# Homework #5 535

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#Packages to load and set global options

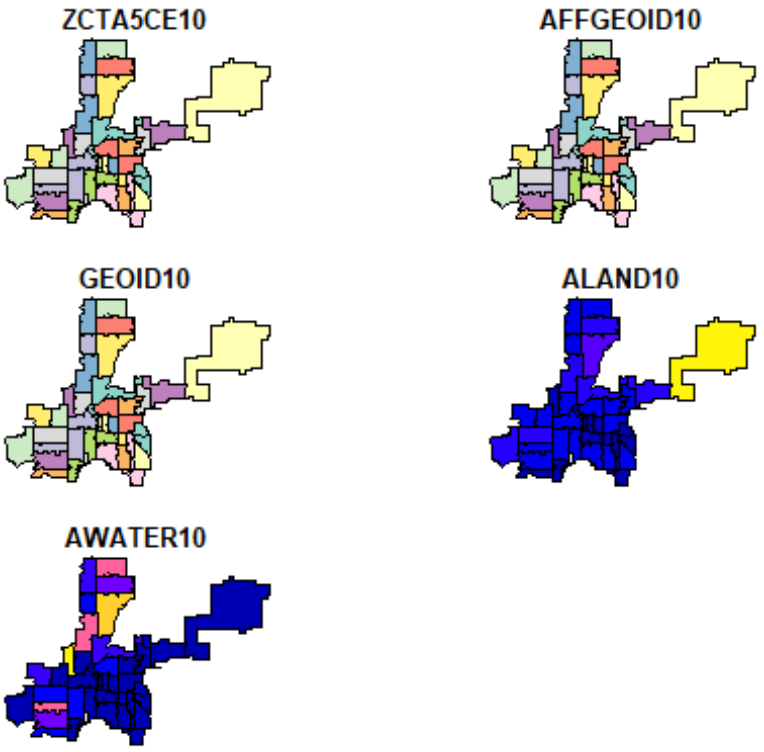
#Load in Homicide data set

```
#load in data set, filter by city, select columns, rename
homicide_data <- read.csv("data_HW5/homicide-data.csv") %>%
  filter(city=="Denver") %>%
  select(lat,lon,disposition,victim_race)
Denver_data <- homicide_data
```

#Plot by zipcodes

```
#plot by zip codes

denver_zipcodes <- zctas(cb=TRUE,starts_with=c("802"),class="sf")
plot(denver_zipcodes)
```




#Filter by race

```
#filter by race
race <- Denver_data %>%
  group_by(victim_race) %>%
  mutate(count=n()) %>%
  arrange(desc(count)) %>%
  ungroup() %>%
  filter(victim_race==c("Black","White","Hispanic"))
race
```

```
## # A tibble: 100 x 5
##      lat   lon disposition           victim_race count
##    <dbl> <dbl> <fct>                 <fct>       <int>
##  1  39.8 -105. Open/No arrest        Black         113
##  2  39.8 -105. Closed by arrest      Black         113
##  3  39.8 -105. Open/No arrest        Black         113
##  4  39.7 -105. Open/No arrest        Black         113
##  5  39.8 -105. Closed by arrest      Black         113
##  6  39.7 -105. Closed without arrest Black         113
##  7  39.8 -105. Closed by arrest      Black         113
##  8  39.8 -105. Closed by arrest      Black         113
##  9  39.8 -105. Open/No arrest        Black         113
## 10  39.8 -105. Closed without arrest Black         113
## # ... with 90 more rows
```

#Set Denver with crs for zips

```
#set Denver with crs code for zips
denver_crs <- race%>%
  filter(!is.na(lat))%>%
  st_as_sf(coords=c("lon","lat")) %>%
  st_set_crs(4269)
```

#Seperate into solved vs unsolved

```
#seperate into solved vs unsolved and rename accordingly
denver_disp <- denver_crs %>%
  mutate(disposition= factor(disposition,levels = c("Closed without arrest",
                                                    "Closed by arrest",
                                                    "Open/No arrest"),
                             labels=c("unsolved","unsolved","solved")))
denver_disp
```

```
## Simple feature collection with 100 features and 3 fields
## geometry type:  POINT
## dimension:      XY
## bbox:           xmin: -105.0603 ymin: 39.63327 xmax: -104.7514 ymax:
39.79665
## epsg (SRID):    4269
## proj4string:    +proj=longlat +ellps=GRS80 +towgs84=0,0,0,0,0,0,0 +no_defs
## # A tibble: 100 x 4
##    disposition victim_race count             geometry
```

```
##  * <fct>       <fct>       <int>          <POINT [°]>
##  1 solved      Black         113 (-104.9499 39.76179)
##  2 unsolved    Black         113 (-104.9309 39.75934)
##  3 solved      Black         113 (-104.9592 39.76442)
##  4 solved      Black         113 (-104.9108 39.73973)
##  5 unsolved    Black         113 (-104.8104 39.77525)
##  6 unsolved    Black         113  (-104.9003 39.6991)
##  7 unsolved    Black         113 (-104.9645 39.76563)
##  8 unsolved    Black         113 (-104.9915 39.75154)
##  9 solved      Black         113 (-104.9256 39.76356)
## 10 unsolved    Black         113   (-104.9887 39.755)
## # ... with 90 more rows
```

#Final map

```
map<- ggplot()+
  geom_sf(data = denver_zipcodes,color= "lightgray")+
  geom_sf(data =
denver_disp,aes(color=factor(victim_race)),show.legend='point')+
  facet_wrap(~disposition,ncol=1)+
  ggtitle("Homicide cases in Denver, Co")+
  labs(x="Longitude",y="Latitude")+
  theme(axis.text.x=element_text(angle=90,hjust=1))+
  labs(colour="Victim Race")


map
```