ERHS 535 Homework 5

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```
knitr::opts_chunk$set(echo = TRUE, message = FALSE, warning = FALSE, error = FALSE)

# read in data
denver <- read_csv("../data/homicide-data.csv") %>%
  filter(city == "Denver") %>%
  select(lat, lon, disposition, victim_race)
```

```
## Parsed with column specification:
## cols(
##   uid = col_character(),
##   reported_date = col_double(),
##   victim_last = col_character(),
##   victim_first = col_character(),
##   victim_race = col_character(),
##   victim_age = col_character(),
##   victim_sex = col_character(),
##   city = col_character(),
##   state = col_character(),
##   lat = col_double(),
##   lon = col_double(),
##   disposition = col_character()
## )
```

```
# filter by race
denver_race <- denver %>%
  group_by(victim_race) %>%
  mutate(count = n()) %>%
  arrange(desc(count)) %>%
  ungroup() %>%
  filter(victim_race == c("Black", "White", "Hispanic"))
```

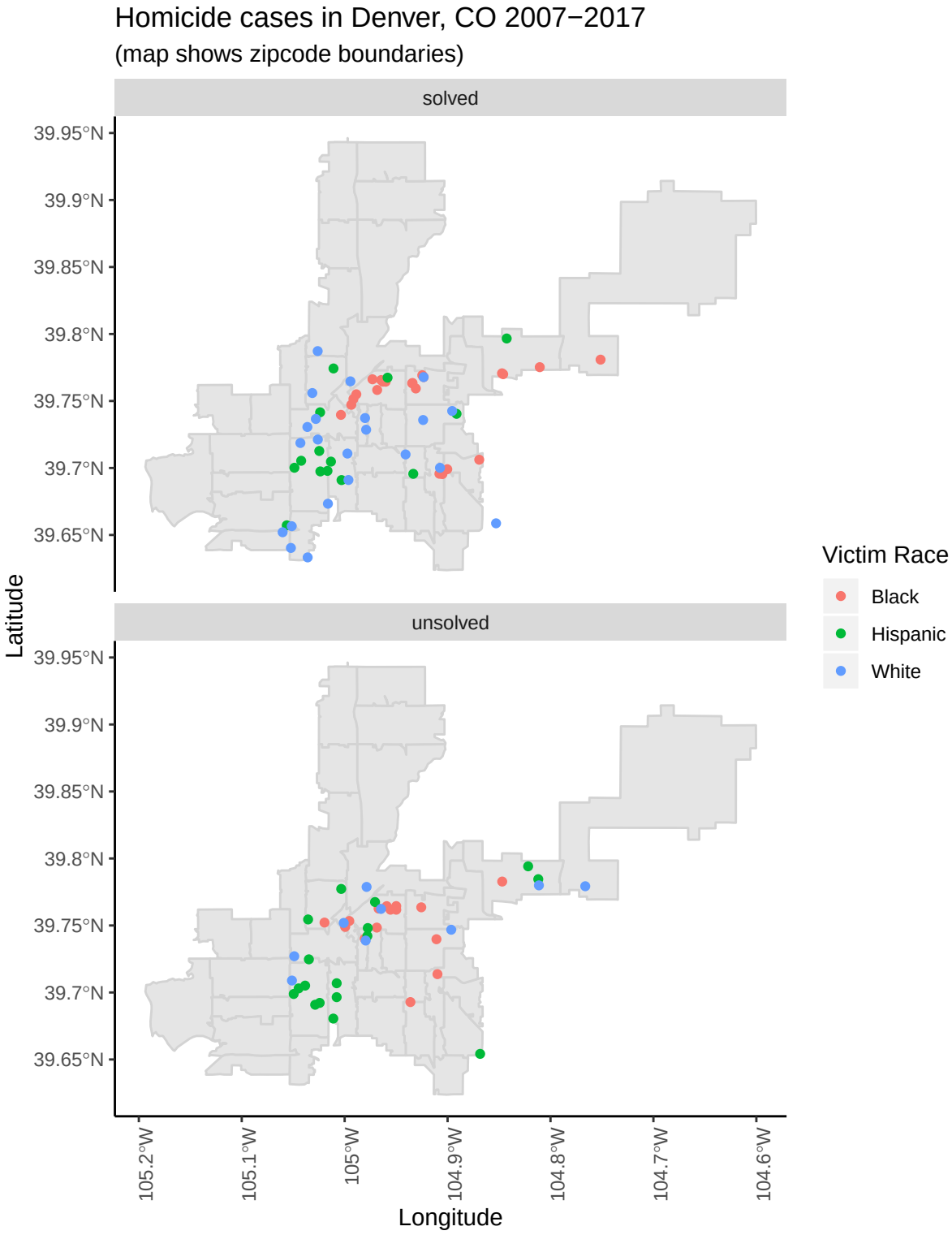
```
# create zip code map
denver_zip <- zctas(cb = TRUE, starts_with =
                      c("802"), class = "sf")
```

```
# categorize into solved and unsolved
denver_disp <- denver_race %>%
  mutate(disposition = factor(disposition, levels = c("Closed without arrest",
                                                      "Closed by arrest",
                                                      "Open/No arrest"),
                              labels = c("solved", "solved", "unsolved")))
```

```
# create dataframe of disposition status with geocode
denver_crs <- denver_disp %>%
  filter(!is.na(lat)) %>%
  st_as_sf(coords = c("lon", "lat")) %>%
  st_set_crs(4269)
```

```r
# create plot of homicides overlayed on denver map, faceted by race
zip_map <- ggplot() +
  geom_sf(data = denver_zip, color = "lightgray") +
  geom_sf(data = denver_crs, aes(color = factor(victim_race)),
          show.legend = 'point') +
  facet_wrap(~disposition, ncol =1) +
  ggtitle("Homicide cases in Denver, CO 2007-2017", subtitle = "(map shows zipcode boundaries)") +
  labs(x = "Longitude", y = "Latitude") +
  theme(axis.text.x = element_text(angle = 90, hjust = 1),
        panel.background = element_blank(),
        axis.line = element_line(colour = "black")) +
  labs(colour = "Victim Race")

zip_map
```


Homicide cases in Denver, CO 2007−2017
(map shows zipcode boundaries)
solved
unsolved
Latitude
39.95°N
39.9°N
39.85°N
39.8°N
39.75°N
39.7°N
39.65°N
105.2°W
105.1°W
105°W
104.9°W
104.8°W
104.7°W
104.6°W
Longitude
Victim Race
Black
Hispanic
White