HW5

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List files that are saved in the data subdirectory

```r
list.files("../data/")
```

```
## [1] "homicide-data.csv"
```

Load libraries

```r
library(tidyverse)
library(knitr)
library(tigris)
library(sf)
library(RColorBrewer)
```

Load in the Washington Post homicide dataset from the data subdirectory, then use the tigris package to pull geographic data (tracts) for Minnesota's Hennepin County (FIPS code 053), where Minneapolis is

```r
homicides <- read_csv("../data/homicide-data.csv", show_col_types = FALSE)

mpls_tracts <- tracts(state = "MN", county = 053, cb = TRUE)
```

Clean up data for visualization:

1. Filter to just the city of Minneapolis
2. Make a column for whether or not the homicide is unsolved
3. Use fct_lump to preserve the three race groups with the highest number of homicides and everything else becomes "Other races." This is a bit confusing as one of the top three race categories is already "Other"
4. Convert data into an sf object for plotting and set the coordinate reference system (CRS)

```r
mpls <- homicides %>%
  filter(city == "Minneapolis") %>%
  mutate(unsolved = str_detect(disposition, "Open|without"),
         unsolved = fct_recode(as.factor(unsolved),
                               Unsolved= "TRUE",
                               Solved = "FALSE")) %>%
  mutate(victim_race = fct_lump(victim_race, n = 3,
                                other_level = "All other races")) %>%
  st_as_sf(coords = c("lon", "lat")) %>%
  st_set_crs(4269)
```

```
class(mpls)
```

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

Now it's time to plot. First, we'll get the coordinates of the Minneapolis area that we actually have homicide data for rather than all of Hennepin County

```
st_bbox(mpls$geometry)
```

```
##       xmin      ymin      xmax      ymax
## -93.32071  44.89853 -93.20544  45.05119
```

Then we can make the map

```r
p <- ggplot() +
  xlim(c(-93.33, -93.21)) +
  ylim(c(44.90, 45.06)) +
  geom_sf(data = mpls_tracts, color = "lightgrey",
          fill = "white", alpha = 0.8) +
  geom_sf(data = mpls, aes(color = fct_infreq(victim_race))) +
  scale_color_brewer(palette= "Paired") +
  facet_wrap(~unsolved) +
  labs(title = "Homicides in Minneapolis, MN 2007-17", color = "Victim race") +
  theme_minimal() +
  theme(panel.grid.major = element_blank(),
        panel.grid.minor = element_blank(),
        axis.text.x = element_text(angle = 45))

p
```

Homicides in Minneapolis, MN 2007–17

Solved   Unsolved

Victim race

- Black
- Other
- White
- All other races
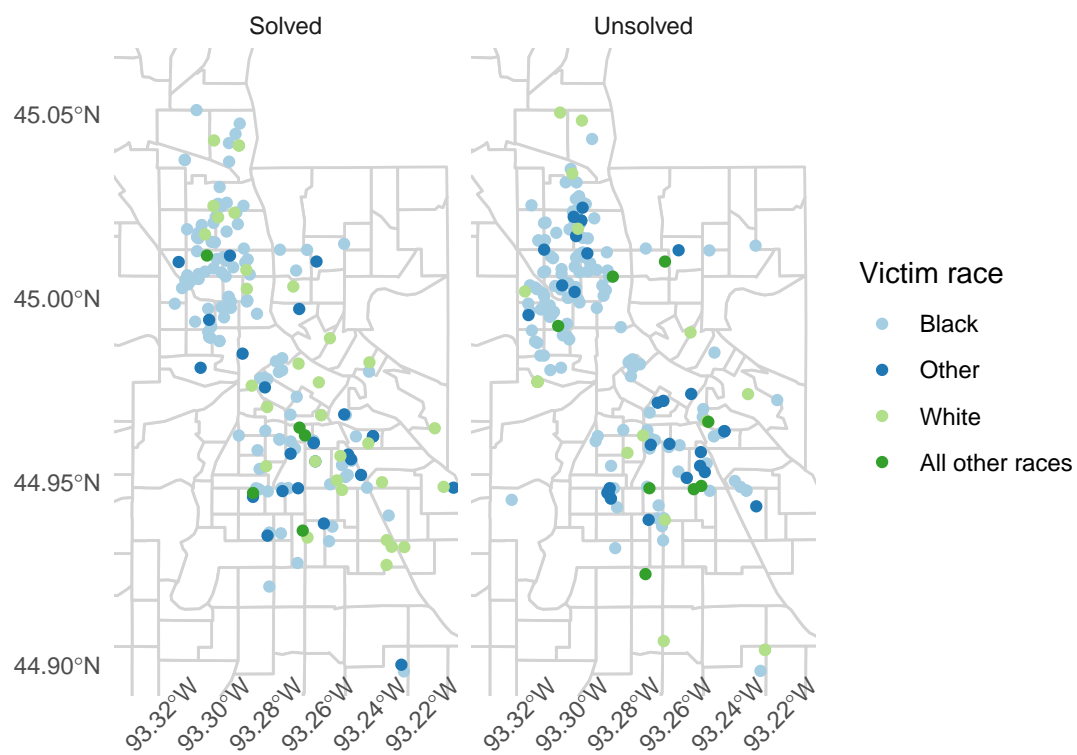
Finally, we'll save it in the figures directory

```
ggsave("Minneapolis_homicides.pdf", width = 7, height = 5, path = "../figures/")
```