Mask Use

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```
library(readr)  # for read_csv
library(knitr)  # for kable
library(usmap)
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5     v dplyr   1.0.7
## v tibble  3.1.2     v stringr 1.4.0
## v tidyr   1.1.3     v forcats 0.5.1
## v purrr   0.3.4
```

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

```
myfile <- "https://raw.githubusercontent.com/nytimes/covid-19-data/master/mask-use/mask-use-by-county.cs

MaskUse <- read_csv(myfile)
```

```
##
## -- Column specification --------------------------------------------------------
## cols(
##   COUNTYFP = col_character(),
##   NEVER = col_double(),
##   RARELY = col_double(),
##   SOMETIMES = col_double(),
##   FREQUENTLY = col_double(),
##   ALWAYS = col_double()
## )
```

```
# assigning new column name
colnames(MaskUse)[1] <- "fips"

head(MaskUse)
```

```
## # A tibble: 6 x 6
##   fips  NEVER RARELY SOMETIMES FREQUENTLY ALWAYS
##   <chr> <dbl>  <dbl>     <dbl>      <dbl>  <dbl>
## 1 01001 0.053  0.074     0.134      0.295  0.444
## 2 01003 0.083  0.059     0.098      0.323  0.436
## 3 01005 0.067  0.121     0.12       0.201  0.491
## 4 01007 0.02   0.034     0.096      0.278  0.572
## 5 01009 0.053  0.114     0.18       0.194  0.459
## 6 01011 0.031  0.04      0.144      0.286  0.5
```

```r
fipsDF <- fips_info(MaskUse$fips)
head(fipsDF)
```

```
##     full abbr                      county  fips
## 1 Alaska   AK Aleutians West Census Area 02016
## 2 Alaska   AK     Aleutians East Borough 02013
## 3 Alaska   AK       Kusilvak Census Area 02158
## 4 Alaska   AK Lake and Peninsula Borough 02164
## 5 Alaska   AK  Matanuska-Susitna Borough 02170
## 6 Alaska   AK           Nome Census Area 02180
```

```r
MaskUseDF <- merge(x = MaskUse, y = fipsDF, by = "fips", all = TRUE)
head(MaskUseDF)
```

```
##    fips NEVER RARELY SOMETIMES FREQUENTLY ALWAYS    full abbr         county
## 1 01001 0.053  0.074     0.134      0.295  0.444 Alabama   AL Autauga County
## 2 01003 0.083  0.059     0.098      0.323  0.436 Alabama   AL Baldwin County
## 3 01005 0.067  0.121     0.120      0.201  0.491 Alabama   AL Barbour County
## 4 01007 0.020  0.034     0.096      0.278  0.572 Alabama   AL    Bibb County
## 5 01009 0.053  0.114     0.180      0.194  0.459 Alabama   AL  Blount County
## 6 01011 0.031  0.040     0.144      0.286  0.500 Alabama   AL Bullock County
```

```r
# assigning new column name
colnames(MaskUseDF)[7] <- "state"
```

```r
MaskUseDF <- MaskUseDF %>%
    mutate(county = str_remove_all(county, " County"))
```

```r
#myfile2 <- "https://raw.githubusercontent.com/fivethirtyeight/data/master/partisan-lean/2020/fivethirt
#Vote <- read_csv(myfile2)
```

```r
countyVotes <- read_csv("countypres_2000-2020.csv")
```

```
##
## -- Column specification --------------------------------------------------------
## cols(
##   year = col_double(),
##   state = col_character(),
##   state_po = col_character(),
##   county_name = col_character(),
##   county_fips = col_double(),
##   office = col_character(),
##   candidate = col_character(),
##   party = col_character(),
##   candidatevotes = col_double(),
##   totalvotes = col_double(),
##   version = col_double(),
##   mode = col_character()
## )
```

```r
countyVotes <- subset(countyVotes, countyVotes$year == 2020)
countyVotes <- countyVotes[-c(1,2,3,4,6,11,12)]
colnames(countyVotes)[1] <- "fips"
```

```r
sum(is.na(countyVotes$fips))
```

```
## [1] 9
```

```
countyVotes <- countyVotes[!is.na(countyVotes$fips), ]
sum(is.na(countyVotes$fips))
```

```
## [1] 0
```

```
for (fipNum in countyVotes$fips){
  if (str_count(fipNum)==4){
    countyVotes$fips[fipNum] <- paste0(0, fipNum)
  }
}
head(countyVotes)
```

```
## # A tibble: 6 x 5
##   fips  candidate         party      candidatevotes totalvotes
##   <chr> <chr>             <chr>               <dbl>      <dbl>
## 1 1001  JOSEPH R BIDEN JR DEMOCRAT             7503      27770
## 2 1001  OTHER             OTHER                 429      27770
## 3 1001  DONALD J TRUMP    REPUBLICAN          19838      27770
## 4 1003  JOSEPH R BIDEN JR DEMOCRAT            24578     109679
## 5 1003  OTHER             OTHER                1557     109679
## 6 1003  DONALD J TRUMP    REPUBLICAN          83544     109679
```

```
MaskUseVotes <- merge(x = MaskUseDF, y = countyVotes, by = "fips", all = TRUE)
head(MaskUseVotes)
```

