DSCI 210: Base/Swing Maps

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We want to find the differences between Base, Swing, and Residual districts for our candidate; Reggie Harris.

- Base: a precinct where our candidate is expected to receive strong support
- Swing: a precinct where voters are fairly evenly divided. In other words, our candidate can receive significant support here with the proper messaging
- Residual: a precinct where voters are not expected to support our candidate strongly

In completing this task, we receive two key benefits.

1. We can now determine certain cutoffs for different campaign strategies. We campaign differently to base districts than we do to residual districts.
2. The R programming necessary to color in a map based on those cutoffs.

```
knitr::opts_chunk$set(
    echo = TRUE,
    message = FALSE,
    warning = FALSE
)
library(tidyverse)
library(sf)
library(readxl)
library(RColorBrewer)
```

Map from last time

Most of the process of this example the same as the election map that we made.

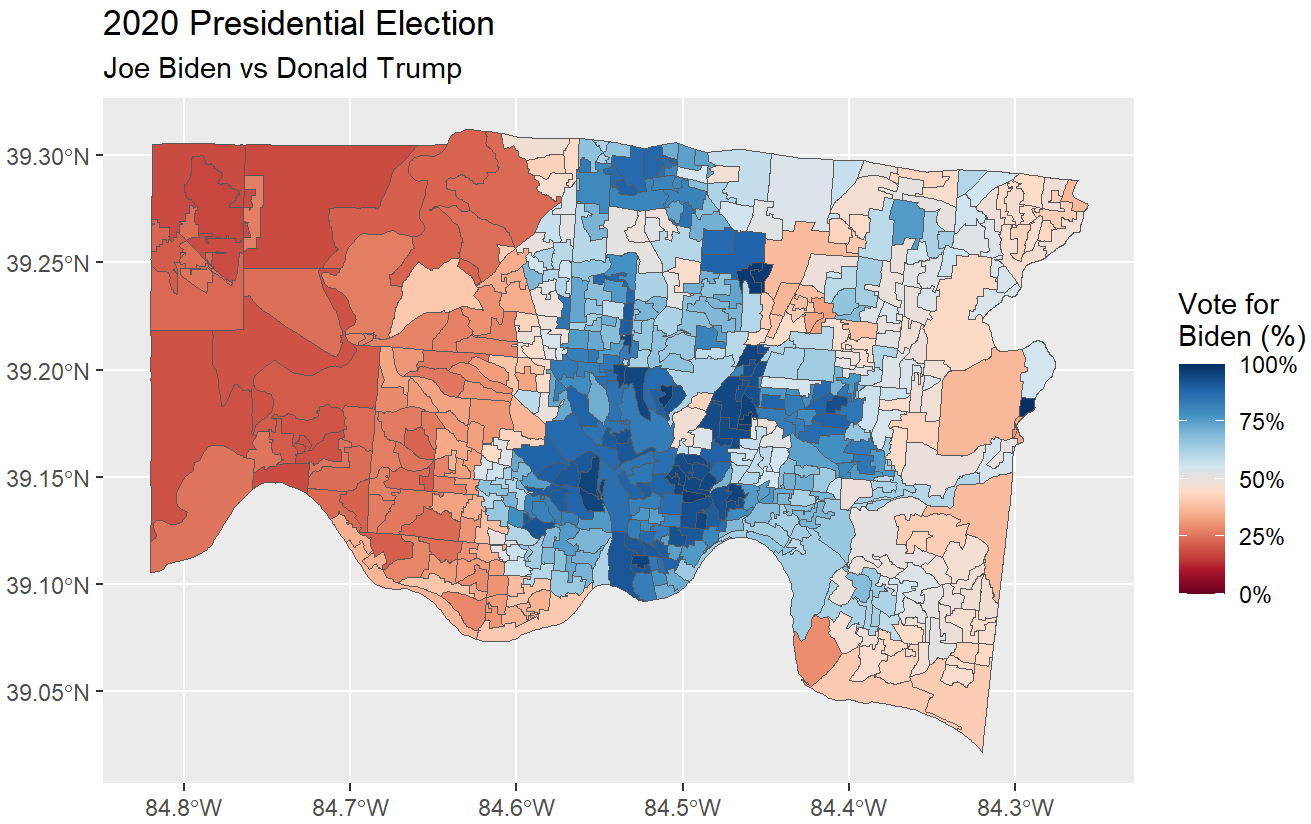
```
map2020 <- st_zm(st_read("PRECINCT2020_052219.shp"))
```

```
## Reading layer `PRECINCT2020_052219' from data source
##   `C:\Users\Owner\OneDrive - Xavier University\Documents\DSCI 210\04 - Base Swing maps\PRECIN
CT2020_052219.shp'
##   using driver `ESRI Shapefile'
## Simple feature collection with 563 features and 1 field
## Geometry type: MULTIPOLYGON
## Dimension:     XY, XYZ
## Bounding box:  xmin: -84.8203 ymin: 39.02153 xmax: -84.25651 ymax: 39.31206
## z_range:       zmin: 0 zmax: 0
## Geodetic CRS:  NAD83
```

```
results2020 <- read_excel("G20_Official_Canvass.xlsx",
                      sheet = "Candidates",skip=1)

mapANDresults2020 <-
  left_join(map2020, results2020, by = c("PRECINCT" = "PRECINCT"))

mapANDresults2020 %>%
  mutate(Biden.prop = `Biden & Harris  (Dem)`/( `Biden & Harris  (Dem)`+ `Trump & Pence       (R
ep)`)) %>%
  ggplot(aes(fill=Biden.prop)) +
  geom_sf()+
  labs(title = "2020 Presidential Election",
       subtitle = "Joe Biden vs Donald Trump",
       fill = "Vote for \nBiden (%)",
       caption = "")+
  scale_fill_gradientn(colours=brewer.pal(n=10,name="RdBu"),na.value = "transparent",
                           breaks=c(0,.25,0.5,.75,1),labels=c("0%","25%","50%","75%","100%"),
                           limits=c(0,1))
```




```
map2021 <- st_zm(st_read("PRECINCT2021_0311.shp"))
```

```
## Reading layer `PRECINCT2021_0311' from data source
##   `C:\Users\Owner\OneDrive - Xavier University\Documents\DSCI 210\04 - Base Swing maps\PRECIN
CT2021_0311.shp'
##   using driver `ESRI Shapefile'
## Simple feature collection with 564 features and 1 field
## Geometry type: MULTIPOLYGON
## Dimension:     XY, XYZ
## Bounding box:  xmin: -84.8203 ymin: 39.02153 xmax: -84.25651 ymax: 39.31206
## z_range:       zmin: 0 zmax: 0
## Geodetic CRS:  NAD83
```

```
cinci21 <- read_excel("G21_Official_Canvass.xlsx", sheet = "Cincinnati", skip = 2)
map_results <- left_join(map2021, cinci21, by = c("NAME" = "PRECINCT"))
total<- rowSums(cinci21[, 6:42])
totalReggie <- sum(map_results$`Reggie         Harris`, na.rm = TRUE)
map_reggie <- map_results %>%  mutate(percentVote = `Reggie         Harris` / `BALLOTS CAST TOTA
L`)
map_reggie <- map_reggie %>%  mutate(percentVoteDist = `Reggie         Harris` / totalReggie)
map_reggie <- map_reggie %>% mutate(base = percentVote > 0.06)
```

