# Homework #5

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For the following assignment I looked at solved/unsolved homicides in Los Angeles County in California. The top 3 homicide victim races were White, Hispanic, and Black.

```
library(tidyverse)
```

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

```
## Warning: package 'ggplot2' was built under R version 4.3.3
```

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

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

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

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.2     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.0
## v ggplot2   3.5.1     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(tigris)
```

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

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

```
library(maps)
```

```
## Warning: package 'maps' was built under R version 4.3.2
```

```
##
## Attaching package: 'maps'
##
## The following object is masked from 'package:purrr':
##
##     map
```

```
library(sf)
```

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

```
## Linking to GEOS 3.11.2, GDAL 3.8.2, PROJ 9.3.1; sf_use_s2() is TRUE
```

```
library(viridis)
```

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

```
## Loading required package: viridisLite
##
## Attaching package: 'viridis'
##
## The following object is masked from 'package:maps':
##
##     unemp
```

```
homicides <- read.csv('homicide-data.csv')

homicides <- homicides %>%
  mutate(state = replace(state, state == "wI", "WI")) %>%
  mutate('city_name' =  paste(homicides$city, homicides$state, sep = ", "))

#group_by city
#sum of unsolved homicides
unsolved <- homicides %>%
  group_by(city_name) %>%
  mutate("unsolved_homicides" = disposition %in% c("Closed without arrest", "Open/No arrest"))


#I'm most interested in Los Angeles

LA <- unsolved %>%
  filter(city_name == "Los Angeles, CA")

us_states <- data.frame(state= state.name, area = state.area, region = state.region)

la_subdivisions <- county_subdivisions(state = "CA", county = "Los Angeles", cb = TRUE, class = "sf")
```

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

```
##   |                                                                              |
```

```
la_blocks <- block_groups(state = "CA", county = "Los Angeles", cb = TRUE, class = "sf")
```

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

```
##   |                                                                              |
```

```
la_tracts <- tracts(state = "CA", county = "Los Angeles", cb = TRUE, class = "sf")
```

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

```
##   |                                                                              |
```

```
la_county <- counties(state = "CA", cb = TRUE, class = "sf") %>%
  filter(NAME=="Los Angeles")
```

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

```
##   |                                                                              |
```

```
top3_race <- LA %>%
  group_by(victim_race) %>%
  count()

LA <- st_as_sf(LA, coords = c("lon", "lat"))%>%
  st_set_crs(4269) %>%
  filter(victim_race %in% c("White", "Black", "Hispanic")) %>%
  mutate(unsolved_homicides = as.character(unsolved_homicides))


la_labs <- as_labeller(c( "TRUE" = "Unsolved Homicides", "FALSE" = "Solved Homicides"))

ggplot() +
  geom_sf(data =la_county, color = 'black',
          fill = 'azure') +
  geom_sf(data =la_subdivisions,  color = 'lightgrey',
          fill = 'azure', alpha = 0.25) +
  geom_sf(data =la_blocks,  color = 'lightgrey',
          fill = 'azure', alpha = 0.25)  +
  geom_sf(data =la_tracts,  color = 'lightgrey',
          fill= 'azure', alpha = 0.25) +
  geom_sf(data=LA,  aes(color = victim_race), size = 1.5) +
  facet_wrap(~unsolved_homicides, labeller = la_labs) +
  scale_color_viridis(discrete=TRUE) +
  theme_bw() +
  theme(panel.grid.major = element_blank(), panel.grid.minor = element_blank()) +
  theme(axis.text.y=element_blank(),axis.ticks=element_blank(),
        axis.title.x=element_blank(), axis.text.x=element_blank()) +
  theme(strip.text = element_text(size = 10, face='bold')) +
  labs(title = "Homicides in Los Angeles County", color = "Victim Race")
```

Homicides in Los Angeles County