Homework5

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```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4          v readr     2.1.5
## v forcats   1.0.0          v stringr   1.5.1
## v ggplot2   3.5.1.9000     v tibble    3.2.1
## v lubridate 1.9.3          v tidyr     1.3.1
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(ggplot2)
library(ggthemes)
library(conflicted)
library(purrr)
library(scales)
library(tigris)
```

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

```
library(devtools)
```

```
## Loading required package: usethis
```

```
library(forcats)
library(sf)
```

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

```
library(RColorBrewer)
```

```
homicides <- read_csv("/Users/s/Desktop/Homework5/Homework5/data/homicide-data.csv")
```

```
## Rows: 52179 Columns: 12
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (9): uid, victim_last, victim_first, victim_race, victim_age, victim_sex...
## dbl (3): reported_date, lat, lon
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```r
homicides$city_name <- paste(homicides$city, homicides$state, sep = ", ")
```

```r
location_Denver <- homicides %>%
  dplyr::filter(city_name == "Denver, CO") %>%
  dplyr::select(lon, lat, victim_race, disposition)
```

```r
location_Denver_one <- location_Denver %>%
  select(lon, lat, victim_race, disposition)
```

```r
location_Denver_one$victim_race <- forcats::fct_infreq(location_Denver_one$victim_race)
```

```r
levels(location_Denver_one$victim_race)
```

```
## [1] "Black"    "White"    "Hispanic" "Asian"    "Other"
```

```r
location_Denver_one$victim_race <- fct_lump_n(location_Denver_one$victim_race, n = 3, other_level = "Ot
```

```r
location_Denver_one$Solved <- ifelse(location_Denver_one$disposition == "Open/No arrest", "Unsolved", "
```

```r
co_counties <- counties(state = "CO", cb = TRUE, class = "sf")
```

```
## Retrieving data for the year 2022
```

```
##   |                                                                              |
```

```r
class(co_counties)
```

```
## [1] "sf"         "data.frame"
```

```r
denver <- co_counties %>%
  dplyr::filter(NAME == "Denver")
denver
```

```
## Simple feature collection with 1 feature and 12 fields
## Geometry type: MULTIPOLYGON
## Dimension:     XY
## Bounding box:  xmin: -105.1099 ymin: 39.61433 xmax: -104.5996 ymax: 39.91418
## Geodetic CRS:  NAD83
##   STATEFP COUNTYFP COUNTYNS       AFFGEOID GEOID   NAME      NAMELSAD STUSPS
## 1      08      031 00198131 0500000US08031 08031 Denver Denver County     CO
##   STATE_NAME LSAD     ALAND  AWATER                       geometry
## 1   Colorado   06 396460127 4275563 MULTIPOLYGON (((-104.9341 3...
```

```r
denver_tracts <- tracts("CO", "Denver")
```

```
## Retrieving data for the year 2022
```

```
##   |                                                                              |
```

```r
ggplot() +
  geom_sf(data = denver, color = "lightgray", fill = "white") +
  geom_sf(data = denver_tracts, color = "darkgray", fill = NA, size = 0.3) +
  geom_point(data = location_Denver_one, mapping = aes(x = lon, y = lat, color = victim_race),
             size = 0.7, alpha = 0.7) +
  facet_wrap(~Solved) +
  scale_color_brewer(palette = "Set1") +
  theme_void() +
  ggtitle("Number of homicides in Denver, CO") +
  theme(strip.text = element_text(size = 14, face = "bold"),
        legend.title = element_text(size = 12, face = "bold"),
```

```
        legend.text = element_text(size = 10),
        plot.title = element_text (size = 18, face = "bold", hjust = 0.5))
```