Base/Swing Maps

In head-to-head elections, the typical definitions of base/swing/residual are give by:

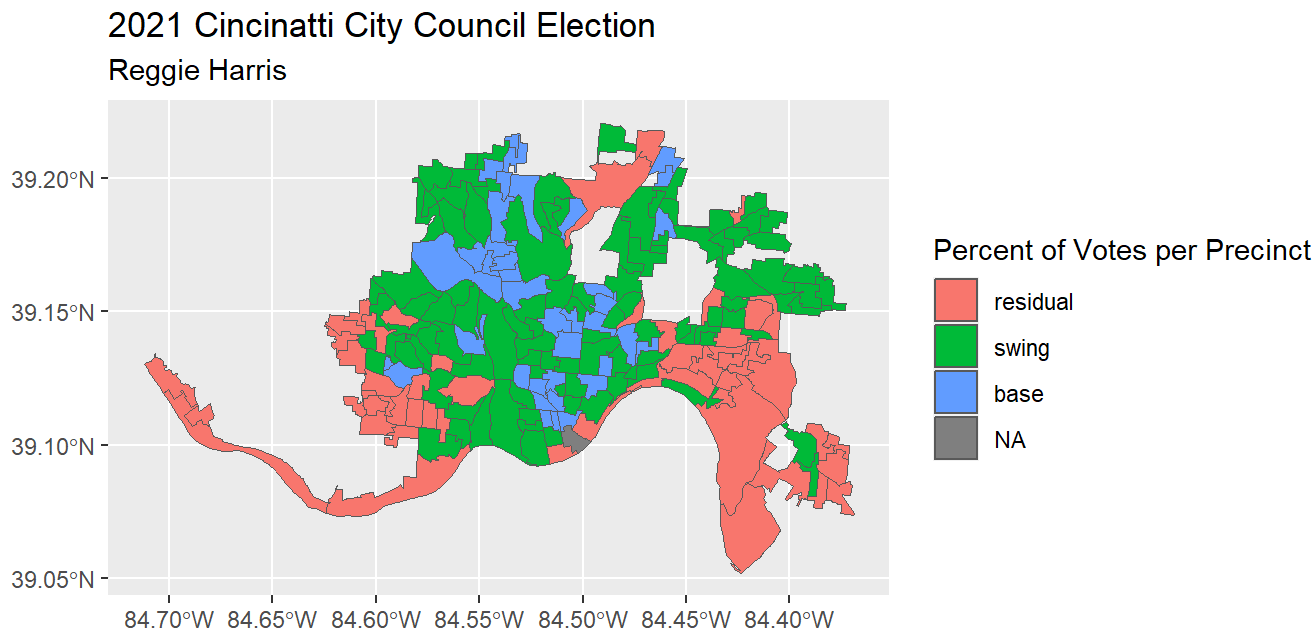
- Base: Greater than 60% support (typically colored red/blue depending on party)
- Swing: Between 40% and 60% support (typically colored yellow)
- Residual: Less than 40% support (typically colored red/blue depending on party)

However, groups in the past have had more interesting ideas for this that have been meaningful to their campaign plan (e.g. “Strong Base”, “Base”, etc.)

Assignment: * Fill in the code to make a base/swing map relative to Reggie Harris

```
    map_reggie %>%
  filter(grepl(" CIN ",NAME)) %>%
  mutate(baseSwing = cut(percentVote, breaks = c(-0.000001,0.40,0.60,1), label = c('residual','s
wing','base'))) %>%
  ggplot(aes(fill= baseSwing)) +
           geom_sf() +

  labs(title = "2021 Cincinatti City Council Election",
       subtitle = "Reggie Harris",
       fill = "Percent of Votes per Precinct",
       caption = "")
```



```
#scale_fill_gradientn(colours=brewer.pal(n=10,name="RdYlBu"),na.value = "transparent",
                      #breaks=c(0.0, 0.40, 0.6, 1 ),labels=c("0%","40%","60%","100%"),
                      #limits=c(0,1))
```

It should look something like this!