Homework 5

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I picked **Choice 2** to recreate the graph shown in the coursebook for this homework.

As always, I'll load my libraries first.

```r
library("tidyverse")
library("readr")
library("lubridate")
library("purrr")
library("forcats")
library("stringr")
library("ggplot2")
library("scales")
library("broom")
library("ggfortify")
library("stringr")
library("ggthemes")
```

First, I'll load and clean the homicides data.

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

homicides <- homicides %>%
  mutate(city_name = paste(city, state, sep = ", "))
```

Next, I organize and tidy Baltimore data so that it can be used to recreate the graph.

```r
baltimore <- homicides %>%
  filter(city_name == "Baltimore, MD") %>%
  mutate(reported_date = as.Date(as.character(reported_date), format = "%Y%m%d"),
         day = day(reported_date),
         month = month(reported_date),
         year = year(reported_date)) %>%
  group_by(year, month) %>%
  summarize(total_homicides = n()) %>%
  mutate(month_year = as.Date(paste(year, month, "01", sep = "-"))) %>%
    mutate(season = case_when(
    month >= 5 & month <= 10 ~ "Summer",
    month >= 1 & month <=4 | month %in% 11:12 ~ "Winter"))
```

Now that my data is tidied and has the additional information we want, I'll work on recreating the graph from the coursebook.

```r
plot <- baltimore %>%
  ggplot(aes(x = month_year, y = total_homicides)) +
  geom_bar(aes(fill = season),
           stat = "identity",
```

```
            position = "dodge") +
geom_smooth(method = "loess",
            span = 0.1,
            color = "royalblue",
            se = FALSE,
            show.legend = FALSE) +
geom_vline(xintercept = as.Date("2015-04-12"),
            color = "red",
            linetype = "dashed",
            linewidth = 1) +
geom_text(aes(x = as.Date("2015-04-12"), y = 40),
            label = "Arrest of \n Freddie Gray",
            color = "lightgray",
            size = 4,
            hjust = 1.1,
            vjust = 0.5) +
labs(title = "Homicides in Baltimore, MD",
     x = "Date",
     y = "Monthly Homicides") +
scale_fill_manual(values = c("Summer" = "lightgray",
                             "Winter" = "lightblue")) +
theme_dark() +
theme(legend.position = "bottom",
      legend.title = element_blank())

print(plot)
```


Homicides in Baltimore, MD