

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(mapproj)
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-2022.csv")

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
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## 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>   <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))

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dc_race$unsolved <- as.integer(dc_race$unsolved == "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)

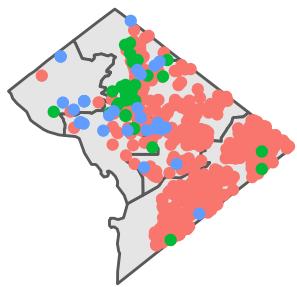
dc_plot <- ggplot() +
  geom_sf(data = dc_districts_crs) +
  geom_sf(data = dc_race_crs, aes(color = victim_race)) +
  theme_map() +
  facet_wrap(~ disposition)

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"))

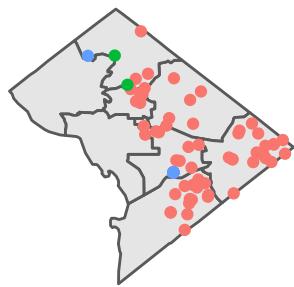
```

Locations of Homicides in DC by Race and Disposition

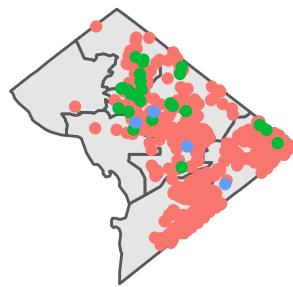
Closed by arrest



Closed without arrest



Open/No arrest



Victim Race

- Black
- Hispanic
- White