Viz2: Shashwat Singh

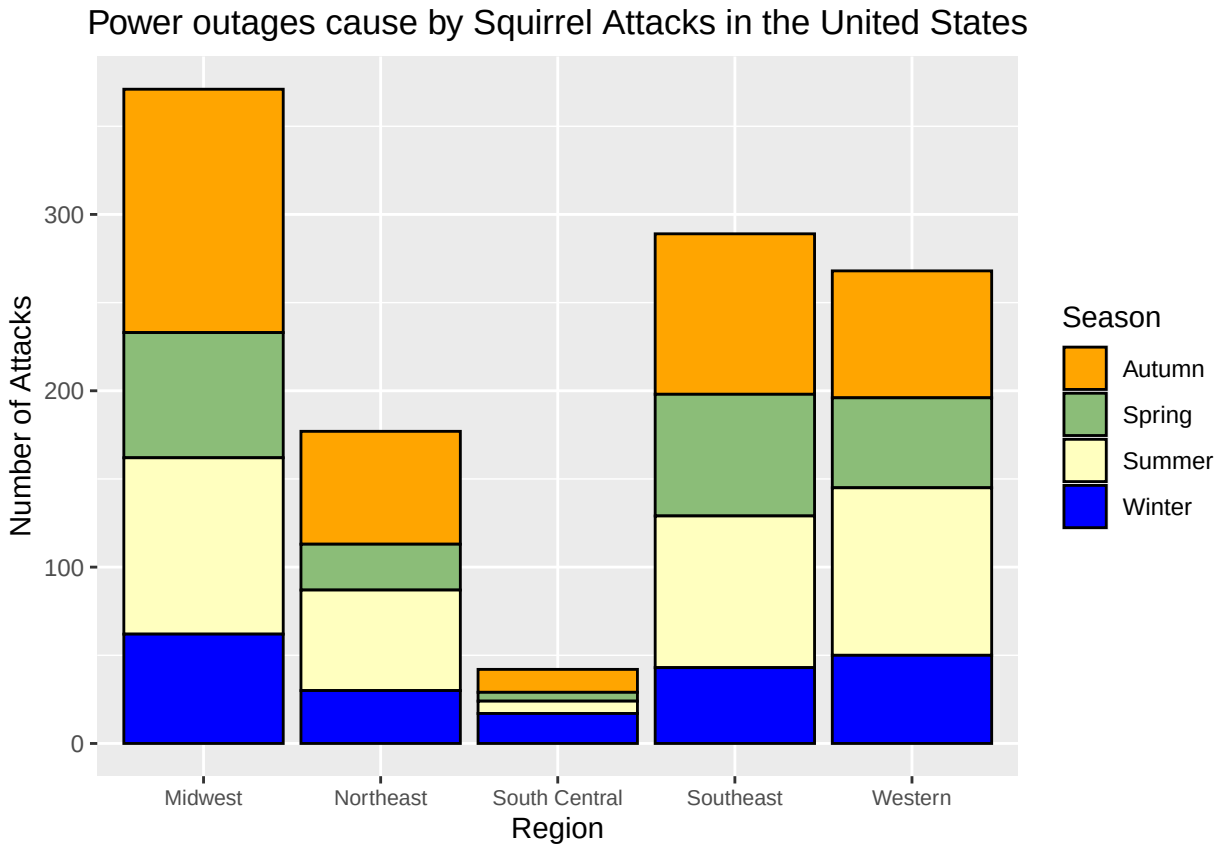

Figure 1. The above graphic shows the number of squirrel attacks in the United States which caused a power outage. Data was cleaned and grouped, the "date" given were translated to seasons based on the month. The states were mapped to corresponding regions in the United States.