```
##    fips NEVER RARELY SOMETIMES FREQUENTLY ALWAYS   state abbr  county
## 1 01001 0.053  0.074     0.134      0.295  0.444 Alabama   AL Autauga
## 2 01003 0.083  0.059     0.098      0.323  0.436 Alabama   AL Baldwin
## 3 01005 0.067  0.121     0.120      0.201  0.491 Alabama   AL Barbour
## 4 01007 0.020  0.034     0.096      0.278  0.572 Alabama   AL    Bibb
## 5 01009 0.053  0.114     0.180      0.194  0.459 Alabama   AL  Blount
## 6 01011 0.031  0.040     0.144      0.286  0.500 Alabama   AL Bullock
##        candidate       party candidatevotes totalvotes
## 1   JO JORGENSEN LIBERTARIAN             34       6942
## 2   JO JORGENSEN LIBERTARIAN              0       6942
## 3          OTHER       OTHER            124       6942
## 4          OTHER       OTHER              0       6942
## 5 DONALD J TRUMP  REPUBLICAN           3791       6942
## 6 DONALD J TRUMP  REPUBLICAN             18       6942
```

```
sum(is.na(MaskUseVotes))
```

```
## [1] 21874
```

```
MaskUseVotes <- na.omit(MaskUseVotes)
sum(is.na(MaskUseVotes))
```

```
## [1] 0
```

```
str(MaskUseVotes)
```

```
## 'data.frame':    19365 obs. of  13 variables:
##  $ fips          : chr  "01001" "01003" "01005" "01007" ...
##  $ NEVER         : num  0.053 0.083 0.067 0.02 0.053 0.031 0.102 0.152 0.117 0.135 ...
##  $ RARELY        : num  0.074 0.059 0.121 0.034 0.114 0.04 0.053 0.108 0.037 0.027 ...
##  $ SOMETIMES     : num  0.134 0.098 0.12 0.096 0.18 0.144 0.257 0.13 0.15 0.161 ...
##  $ FREQUENTLY    : num  0.295 0.323 0.201 0.278 0.194 0.286 0.137 0.167 0.136 0.158 ...
##  $ ALWAYS        : num  0.444 0.436 0.491 0.572 0.459 0.5 0.451 0.442 0.56 0.52 ...
```

```
##  $ state         : chr  "Alabama" "Alabama" "Alabama" "Alabama" ...
##  $ abbr          : chr  "AL" "AL" "AL" "AL" ...
##  $ county        : chr  "Autauga" "Baldwin" "Barbour" "Bibb" ...
##  $ candidate     : chr  "JO JORGENSEN" "JO JORGENSEN" "OTHER" "OTHER" ...
##  $ party         : chr  "LIBERTARIAN" "LIBERTARIAN" "OTHER" "OTHER" ...
##  $ candidatevotes: num  34 0 124 0 3791 ...
##  $ totalvotes    : num  6942 6942 6942 6942 6942 ...
##  - attr(*, "na.action")= 'omit' Named int [1:2748] 68 69 70 71 72 73 74 75 76 77 ...
##   ..- attr(*, "names")= chr [1:2748] "68" "69" "70" "71" ...
```

```
MaskUseVotes$candidate <- as.factor(MaskUseVotes$candidate)
MaskUseVotes$party <- as.factor(MaskUseVotes$party)

str(MaskUseVotes)
```

```
## 'data.frame':    19365 obs. of  13 variables:
##  $ fips          : chr  "01001" "01003" "01005" "01007" ...
##  $ NEVER         : num  0.053 0.083 0.067 0.02 0.053 0.031 0.102 0.152 0.117 0.135 ...
##  $ RARELY        : num  0.074 0.059 0.121 0.034 0.114 0.04 0.053 0.108 0.037 0.027 ...
##  $ SOMETIMES     : num  0.134 0.098 0.12 0.096 0.18 0.144 0.257 0.13 0.15 0.161 ...
##  $ FREQUENTLY    : num  0.295 0.323 0.201 0.278 0.194 0.286 0.137 0.167 0.136 0.158 ...
##  $ ALWAYS        : num  0.444 0.436 0.491 0.572 0.459 0.5 0.451 0.442 0.56 0.52 ...
##  $ state         : chr  "Alabama" "Alabama" "Alabama" "Alabama" ...
##  $ abbr          : chr  "AL" "AL" "AL" "AL" ...
##  $ county        : chr  "Autauga" "Baldwin" "Barbour" "Bibb" ...
##  $ candidate     : Factor w/ 4 levels "DONALD J TRUMP",..: 2 2 4 4 1 1 3 3 4 4 ...
##  $ party         : Factor w/ 5 levels "DEMOCRAT","GREEN",..: 3 3 4 4 5 5 1 1 2 2 ...
##  $ candidatevotes: num  34 0 124 0 3791 ...
##  $ totalvotes    : num  6942 6942 6942 6942 6942 ...
##  - attr(*, "na.action")= 'omit' Named int [1:2748] 68 69 70 71 72 73 74 75 76 77 ...
##   ..- attr(*, "names")= chr [1:2748] "68" "69" "70" "71" ...
```

```
write.csv(MaskUseVotes,"MaskUseVotes.csv", row.names = FALSE)
```