# Homework 5

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2022-11-30

```
library(readr)

homicide_data <-
read_csv("https://raw.githubusercontent.com/washingtonpost/data-
homicides/master/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.
```

#Picked Los Angeles as my primary city

```
library(tidyverse)
```

```
## ── Attaching packages ─────────────────────────────────────── tidyverse
1.3.2 ──
## ✓ ggplot2 3.3.6      ✓ dplyr   1.0.10
## ✓ tibble  3.1.8      ✓ stringr 1.4.1
## ✓ tidyr   1.2.1      ✓ forcats 0.5.2
## ✓ purrr   0.3.4
## ── Conflicts ────────────────────────────────────────── tidyverse_conflicts() ──
## ✖ dplyr::filter() masks stats::filter()
## ✖ dplyr::lag()    masks stats::lag()
```

```
library(forcats)

losAngeles <- homicide_data %>%
  mutate(city_name = str_c(homicide_data$city, homicide_data$state, sep = ",
")) %>%
  filter(city_name == "Los Angeles, CA") %>%
  mutate(Status = case_when(
    grepl("Closed by arrest", disposition) ~ "solved",
    grepl("Closed without arrest", disposition) ~ "unsolved",
```

```
    grepl("Open/No arrest", disposition) ~ "unsolved",
        TRUE ~ "NA")) %>%
  mutate(homicide_race = fct_lump_min(victim_race, min = 100))
```

Use different colors to show the three race groups with the highest number of homicides for that city (you may find the fct_lump function from forcats useful for this).

```
sum(losAngeles$victim_race == "Hispanic")
```

```
## [1] 1088
```

```
sum(losAngeles$victim_race == "Black")
```

```
## [1] 886
```

```
sum(losAngeles$victim_race == "White")
```

```
## [1] 192
```

```
sum(losAngeles$victim_race == "Other")
```

```
## [1] 59
```

```
sum(losAngeles$victim_race == "Asian")
```

```
## [1] 29
```

```
sum(losAngeles$victim_race == "Unknown")
```

```
## [1] 3
```

#Mapping it out

```
library(sf)
```

```
## Warning: package 'sf' was built under R version 4.2.2
```

```
## Linking to GEOS 3.9.3, GDAL 3.5.2, PROJ 8.2.1; sf_use_s2() is TRUE
```

```
library(tigris)
```

```
## Warning: package 'tigris' was built under R version 4.2.2
```

