Crimes - EDA

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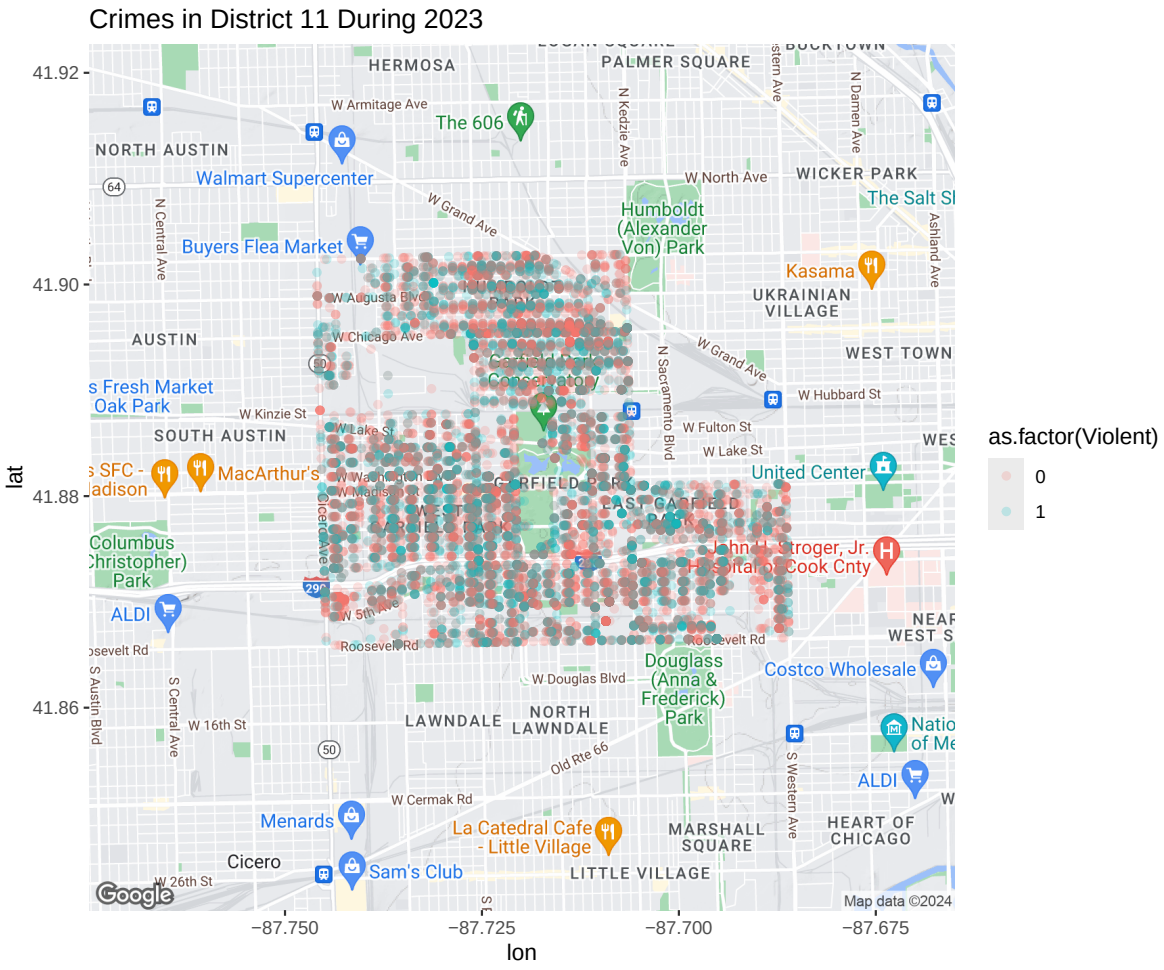
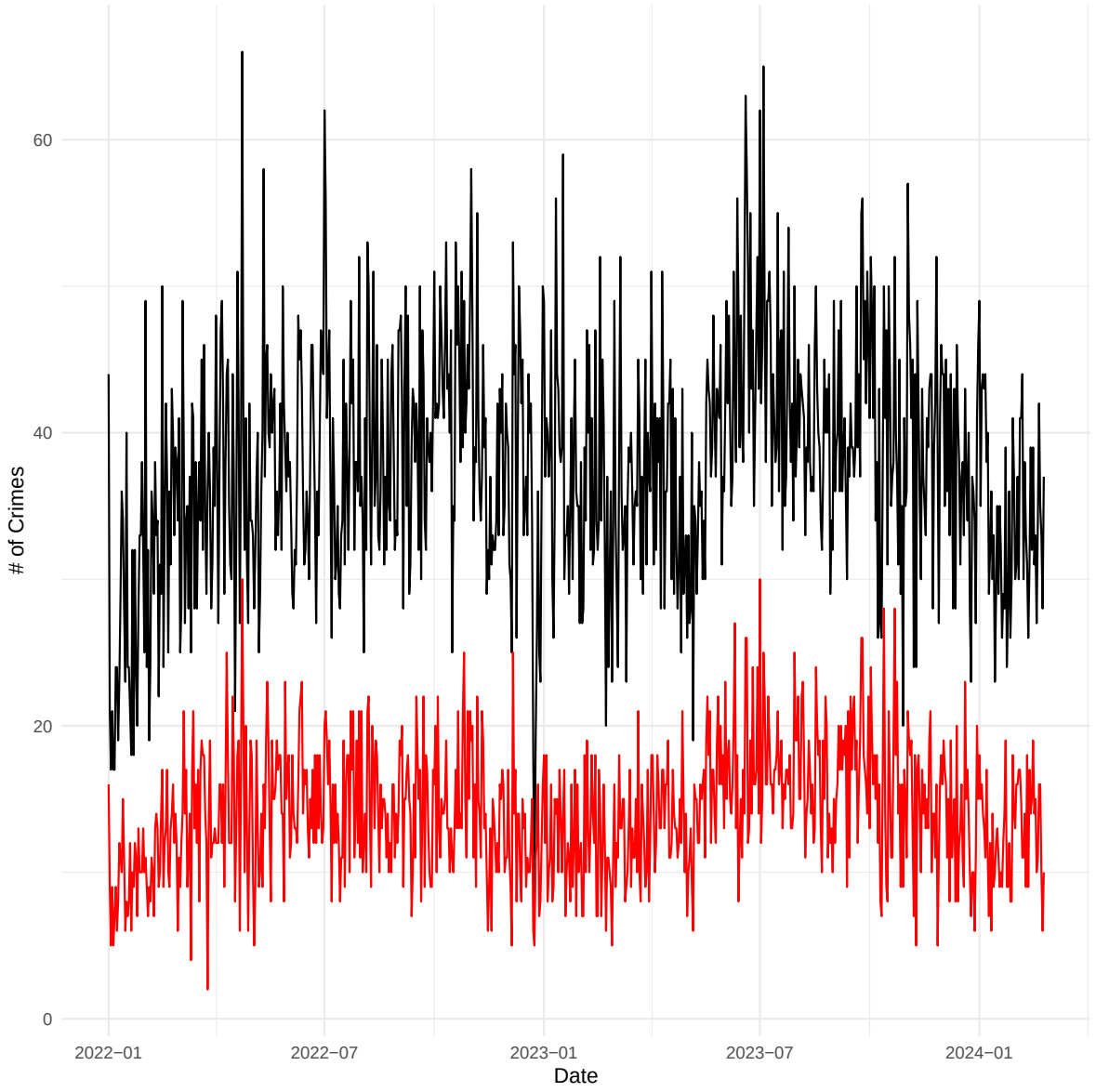
```
crimes$Date <- mdy_hms(crimes$Date)
crimes$Day <- as.Date(crimes$Date)
crimes$Day <- as.Date(crimes$Date)

#In the FBI's Uniform Crime Reporting (UCR) Program, violent crime is composed
#of four offenses: murder and nonnegligent manslaughter, forcible rape,
#robbery, and aggravated assault.

allcrimes = sort(crimes$`Primary Type`) %>% unique()
violence.key <- c(0,1,1,1,0,1,0,1,0,0,0,1,1,0,0,1,0,0,0,0,
                  0,0,0,0,0,0,0,0,0,0,1,0,0,0,0)
mapping <- setNames(seq_along(unique(allcrimes)), unique(allcrimes))
crimes$Violent <- violence.key[unname(mapping[crimes$`Primary Type`])]

register_google(key=maps.api.key)
chicago_map <- get_map(location = c(lon=-87.72, lat = 41.881832),
                       zoom = 13)

ggmap(chicago_map) +
  geom_point(data = filter(crimes, Year==2023),
             aes(x = Longitude, y = Latitude, color=as.factor(Violent)),
             alpha=0.2) +
  labs(title = "Crimes in District 11 During 2023")
```




```
marginal_crimes <- function(df, year=2023){
  df %>% filter(Year %in% year) %>%
    group_by(Day) %>% summarize(
    n_crimes = n(),
    violent_crimes = sum(Violent)
  ) %>%
    ggplot()+
```

```
    geom_line(aes(x=Day, y=n_crimes))+
    geom_line(aes(x=Day, y=violent_crimes), color="red")+
    labs(
      x="Date",
      y="# of Crimes"
    )+
    theme_minimal()
}
marginal_crimes(crimes, year=2022:2024)
```


60
40
20
0
# of Crimes
2022−01
2022−07
2023−01
2023−07
2024−01
Date