Homework5_RChiaverini

2022-11-25

```
library(readr)
```

```
## Warning: package 'readr' was built under R version 4.1.2
```

```
library(ggthemes)
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --

## v ggplot2 3.3.6     v dplyr   1.0.8
## v tibble  3.1.8     v stringr 1.4.1
## v tidyr   1.1.4     v forcats 0.5.2
## v purrr   0.3.4

## Warning: package 'ggplot2' was built under R version 4.1.2

## Warning: package 'tibble' was built under R version 4.1.2

## Warning: package 'dplyr' was built under R version 4.1.2

## Warning: package 'stringr' was built under R version 4.1.2

## Warning: package 'forcats' was built under R version 4.1.2

## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(lubridate)
```

```
##
## Attaching package: 'lubridate'

## The following objects are masked from 'package:base':
##
##     date, intersect, setdiff, union
```

```
library(nplyr)
```

```
## Warning: package 'nplyr' was built under R version 4.1.2
```

```
homicides <- read_csv("homicide-data.csv")
```

```
## Rows: 52179 Columns: 12
```

```
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (9): uid, victim_last, victim_first, victim_race, victim_age, victim_sex...
## dbl (3): reported_date, lat, lon
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

Making Graphs

```
#creating separate y,m,d#
homicides_baltimore <- homicides %>%
  mutate(city_name = str_c(city, state, sep = ",")) %>%
  mutate(year = str_sub(reported_date, start = 1, end = 4)) %>%
  mutate(month = str_sub(reported_date, start = 5, end = 6)) %>%
  mutate(day = str_sub(reported_date, start = 7, end = 8)) %>%
  mutate(date = str_c(year, month, day, sep = "/")) %>%
  mutate(month_year = str_c(month, year, sep = "/")) %>%
  filter(city == "Baltimore")
```

```
#making variables numeric

homicides_baltimore$year <- as.numeric(homicides_baltimore$year)
homicides_baltimore$month <- as.numeric(homicides_baltimore$month)
homicides_baltimore$day <- as.numeric(homicides_baltimore$day)
homicides_baltimore$date <- as.Date(homicides_baltimore$date)
```

```
# making year month for Y axis

library(zoo)
```

```
## Warning: package 'zoo' was built under R version 4.1.2
```

```
##
## Attaching package: 'zoo'
```

```
## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric
```

```
hom_balt <- homicides_baltimore %>%
  mutate(yearmonth = as.yearmon(date, "%m/%Y"))
```

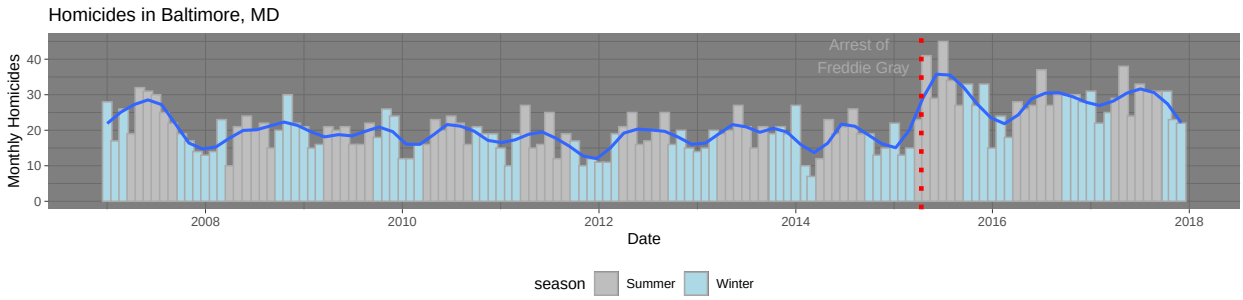
```r
hom_balt <- hom_balt %>%
  mutate(uid_new = str_sub(uid, start = 5, end = 10)) %>%
  mutate(obs = uid_new)

hom_balt <- hom_balt %>%
  mutate(season = case_when(
      month %in% 10:12 ~ "Winter",
      month %in%  1:3  ~ "Winter",
      month %in%  4:6  ~ "Summer",
      TRUE ~ "Summer"))

homicides_month <- hom_balt %>%
  select(obs, city_name, year, date, yearmonth, month, season) %>%
  group_by(yearmonth) %>%
  summarize(monthly_homicides = n(),
            city_name = city_name,
            year = year,
            date = date,
            season = season,
            .groups = 'drop')

df <- homicides_month %>%
  distinct(yearmonth, .keep_all = TRUE)
```

```r
v_line <- "2015-04-12"
```

```r
df %>%
  ggplot(aes(x = date, y = monthly_homicides)) +
  geom_bar(aes(fill = season), stat = "identity", width = 35,
           color = "darkgrey") +
  geom_smooth(se = FALSE, span = 0.1) +
  scale_fill_manual(values = c("grey","lightblue")) +
  labs(x = "Date", y = "Monthly Homicides") +
  ggtitle("Homicides in Baltimore, MD") +
  geom_vline(aes(xintercept= as.numeric(as.Date(v_line))),
             linetype=3,col="red", size =1.5) +
  annotate("text", x = df$date[93], y = 41 - 0.1,
           label = "Arrest of \n Freddie Gray", color = "darkgrey") +
  theme_dark() +
  theme(legend.position = "bottom")
```

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```

```
## Warning: position_stack requires non-overlapping x intervals
```


Homicides in Baltimore, MD
Monthly Homicides
0
10
20
30
40
2008
2010
2012
2014
2016
2018
Date
Arrest of
Freddie Gray

season
Summer
Winter