Trend

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```
library(tidyverse)
```

```
## Warning: package 'tidyverse' was built under R version 4.0.3
```

```
## -- Attaching packages --------------------------------------------------- tidyverse 1.3.0 --
```

```
## v ggplot2 3.3.2     v purrr   0.3.4
## v tibble  3.0.3     v dplyr   1.0.2
## v tidyr   1.1.2     v stringr 1.4.0
## v readr   1.3.1     v forcats 0.5.0
```

```
## -- Conflicts ------------------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(lubridate)
```

```
## Warning: package 'lubridate' was built under R version 4.0.3
```

```
##
## Attaching package: 'lubridate'
```

```
## The following objects are masked from 'package:base':
##
##     date, intersect, setdiff, union
```

```
library(dygraphs)
```

```
## Warning: package 'dygraphs' was built under R version 4.0.3
```

```
library(gtrendsR)
```

```
## Warning: package 'gtrendsR' was built under R version 4.0.3
```

```
library(dplyr)
library(maps)
```

```
## Warning: package 'maps' was built under R version 4.0.3
```

```
##
## Attaching package: 'maps'
```

```
## The following object is masked from 'package:purrr':
##
##     map
```

```
library(prophet)
```

```
## Loading required package: Rcpp
```

```
## Loading required package: rlang
```

```
##
## Attaching package: 'rlang'
```

```
## The following objects are masked from 'package:purrr':
##
##     %@%, as_function, flatten, flatten_chr, flatten_dbl, flatten_int,
##     flatten_lgl, flatten_raw, invoke, list_along, modify, prepend,
##     splice
```

```
election <- gtrends(keyword=c("Trump", "Biden"), geo="US", time = "today 12-m")
```

```
names(election) #shows different data frames
```

```
## [1] "interest_over_time"  "interest_by_country" "interest_by_region"
## [4] "interest_by_dma"     "interest_by_city"    "related_topics"
## [7] "related_queries"
```

```
election$interest_by_region %>% #The %>% operator is a 'pipe' operator, which passes data from the outp
  filter(keyword == "Biden") %>%
  arrange(desc(hits)) #filters on highest to lowest
```

