Homework 5

Erin Walls

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```
list.files("../data/")
```

```
## [1] "homicide-data.csv"
```

```
library(tidyverse)
```

```
## -- Attaching packages ----------------------------------------- tidyverse 1.2.1 --

## v ggplot2 3.1.1     v purrr   0.3.2
## v tibble  2.1.3     v dplyr   0.8.3
## v tidyr   1.0.0     v stringr 1.4.0
## v readr   1.3.1     v forcats 0.4.0

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

```
library(readr)

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

```
## 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()
## )
```

```
library(magrittr)
```

```
##
## Attaching package: 'magrittr'

## The following object is masked from 'package:purrr':
##
##     set_names
```

```
## The following object is masked from 'package:tidyr':
##
##     extract
```

```
baltimore <- homicides %>%
  filter(city == "Baltimore")
```

```
library(lubridate)
```

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

## The following object is masked from 'package:base':
##
##     date
```

```
baltimore_1 <- baltimore %>%
  mutate(reported_date = ymd(reported_date))
```

```
baltimore_2 <- baltimore_1 %>%
  group_by(date = floor_date(reported_date, "month"))

baltimore_3 <- baltimore_2 %>%
  count(date)
```

```
freddie <- baltimore_2 %>%
  filter(victim_last == "GREY")
```

```
baltimore_4 <- baltimore_1 %>%
  group_by(date = floor_date(reported_date, "month")) %>%
  mutate(month = month(date))

baltimore_4$month <- factor(baltimore_4$month)

baltimore_5 <- baltimore_4 %>%
  mutate(month = fct_collapse(month,
                              summer = c("5", "6", "7", "8", "9", "10"),
                              winter = c("1", "2", "3", "4", "11", "12"))) %>%
  count(date)

baltimore_6 <- baltimore_4 %>%
  select(date, month) %>%
  full_join(baltimore_5, by = "date") %>%
  distinct() %>%
  mutate(month = fct_collapse(month,
                              summer = c("5", "6", "7", "8", "9", "10"),
                              winter = c("1", "2", "3", "4", "11", "12")))
```

```
library(ggplot2)
library(ggthemes)
```

```
ggplot() +
  geom_col(data = baltimore_6, mapping = aes(x = date, y = n, fill = month)) +
  geom_smooth(data = baltimore_3, mapping = aes(x = date, y = n), se = FALSE,
              size = 1.2, span = 0.1) +
  geom_vline(data = freddie, mapping = aes(xintercept = date),
             linetype = "dashed", color = "red", size = 1.5) +
  geom_text(data = freddie, mapping = aes(x = date, y = 0,
            label = "Arrest of Freddie Gray"), color = "white", size = 4,
            vjust = -8.0, hjust = 1.0) +
  scale_fill_manual(" ", values = c("summer" = "seashell3",
                                    "winter" = "slategray2")) +
  theme_dark() +
  theme(legend.position = "bottom") +
  labs(title = "Homicides in Baltimore, MD", x = "Date",
       y = "Monthly homicides")
```

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