Homework 5

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Loading of necessary libraries.

```
library(tidyverse)
library(rmarkdown)
library(lubridate)
library(tigris)
library(sf)
library(tidyverse)
library(forcats)
options(tigris_class = "sf")
options(tigris_use_cache = TRUE)
```

Loading and cleaning of data.

```
homicides <- read_csv("../data/homicide_data.csv") %>%
  unite(col = "city_state", city, state, sep = ",") %>%
  mutate(reported_date = ymd(reported_date),
         victim_first = str_to_sentence(victim_first),
         victim_last = str_to_sentence(victim_last),
         disposition = str_to_lower(disposition),
         disposition = str_replace(disposition, "closed without arrest", "no arrest"),
         disposition = str_replace(disposition, "open/no arrest", "no arrest")) %>%
  filter(city_state == "Chicago,IL") %>%
  print()
```

```
## # A tibble: 5,535 x 11
##    uid   reported_date victim_last victim_first victim_race victim_age
##    <chr> <date>        <chr>       <chr>        <chr>       <chr>
##  1 Chi-~ 2007-01-01    Thomas      Leon         Black       36
##  2 Chi-~ 2007-01-01    Allen       Mario        Black       31
##  3 Chi-~ 2007-01-01    Hall        Challah      Black       21
##  4 Chi-~ 2007-01-01    Guzman      Camerino     Hispanic    25
##  5 Chi-~ 2007-01-02    Root        Frank        White       34
##  6 Chi-~ 2007-01-04    White       Meredith     Black       37
##  7 Chi-~ 2007-01-04    Abunimeh    Rami m       White       31
##  8 Chi-~ 2007-01-08    Bell        Dennis       Black       38
##  9 Chi-~ 2007-01-11    Cambell     Ronnie       Black       29
## 10 Chi-~ 2007-01-12    Denton      Najja        Black       31
## # ... with 5,525 more rows, and 5 more variables: victim_sex <chr>,
## #   city_state <chr>, lat <dbl>, lon <dbl>, disposition <chr>
```

Creation of map of Chicago,IL.
Conversion of df to sf object of homicides.
Thanks Kyle! https://walkerke.github.io/2017/05/tigris-metros/

```
homicides$victim_race <- as.factor(homicides$victim_race)

sf_homicides <- st_as_sf(x = homicides, coords = c("lon", "lat")) %>%
  st_set_crs(4269)

chicago <- tracts("IL", county = "Cook", cb = TRUE)
```

```
ggplot() +
  geom_sf(data = chicago) +
  geom_sf(data = sf_homicides, alpha = 0.4,
          aes(color = fct_lump(victim_race, n = 3))) +
  facet_wrap("disposition", strip.position = c("bottom")) +
  scale_color_viridis_d() +
  ggtitle("Chicago Homicide incidents from 2007-2009",
          subtitle = "Murders separated by successful arrest or not") +
  theme_void() +
  theme(panel.background = element_rect(fill = "black"),
        plot.background = element_rect(fill = "grey"),
        legend.title=element_blank())
```