```
##                location hits keyword geo gprop
## 1  District of Columbia  100   Biden  US   web
## 2              Delaware   82   Biden  US   web
## 3         New Hampshire   70   Biden  US   web
## 4          Pennsylvania   67   Biden  US   web
## 5               Vermont   67   Biden  US   web
## 6         Massachusetts   66   Biden  US   web
## 7                 Maine   64   Biden  US   web
## 8             Minnesota   62   Biden  US   web
## 9            Washington   61   Biden  US   web
## 10             Virginia   60   Biden  US   web
## 11             Michigan   60   Biden  US   web
## 12          Connecticut   60   Biden  US   web
## 13            Wisconsin   59   Biden  US   web
```

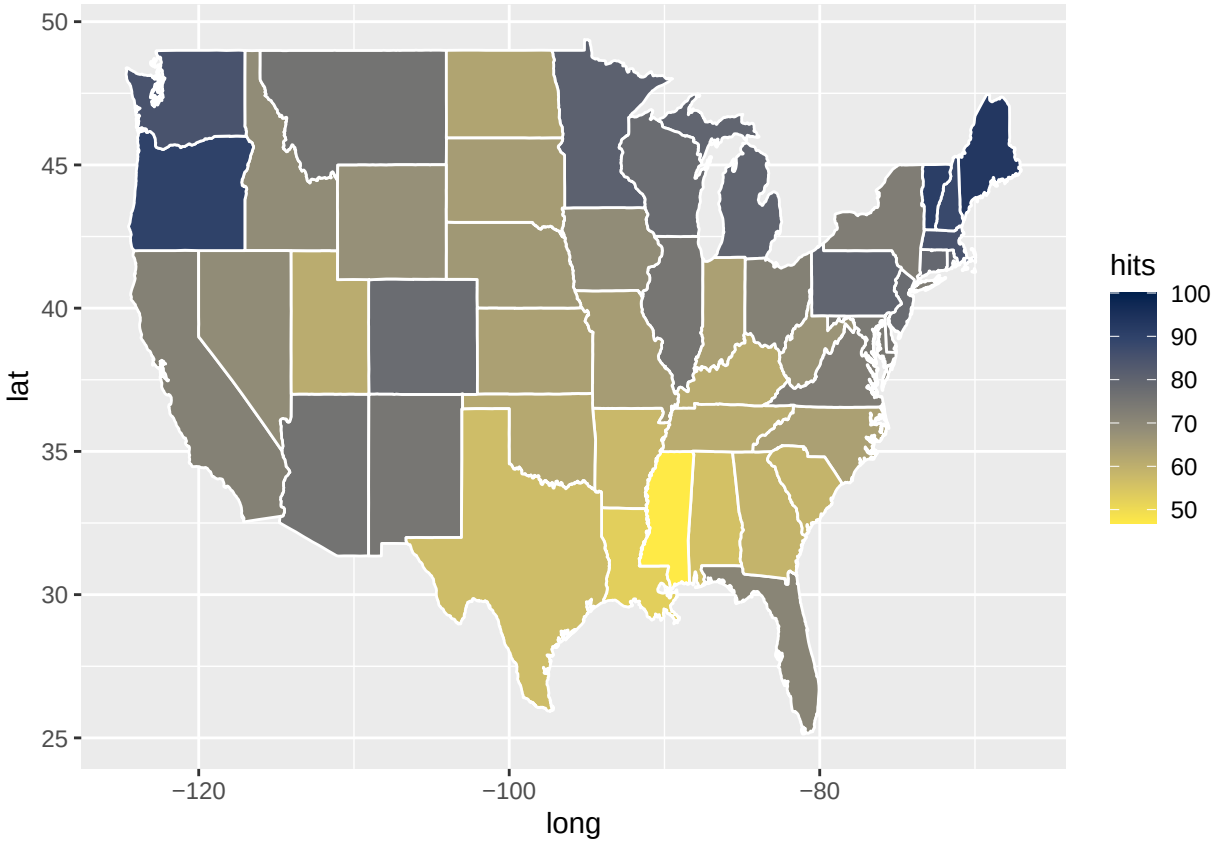
```
## 14          Rhode Island   59   Biden  US   web
## 15                Oregon   59   Biden  US   web
## 16            New Jersey   59   Biden  US   web
## 17              Maryland   58   Biden  US   web
## 18              Colorado   56   Biden  US   web
## 19               Arizona   56   Biden  US   web
## 20                  Iowa   56   Biden  US   web
## 21                  Ohio   54   Biden  US   web
## 22               Florida   53   Biden  US   web
## 23               Montana   53   Biden  US   web
## 24              Illinois   53   Biden  US   web
## 25              New York   53   Biden  US   web
## 26            California   52   Biden  US   web
## 27              Missouri   52   Biden  US   web
## 28        North Carolina   51   Biden  US   web
## 29              Nebraska   51   Biden  US   web
## 30                 Idaho   51   Biden  US   web
## 31         West Virginia   50   Biden  US   web
## 32               Wyoming   49   Biden  US   web
## 33                Kansas   49   Biden  US   web
## 34               Indiana   49   Biden  US   web
## 35            New Mexico   48   Biden  US   web
## 36          South Dakota   48   Biden  US   web
## 37          North Dakota   48   Biden  US   web
## 38                Nevada   47   Biden  US   web
## 39             Tennessee   47   Biden  US   web
## 40        South Carolina   47   Biden  US   web
## 41                Alaska   47   Biden  US   web
## 42                  Utah   46   Biden  US   web
## 43               Georgia   46   Biden  US   web
## 44              Oklahoma   46   Biden  US   web
## 45              Kentucky   45   Biden  US   web
## 46              Arkansas   44   Biden  US   web
## 47               Alabama   42   Biden  US   web
## 48                 Texas   42   Biden  US   web
## 49                Hawaii   42   Biden  US   web
## 50             Louisiana   39   Biden  US   web
## 51           Mississippi   34   Biden  US   web
```

```
mappedelection <- election$interest_by_region %>%
  mutate(region = tolower(location)) %>%
  filter(region %in% region,
         keyword == 'Trump') %>%
  select(region, hits) %>%
  arrange(desc(hits))
mappedelection
```

```
##                   region hits
## 1  district of columbia  100
## 2                 maine   93
## 3               vermont   91
## 4                oregon   90
## 5         new hampshire   88
## 6         massachusetts   85
```

```
## 7            washington   85
## 8             minnesota   81
## 9          pennsylvania   80
## 10             michigan   80
## 11         rhode island   80
## 12          connecticut   79
## 13             colorado   78
## 14            wisconsin   78
## 15           new jersey   78
## 16              montana   76
## 17              arizona   76
## 18             delaware   75
## 19             illinois   75
## 20            new mexico   75
## 21             maryland   74
## 22             new york   73
## 23             virginia   73
## 24           california   72
## 25                 ohio   72
## 26              florida   71
## 27                idaho   69
## 28                 iowa   69
## 29               nevada   69
## 30              wyoming   68
## 31        west virginia   67
## 32             nebraska   66
## 33               alaska   65
## 34         south dakota   65
## 35             missouri   65
## 36               hawaii   64
## 37       north carolina   64
## 38              kansas   64
## 39              indiana   64
## 40         north dakota   63
## 41             oklahoma   62
## 42                 utah   61
## 43            tennessee   61
## 44             kentucky   61
## 45              georgia   59
## 46       south carolina   59
## 47             arkansas   58
## 48                texas   57
## 49              alabama   56
## 50            louisiana   53
## 51          mississippi   47
```

```
states_map <- map_data("state")
votes_map <- left_join(states_map, mappedelection, by = "region")
ggplot(votes_map, aes(long, lat, group = group))+
geom_polygon(aes(fill = hits), color = "white")+
scale_fill_viridis_c(alpha = 1, direction = -1, option = "E")
```


50
45
40
35
30
25
lat
−120
−100
−80
long
hits
100
90
80
70
60
50