

Homework 5

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

library(tidyverse)
library(readr)
library(dplyr)
library(stringr)

# setwd("~/Google Drive (kreitnerki@utexas.edu)/PHD/Fall2021/R programming/homework/rclasseexercises")
homicide_data <- read_csv("data/homicide-data.csv")
```

Choice 1

```
library(sf)
library(tigris)
```

City Selected is Baltimore

```
homicide_data <- homicide_data %>%
  mutate(city_name = paste(city, ", ", state)) %>%
  filter(city_name == "Baltimore , MD") %>%
  mutate(disposition_new = disposition %in% c("Open/No arrest",
                                              "Closed without arrest")) %>%
  mutate(disposition_num = as.integer(disposition_new)) %>%
  group_by(victim_race)
head(homicide_data)

## # A tibble: 6 x 15
## # Groups:   victim_race [2]
##   uid      reported_date victim_last victim_first victim_race victim_age victim_sex
##   <chr>     <dbl> <chr>       <chr>       <chr>       <chr>       <chr>
## 1 Bal-001607    20070101 NELSON      LEON        Black       17        Male
## 2 Bal-001608    20070102 GOLF        EDDIE       Black       26        Male
## 3 Bal-001609    20070105 MACKENNEY   THOMAS JOSE~ Black       21        Male
## 4 Bal-001610    20070105 CANUPP      EDWARD LEE    White       61        Male
## 5 Bal-001611    20070106 CUNNINGHAM MICHAEL     Black       46        Male
## 6 Bal-001612    20070106 ALSTON      RAY WILLIAM  Black       27        Male
## # ... with 8 more variables: city <chr>, state <chr>, lat <dbl>, lon <dbl>,
## #   disposition <chr>, city_name <chr>, disposition_new <lgl>,
## #   disposition_num <int>
```

Baltimore, MD Map

```
library(ggplot2)
b_homicides <- st_as_sf(homicide_data, coords = c("lon", "lat"))%>%
  st_set_crs(4269)
b_homicides %>% slice(1:3)

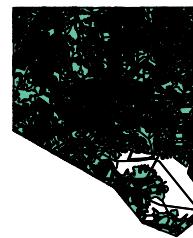
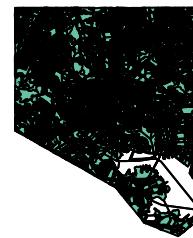
## Simple feature collection with 15 features and 13 fields
## Geometry type: POINT
## Dimension: XY
## Bounding box: xmin: -76.70946 ymin: 39.23422 xmax: -76.54241 ymax: 39.36638
## Geodetic CRS: NAD83
## # A tibble: 15 x 14
## # Groups:   victim_race [5]
##   uid      reported_date victim_last victim_first victim_race victim_age
##   <chr>     <dbl> <chr>       <chr>       <chr>       <chr>
## 1 Bal-002132 20090105 WANG        TIAN ZIN    Asian      51
## 2 Bal-002354 20091226 JONES       KINLAW      Asian      21
## 3 Bal-002680 20110628 YIM         CHONG WAN  Asian      55
## 4 Bal-001607 20070101 NELSON     LEON        Black     17
## 5 Bal-001608 20070102 GOLF       EDDIE      Black     26
## 6 Bal-001609 20070105 MACKENNEY THOMAS JOSEPH Black     21
## 7 Bal-001633 20070129 MESA        SINTIA     Hispanic   25
## 8 Bal-001676 20070330 GONZALEZ   ESTEFANY   Hispanic   16
## 9 Bal-001781 20070717 SANTIAGO  DANIEL     Hispanic   29
## 10 Bal-001734 20070605 GHULAM     MUSTAFA   Other     33
## 11 Bal-001810 20070827 KARKI      HIMANK     Other     18
## 12 Bal-001861 20071108 HUNT       LEONARD    Other     44
## 13 Bal-001610 20070105 CANUPP     EDWARD LEE  White     61
## 14 Bal-001619 20070109 STEFANSKI  MELISSA    White     23
## 15 Bal-001634 20070131 STEVENS    STEPHANIE LYNN White     22
## # ... with 8 more variables: victim_sex <chr>, city <chr>, state <chr>,
## #   disposition <chr>, city_name <chr>, disposition_new <lgl>,
## #   disposition_num <int>, geometry <POINT [°]>

library(forcats)
table(homicide_data$victim_race)

##
##   Asian    Black Hispanic    Other    White
##   11      2596      57       6      157

top_race <- homicide_data %>%
  filter(victim_race %in% c("Black", "Hispanic", "White")) %>%
  st_as_sf(coords = c("lon", "lat"))%>%
  st_set_crs(4269) %>%
  mutate(disposition_num = factor(disposition_num,
                                    levels = c(0, 1),
                                    labels = c("Unsolved", "Solved")))

md_counties <- counties(state = "MD", cb = TRUE, class = "sf")
baltimore <- md_counties %>%
  filter(NAME == "Baltimore", COUNTYFP == "510")
b_blocks <- blocks("MD", 510)
plot(b_blocks)
```

STATEFP10**COUNTYFP10****TRACTCE10****BLOCKCE10****GEOID10****NAME10****MTFCC10****UR10****UACE10****UATYPE**

```
class(md_counties)
```

```
## [1] "sf"      "data.frame"  
class(baltimore)
```

```
## [1] "sf"      "data.frame"  
  
ggplot() +  
  geom_sf(data = b_blocks) +  
  geom_sf(data = top_race, aes(color = victim_race)) +  
  labs(color = "Race of Victim") +  
  facet_grid(~ disposition_num) +  
  theme_classic() +  
  ggtitle("Homicide Events in Baltimore, Maryland")
```

Homicide Events in Baltimore, Maryland

