hw write up

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```
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

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

```
library(lubridate)
```

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

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

```
library(sf)
```

```
## Warning: package 'sf' was built under R version 4.3.3

## Linking to GEOS 3.11.0, GDAL 3.5.3, PROJ 9.1.0; sf_use_s2() is TRUE
```

```
library(tigris)
```

```
## To enable caching of data, set `options(tigris_use_cache = TRUE)`
## in your R script or .Rprofile.
```

```
library(forcats)
library(readr)


#load in data from data folder
getwd()
```

```
## [1] "/Users/Melody/Library/CloudStorage/OneDrive-Colostate/Ph.D/R_class_hw5/writing"
```

```
homicide_data <- read.csv("../data/homicide.csv")
#head(homicide_data)
#colnames(homicide_data)


# Filter for Denver homicides
denver_homicides <- homicide_data %>%
  filter(city == "Denver")

# Convert reported_date to Date type
denver_homicides$reported_date <- as.Date(denver_homicides$reported_date)

# make a column for solved vs unsolved
denver_homicides$solved <- ifelse(denver_homicides$disposition == "Solved", "Solved", "Unsolved")

# make a column for victim's race, lumping others into a category for the top 3 races
denver_homicides$victim_race_lumped <- fct_lump(denver_homicides$victim_race, n = 3)

# Convert latitude and longitude to a sf object
denver_homicides_sf <- st_as_sf(denver_homicides, coords = c("lon", "lat"), crs = 4326)

# Download sub-city geography for Denver
denver_tracts <- tracts(state = "CO", county = "Denver", year = 2020)
```

```
##   |                                                                              |
```

```
# Create the plot
ggplot() +
  # Plot the tracts as a base layer
  geom_sf(data = denver_tracts, fill = "lightgray", color = "white", size = 0.2) +
  # Plot the homicides as points
  geom_sf(data = denver_homicides_sf, aes(color = victim_race_lumped, shape = solved), size = 2, alpha =
  # Add facets for solved vs unsolved
  facet_wrap(~ solved) +
  # Customize the color scale for the races
  scale_color_manual(values = c("White" = "blue", "Black" = "red", "Hispanic" = "green", "Other" = "gra
  labs(title = "Homicide Locations in Denver",
       subtitle = "Faceted by Solved vs Unsolved, Colored by Victim's Race") +
  theme_minimal() +
  theme(legend.position = "right",
        axis.text = element_blank(),
        axis.title = element_blank(),
        panel.grid = element_blank()) +
  guides(shape = guide_legend(title = "Homicide Status"),
         color = guide_legend(title = "Race"))
```

Homicide Locations in Denver

Faceted by Solved vs Unsolved, Colored by Victim's Race