

Homework 5

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

homicides <- homicide_data %>%
  unite(col = "city_name", c("city", "state"), sep = ", ")

baltimore <- homicides %>%
  filter(city_name == "Baltimore, MD")

head(baltimore)

## # A tibble: 6 x 11
##   uid    reported_date victim_last victim_first victim_race victim_age victim_sex
##   <chr>      <dbl> <chr>       <chr>       <chr>       <chr>
## 1 Bal--     20070101 NELSON      LEON        Black       17      Male
## 2 Bal--     20070102 GOLF        EDDIE       Black       26      Male
## 3 Bal--     20070105 MACKENNEY   THOMAS JOSE~ Black       21      Male
## 4 Bal--     20070105 CANUPP       EDWARD LEE    White       61      Male
## 5 Bal--     20070106 CUNNINGHAM  MICHAEL      Black       46      Male
## 6 Bal--     20070106 ALSTON       RAY WILLIAM  Black       27      Male
## # i 4 more variables: city_name <chr>, lat <dbl>, lon <dbl>, disposition <chr>

baltimore <- baltimore %>%
  mutate("reported_date" = ymd(reported_date)) %>%
  rename("date" = reported_date)

balt_month <- baltimore %>%
  mutate(year = year(date),
        month = month(date)) %>%
  group_by(year, month) %>%
  summarise(n = n()) %>%
  ungroup

balt_month2 <- balt_month %>%
  unite("yr_month", year, month, sep = "-") %>%
  mutate("yr_month" = ymd(paste0(yr_month, "-01"))) %>%
  mutate("month" = factor(format(yr_month, "%m"))) %>%
  mutate(season = ifelse(as.numeric(month) %in% c(11, 12, 1, 2, 3, 4), "Winter", "Summer"))

balt_month2 %>%
  ggplot(aes(x = yr_month, y = n, fill = season)) +
  geom_col() +
  geom_smooth(aes(x = yr_month, y = n, group = 1),
              inherit.aes = FALSE,
```

```

color = "blue", se = FALSE, span = 0.2) +
  labs(title = "Homicides in Baltimore, MD",
       x = "Date",
       y = "Monthly Homicides") +
  scale_fill_manual(values = c("Winter" = "lightblue",
                               "Summer" = "lightgray")) +
  geom_vline(xintercept = as.Date("2015-04-01"),
             color = "red",
             linetype = "dashed",
             size = 1) +
  annotate("text", x = as.Date("2014-04-01"),
          y = 43,
          label = "Arrest of",
          color = "lightgray") +
  annotate("text", x = as.Date("2014-04-01"),
          y = 40,
          label = "Freddie Gray",
          color = "lightgray") +
  theme(legend.position = "bottom") +
  theme_dark()

```

