hw_5_R

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```
library(tidyverse)
library(stringr)
library(purrr)
library(broom)
library(scales)
library(ggthemes)
library(sf)
library(tigris)
library(lubridate)
library(flexdashboard)
library(shiny)
library(jsonlite)
library(maptools)
library(leaflet)
library(plotly)
library(DT)
library(viridis)
library(rgdal)
library(tmap)
library(cowplot)

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

homicides <- homicides %>%
  unite(city_name, city, state, sep = ", ")

homicides %>%
  group_by(city_name) %>%
  summarize(total = n()) %>%
  arrange(desc(total)) %>%
  slice(-51)
```

```
## # A tibble: 50 x 2
##    city_name        total
##    <chr>            <int>
##  1 Chicago, IL       5535
##  2 Philadelphia, PA  3037
##  3 Houston, TX       2942
##  4 Baltimore, MD     2827
##  5 Detroit, MI       2519
##  6 Los Angeles, CA   2257
##  7 St. Louis, MO     1677
##  8 Dallas, TX        1567
```

```
##  9 Memphis, TN       1514
## 10 New Orleans, LA   1434
## # ... with 40 more rows
```

```
dc_homicides <- homicides %>%
  filter(city_name == "Washington, DC") %>%
  mutate(reported_date = ymd(reported_date))

dc_homicides
```

```
## # A tibble: 1,345 x 11
##    uid    reported~1 victi~2 victi~3 victi~4 victi~5 victi~6 city_~7   lat   lon
##    <chr>  <date>     <chr>   <chr>   <chr>   <chr>   <chr>   <chr>   <dbl> <dbl>
##  1 Was-0~ 2015-01-03 ROSS    RAHJI   Black   35      Male    Washin~  38.9 -77.0
##  2 Was-0~ 2015-01-08 STEWART MARVIN  Black   49      Male    Washin~  38.9 -77.0
##  3 Was-0~ 2015-01-10 CARIAS  MARTIN~ Hispan~ 21      Male    Washin~  38.9 -77.0
##  4 Was-0~ 2015-01-11 NEWMAN  ANDREW  Black   17      Male    Washin~  38.9 -77.0
##  5 Was-0~ 2015-01-11 ANDERS~ JAMES   Black   27      Male    Washin~  38.9 -77.0
##  6 Was-0~ 2015-01-14 JONES   PHILLIP Black   17      Male    Washin~  38.8 -77.0
##  7 Was-0~ 2015-01-19 OWENS   KEVIN   Black   22      Male    Washin~  38.8 -77.0
##  8 Was-0~ 2015-01-25 WILLIA~ GERALD  Black   45      Male    Washin~  38.9 -77.0
##  9 Was-0~ 2015-02-03 HOWARD  NAVONT~ Black   19      Male    Washin~  38.9 -77.0
## 10 Was-0~ 2015-02-04 JONES   TRACEY  Black   46      Male    Washin~  38.9 -77.0
## # ... with 1,335 more rows, 1 more variable: disposition <chr>, and abbreviated
## #   variable names 1: reported_date, 2: victim_last, 3: victim_first,
## #   4: victim_race, 5: victim_age, 6: victim_sex, 7: city_name
```

```
dc_districts <- state_legislative_districts(state = "DC", cb = TRUE, class = "sf")
```

```
##   |                                                                              |
```

```
unique(dc_homicides$victim_race)
```

```
## [1] "Black"    "Hispanic" "White"    "Asian"    "Other"
```

```
dc_homicides %>%
  group_by(victim_race) %>%
  summarise(total = n())
```

```
## # A tibble: 5 x 2
##   victim_race total
##   <chr>       <int>
## 1 Asian          14
## 2 Black        1217
## 3 Hispanic       65
## 4 Other           7
## 5 White          42
```

```
dc_race <- dc_homicides %>%
  mutate(unsovled = disposition == c("Closed without arrest", "Open/No arrest")) %>%
  group_by(victim_race) %>%
  arrange(desc(victim_race)) %>%
  mutate(victim_race = fct_lump(victim_race)) %>%
  filter(!victim_race == c("Other", "Asian")) %>%
  ungroup() %>%
  slice(-c(43:45),
        -c(1328:1334))
```

```
dc_race$unsovled <- as.integer(dc_race$unsovled == "true")

dc_race %>%
  group_by(victim_race) %>%
  summarise(total = n())
```

```
## # A tibble: 3 x 2
##   victim_race total
##   <fct>       <int>
## 1 Black        1217
## 2 Hispanic       65
## 3 White          42
```

```
EPSG <- make_EPSG()

dc_race_crs <- st_as_sf(dc_race, coords = c("lon", "lat")) %>%
  st_set_crs(2248)

dc_districts_crs <- st_as_sf(dc_districts, coords = c("lon", "lat")) %>%
  st_set_crs(2248)

dc_plot <- ggplot() +
  geom_sf(data = dc_districts_crs) +
  geom_sf(data = dc_race_crs, aes(color = victim_race)) +
  theme_map() +
  facet_wrap(~ disposition)

ggplot() +
  geom_sf(data = dc_districts_crs) +
  geom_sf(data = dc_race_crs, aes(color = victim_race)) +
  facet_wrap(~ disposition) +
  ggtitle("Locations of Homicides in DC by Race and Disposition") +
  theme_map() +
  guides(color = guide_legend(title = "Victim Race"))
```