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

```
library(ggplot2)
library(viridis)
```

```
## Warning: package 'viridis' was built under R version 4.2.2
```

```
## Loading required package: viridisLite
```

```
library(MAP)
```

```
## Warning: package 'MAP' was built under R version 4.2.2

## Loading required package: flexmix

## Warning: package 'flexmix' was built under R version 4.2.2

## Loading required package: lattice

## Loading required package: Matrix

##
## Attaching package: 'Matrix'

## The following objects are masked from 'package:tidyr':
##
##     expand, pack, unpack

ca_counties <- counties(state = "CA", cb = TRUE, class = "sf")

## Retrieving data for the year 2020

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ggplot() +
  geom_sf(data = ca_counties, color = "lightgray")
```
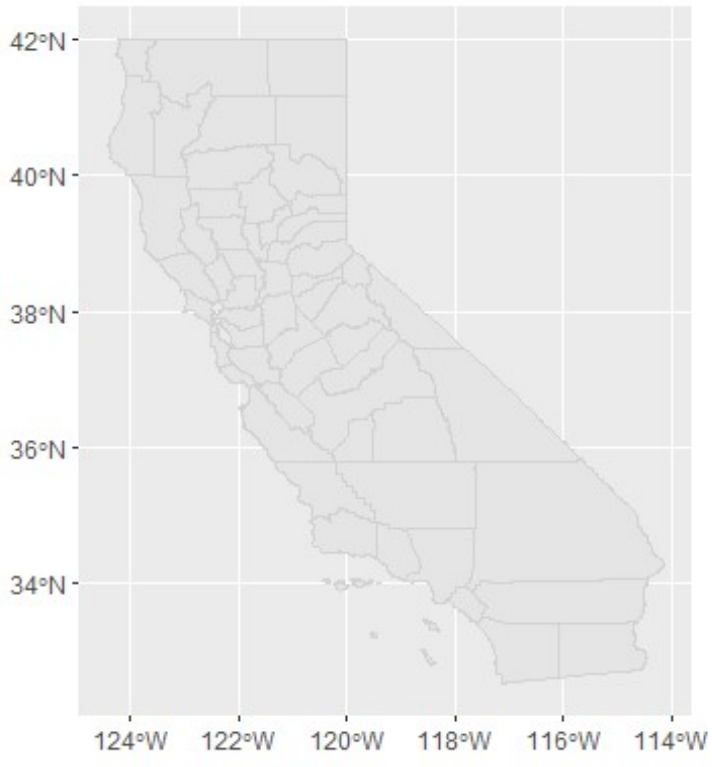
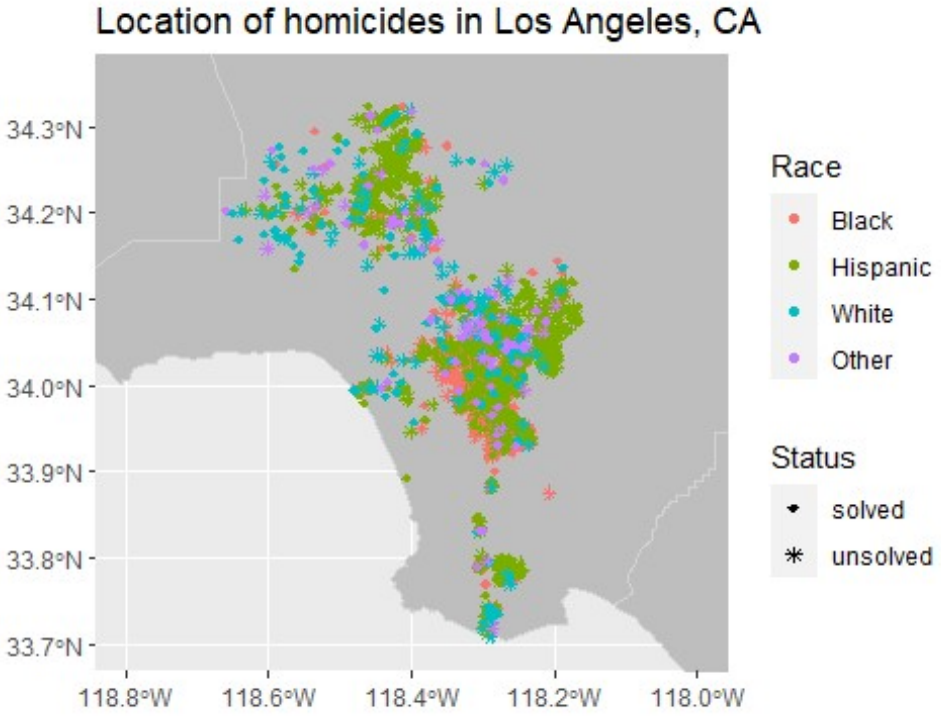




```
la_homicides <- losAngeles %>%
  select(uid, reported_date, homicide_race, lat, lon, Status)

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

ggplot() +
  geom_sf(data = ca_counties, color = "lightgray", fill = "gray") +
  xlim(c(-118.8, -118)) + ylim(c(33.7, 34.35)) +
  geom_sf(data = la_homicides, aes(color = homicide_race,
                                   fill = homicide_race,
                                   shape = Status)) +
  scale_fill_discrete(name = "Race") +
  scale_color_discrete(name = "Race") +
  scale_shape_manual(values = c(18, 8)) +
  ggtitle("Location of homicides in Los Angeles, CA")
```


Location of homicides in Los Angeles, CA
34.3°N
34.2°N
34.1°N
34.0°N
33.9°N
33.8°N
33.7°N
118.8°W
118.6°W
118.4°W
118.2°W
118.0°W
Race
Black
Hispanic
White
Other
Status
solved
unsolved