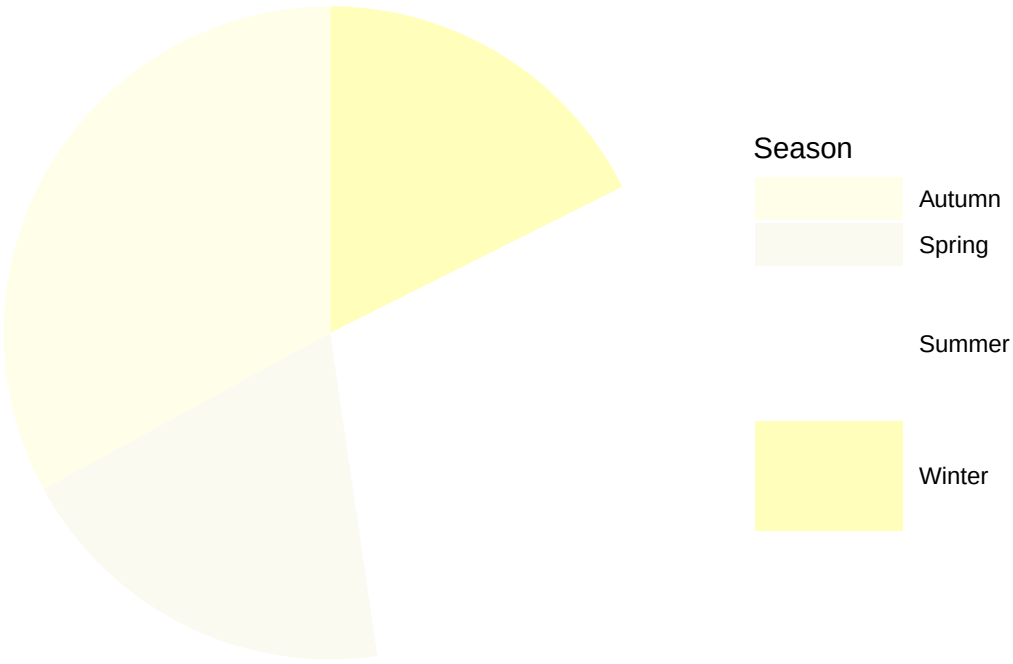

Figure2. it istrying to show why, how and why squirrels attack in United States?

Code Used To Make These Plots

Below are the code chunks used to make these plots. Use **install.packages()** to install any missing packages before you run.

```
library(ggplot2)
library(dplyr)
library(lubridate)
#Reading File
squirrels<-read.csv("CyberSquirrel-map_data.csv")

#Filtering for squirrels in the United States
squirrels<- squirrels %>%
  filter(Operative=="Squirrel", Country=="United States")


#Mapped the States to the corresponding regions as
#Midwest: NE, KS, IN, OH, IA, IL, MO, WI, MI, MN, SD, ND
#Southeast: SC, ME, MA, VA, TN, LA, AL, MS, FL, KY, NC, GA
#Western: CA, CO, TX, WA, MT, ID, OR, WY, UT, AZ, AK, NV
#Northeast: NY, NJ, VT, PA, MD, NH, CT, RI, DE, DC
#South Central: OK, AR, NM

state_region_mapping <- data.frame(
  State.Provence = c("NE", "KS", "IN", "OH",
                     "IA", "IL", "MO", "WI",
                     "MI", "MN", "SD", "ND",
                     "SC", "ME", "MA", "VA",
                     "TN", "LA", "AL", "MS",
                     "FL", "KY", "NC", "GA",
                     "CA", "CO", "TX", "WA",
                     "MT", "ID", "OR", "WY",
                     "UT", "AZ", "AK", "NV",
                     "NY", "NJ", "VT", "PA",
                     "MD", "NH", "CT", "RI",
                     "DE", "DC", "OK", "AR", "NM"),



  Region = c("Midwest", "Midwest", "Midwest", "Midwest",
             "Midwest", "Midwest", "Midwest", "Midwest",
             "Midwest", "Midwest", "Midwest", "Midwest",
             "Southeast", "Southeast", "Southeast", "Southeast",
           "Southeast", "Southeast", "Southeast","Southeast","Southeast",
           "Southeast", "Southeast", "Southeast",
             "Western", "Western", "Western", "Western",
           "Western", "Western", "Western", "Western",
             "Western", "Western", "Western", "Western",
           "Northeast", "Northeast", "Northeast", "Northeast",
             "Northeast", "Northeast", "Northeast", "Northeast","Northeast", "Northeast",
           "South Central", "South Central",
           "South Central")
)
```

```r
#Joining the Region column on squirrels dataset
squirrels <- squirrels %>%
  left_join(state_region_mapping, by = "State.Provence")

#Removed any unmapped regions due to ambiguity in the statecode
squirrels<- squirrels %>%
  filter(!is.na(Region))


# Extracting month from date
squirrels <- squirrels %>%
  mutate(Date = as.Date(Date, format = "%m/%d/%Y"),
         Month = month(Date))

# Create the "Season" column based on the month
#Spring - March to May.
#Summer - June to August.
#Autumn - September to November.
#Winter - December to February.

squirrels <- squirrels %>%
  mutate(Season = ifelse(Month %in% 3:5, "Spring",
                         ifelse(Month %in% 6:8, "Summer",
                                ifelse(Month %in% 9:11, "Autumn", "Winter"))))
```

```r
ggplot(squirrels, aes(x = Region, fill = Season)) +
  geom_bar(col="black"
           #,position="fill"
           ) +
  labs(
    title = "Power outages cause by Squirrel Attacks in the United States",
    x = "Region",
    y = "Number of Attacks"
  ) +
  scale_fill_manual(values = c("Spring" = "#8bbd78",
                               "Summer" = "#FFFFBF",
                               "Autumn" = "orange",
                               "Winter" = "blue")) +
  theme(axis.text.x = element_text(size = 8),
        plot.title = element_text(hjust = 0.5))
```

```r
ggplot(squirrels, aes(x = "", fill = Season)) +
  geom_bar(width = 1) +
  labs(
    title = "Squezrrel Attacks bye Seson
    and Region showing percent disturbution
    of seasons change.",
    fill = "Season"
  ) +
  coord_polar("y") +
  theme_void() +
  scale_fill_manual(
    values = c("Spring" = "#FBFAF0", "Summer" = "white",
```

```
              "Autumn" = "#FFFFE9", "Winter" = "#FFFFBB"),
    guide = guide_legend(
      override.aes = list(size = c(1, 1, 20, 15))
    )
  ) +
  theme(plot.title = element_text(hjust = 2, size=4))
```