**R Homework 5 with Commits**

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cities <- **read\_csv**("../data/homicide-data.csv")

## Parsed with column specification:  
## cols(  
## uid = col\_character(),  
## reported\_date = col\_double(),  
## victim\_last = col\_character(),  
## victim\_first = col\_character(),  
## victim\_race = col\_character(),  
## victim\_age = col\_character(),  
## victim\_sex = col\_character(),  
## city = col\_character(),  
## state = col\_character(),  
## lat = col\_double(),  
## lon = col\_double(),  
## disposition = col\_character()  
## )

denver <- cities **%>%**   
 **filter**(city **==** "Denver") **%>%**   
 **select**(lat, lon, disposition, victim\_race)  
denver

## # A tibble: 312 x 4  
## lat lon disposition victim\_race  
## <dbl> <dbl> <chr> <chr>   
## 1 39.7 -105. Closed without arrest White   
## 2 39.7 -105. Closed by arrest Hispanic   
## 3 39.8 -105. Closed by arrest Other   
## 4 39.8 -105. Open/No arrest Black   
## 5 39.8 -105. Open/No arrest Black   
## 6 39.7 -105. Closed by arrest Hispanic   
## 7 39.6 -105. Closed without arrest White   
## 8 39.7 -105. Closed without arrest Hispanic   
## 9 39.7 -105. Closed by arrest Asian   
## 10 39.7 -105. Closed by arrest White   
## # ... with 302 more rows

denver <- denver **%>%**   
 **group\_by**(victim\_race) **%>%**   
 **mutate**(count = **n**()) **%>%** *#This function counted the number of homicides per race.*  
 **arrange**(**desc**(count)) **%>%** *#This showed the race with the highest number of homicides on top.*   
 **ungroup**() **%>%** *#Ungrouping keeps the data clean.*   
 **filter**(victim\_race **==** **c**("Black", "White", "Hispanic"))   
denver

## # A tibble: 100 x 5  
## lat lon disposition victim\_race count  
## <dbl> <dbl> <chr> <chr> <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

denver\_crs <- denver **%>%**   
 **filter**(**!is.na**(lat)) **%>%**   
 **st\_as\_sf**(coords = **c**("lon", "lat")) **%>%**   
 **st\_set\_crs**(4269)

denver\_zip <- **zctas**(cb = TRUE, starts\_with = "802",   
 class = "sf")  
**plot**(denver\_zip)



*#Separating the homicides into unsolved and solved.*   
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> <chr> <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

denver\_map <- **ggplot**() **+**   
 **geom\_sf**(data = denver\_zip, 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", subtitle = "(By Zipcode)")**+**  
 **labs**(x = "Longitude", "Latitude")**+**  
 **theme**(axis.text.x = **element\_text**(angle = 90, hjust = 1))**+**  
 **labs**(colour = "Victim Race")   
denver\_map

