Hw\_5

Prothila

11/30/2022

library(readr)  
library(tidyverse)

## ── Attaching packages ─────────────────────────────────────── tidyverse 1.3.2 ──✔ ggplot2 3.3.6 ✔ dplyr 1.0.9  
## ✔ tibble 3.1.8 ✔ stringr 1.4.1  
## ✔ tidyr 1.2.1 ✔ forcats 0.5.2  
## ✔ purrr 0.3.4 ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()

library(knitr)  
homicide <- read.csv('../data/homicide-data.csv') %>%   
 mutate(city\_name = paste(city,state, sep = ","))   
head(homicide)

## uid reported\_date victim\_last victim\_first victim\_race victim\_age  
## 1 Alb-000001 20100504 GARCIA JUAN Hispanic 78  
## 2 Alb-000002 20100216 MONTOYA CAMERON Hispanic 17  
## 3 Alb-000003 20100601 SATTERFIELD VIVIANA White 15  
## 4 Alb-000004 20100101 MENDIOLA CARLOS Hispanic 32  
## 5 Alb-000005 20100102 MULA VIVIAN White 72  
## 6 Alb-000006 20100126 BOOK GERALDINE White 91  
## victim\_sex city state lat lon disposition  
## 1 Male Albuquerque NM 35.09579 -106.5386 Closed without arrest  
## 2 Male Albuquerque NM 35.05681 -106.7153 Closed by arrest  
## 3 Female Albuquerque NM 35.08609 -106.6956 Closed without arrest  
## 4 Male Albuquerque NM 35.07849 -106.5561 Closed by arrest  
## 5 Female Albuquerque NM 35.13036 -106.5810 Closed without arrest  
## 6 Female Albuquerque NM 35.15111 -106.5378 Open/No arrest  
## city\_name  
## 1 Albuquerque,NM  
## 2 Albuquerque,NM  
## 3 Albuquerque,NM  
## 4 Albuquerque,NM  
## 5 Albuquerque,NM  
## 6 Albuquerque,NM

Arrest\_of\_Grey<- homicide %>%   
 filter(victim\_last == "GREY", city =="Baltimore")

library(lubridate)

##   
## Attaching package: 'lubridate'

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

Baltimore <- homicide %>%   
 mutate(reported\_date = ymd(reported\_date)) %>%   
 filter(city\_name == 'Baltimore,MD') %>%   
 group\_by(date = floor\_date(reported\_date, 'month')) %>%   
 summarize(homicide = n())

## Warning: 2 failed to parse.

head(Baltimore)

## # A tibble: 6 × 2  
## date homicide  
## <date> <int>  
## 1 2007-01-01 28  
## 2 2007-02-01 17  
## 3 2007-03-01 26  
## 4 2007-04-01 19  
## 5 2007-05-01 32  
## 6 2007-06-01 31

Baltimore$month <- format (as.Date(Baltimore$date, format = "%y/%m/%d"), "%m")  
Baltimore$month <- as.numeric(Baltimore$month)  
Baltimore <- Baltimore %>%   
 mutate(season = case\_when(month >=5 & month <=10 ~'Summer',  
 month <5 ~ 'Winter',  
 month >10 ~'Winter'))  
head(Baltimore)

## # A tibble: 6 × 4  
## date homicide month season  
## <date> <int> <dbl> <chr>   
## 1 2007-01-01 28 1 Winter  
## 2 2007-02-01 17 2 Winter  
## 3 2007-03-01 26 3 Winter  
## 4 2007-04-01 19 4 Winter  
## 5 2007-05-01 32 5 Summer  
## 6 2007-06-01 31 6 Summer

library(ggplot2)  
library(ggthemes)  
Baltimore %>%   
 ggplot()+  
 geom\_bar(aes(x= date, weight = homicide, fill= season))+  
 geom\_smooth(aes(x= date, y = homicide), color= 'blue', se=FALSE, size =1, span =0.1) +  
 scale\_fill\_manual(values = c('Summer'= 'azure3', 'Winter' = 'lightblue')) +  
 geom\_vline (xintercept = as.numeric(as.Date('2015-04-30')), linetype= 'longdash', col= 'red') +   
 annotate("text", x= as.Date('2015-04-30'), y = 45,   
 label = "Arrest of \n Freddie Grey", color ='azure3', hjust = 1, size = 4) +  
 ggtitle("Homicides in Baltimore, MD") +  
 xlab('Date') +  
 ylab('Monthly homicides') +  
 theme\_dark() +  
 theme(legend.position = 'bottom')

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

