Homework 5

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library(ggplot2)  
library(dplyr)

##   
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':  
##   
## filter, lag

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

library(lubridate)

##   
## Attaching package: 'lubridate'

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

library(tidyverse)

## ── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
## ✔ forcats 1.0.0 ✔ stringr 1.5.1  
## ✔ purrr 1.0.2 ✔ tibble 3.2.1  
## ✔ readr 2.1.5 ✔ tidyr 1.3.1

## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()  
## ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors

data <- read.csv("../data/homicide-data.csv")  
  
baltimore\_data <- data %>%  
 filter(city == "Baltimore") %>%  
 mutate(date = ymd(reported\_date),  
 month = month(date),  
 year = year(date))  
  
monthly\_data <- baltimore\_data %>%  
 group\_by(year = year(date), month = month(date)) %>%  
 summarize(homicides = n()) %>%  
 ungroup() %>%  
 mutate(  
 date = make\_date(year, month, 1),  
 season = ifelse(month(month) %in% c(5:10), "Summer", "Winter"))

## `summarise()` has grouped output by 'year'. You can override using the  
## `.groups` argument.

monthly\_data %>%  
 ggplot(aes(x = date, y = homicides)) +  
 geom\_bar(aes(fill= season), stat = "identity", position = "stack") +  
 scale\_fill\_manual(values = c("Summer" = "lightgray", "Winter" = "lightblue")) +   
 geom\_smooth(color = "blue", se = FALSE, size = 1, span= 0.1) +  
 labs(x = "Date", y = "Monthly Homicides", fill = NULL) +  
 ggtitle("Homicides in Baltimore, MD") +  
 geom\_vline(xintercept = as.Date("2015-04-12"), color = "red", linetype = "dashed", size = 1) +  
 annotate("text", x = as.Date("2014-11-12"), y = 40, label = "Arrest of\nFreddie Gray", color = "white") +  
 theme\_dark() +  
 theme(  
 legend.position = "bottom",  
 plot.title = element\_text(size = 16),  
 axis.title.x = element\_text(size = 14),  
 axis.title.y = element\_text(size = 14),  
 axis.text = element\_text(size = 12)  
 )

## Warning: Using `size` aesthetic for lines was deprecated in ggplot2 3.4.0.  
## ℹ Please use `linewidth` instead.  
## This warning is displayed once every 8 hours.  
## Call `lifecycle::last\_lifecycle\_warnings()` to see where this warning was  
## generated.

## `geom\_smooth()` using method = 'loess' and formula = 'y ~ x'

