Homework 5

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```r
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
## v ggplot2 3.3.6      v purrr   0.3.5
## v tibble  3.1.8      v dplyr   1.0.10
## v tidyr   1.2.1      v stringr 1.4.1
## v readr   2.1.3      v forcats 0.5.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```r
library(ggplot2)
library(ggthemes)
library(lubridate)
```

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

```r
homicide_data <- read_csv("data/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.
```

```r
homicide_data <- homicide_data %>%
  filter(city == "Baltimore") %>%
  mutate(reported_date = ymd(reported_date),
         reported_month = month(reported_date),
         reported_year = year(reported_date),
         reported_my = my(paste(reported_month, reported_year, sep = "-")))
```

```
homicide_data <- homicide_data %>%
  mutate(season = if_else(homicide_data$reported_month %in% c(11, 12, 1, 2, 3, 4),
                          "Winter", "Summer")) %>%
  group_by(reported_year, reported_month) %>%
  mutate(n = n()) %>%
  ungroup()
```

```
homicide_data %>%
  ggplot(mapping = aes(x = reported_my)) +
  geom_bar(aes(fill = season))+
  geom_smooth(aes(y = n), se = FALSE)+
  geom_vline(xintercept = ymd(20150412), linetype = 2, color = "red", size = 1)+
  annotate("text",
           x = ymd(20140501),
           y = 40,
           label = "Arrest of \n Freddie Gray" ,
           color = "light grey")+
  ylab("Monthly Homicides")+
  xlab("Date")+
  ggtitle("Homicides in Baltimore, MD")+
  theme_dark()+
  theme(legend.position = "bottom")+
  scale_fill_manual(values = c("grey", "light blue"), name = NULL)
```

```
## 'geom_smooth()' using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```