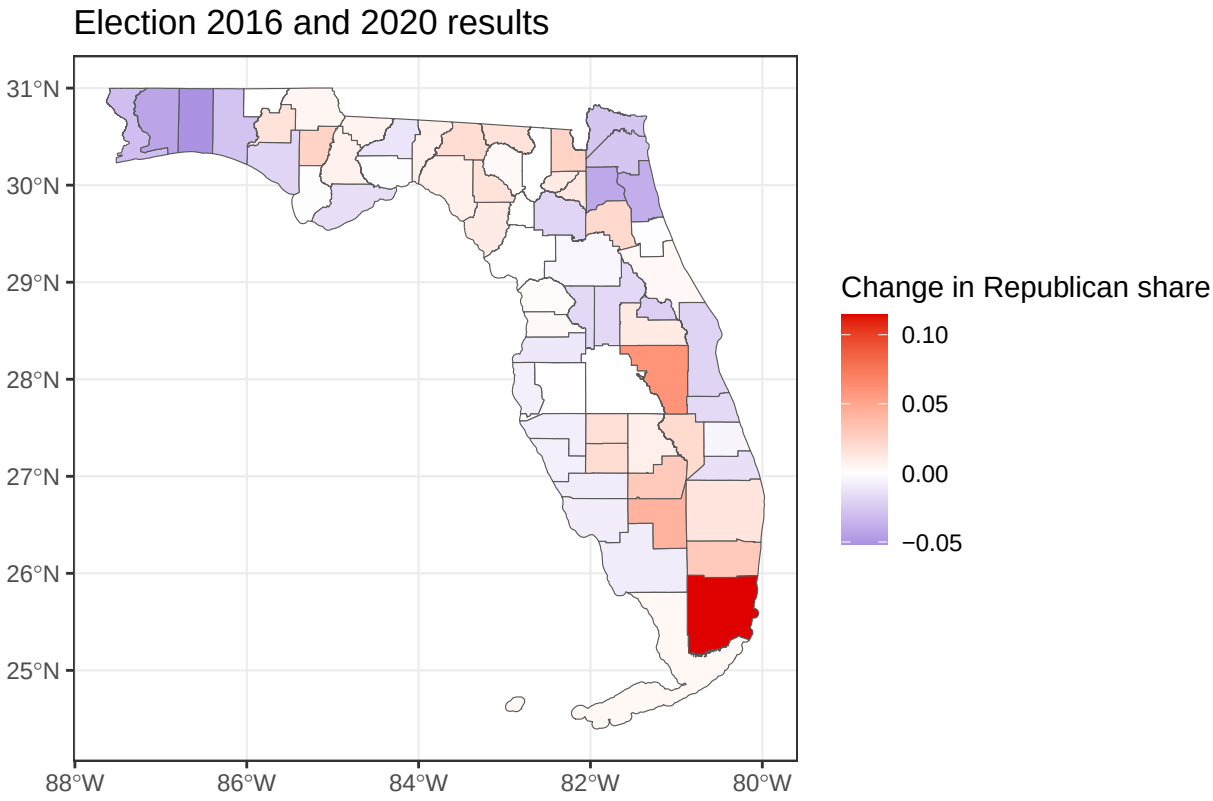


Exercise 5

```
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 = "#DE0100") +
  labs(title = "Election 2016 and 2020 results", fill = "Change in Republican share") +
  theme_bw()
```



Exercise 7

What do the visualizations you developed tell you about the 2016 and 2020 Presidential election in Florida? What are limitations of these visualizations?

The visualizations show that Donald Trump won the with the majority of votes in Florida state. The limitation we faced is the plot in exercise 2 was not clear.