

VUStats Data Exploration

```
#Load the data
```

```
library(readr)
Visitation_by_Month <- read_csv("./Visitation_by_Month.csv")
```

```
## Rows: 43 Columns: 13
```

```
## -- Column specification -----
## Delimiter: ","
## dbl (1): Year
```

```
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

```
getwd()
```

```
## [1] "C:/Users/gabri/OneDrive/Desktop/MPP Coursework/Spring 2022/ENVIRO 872/AntonovaLiu_ENV872_EDA_Fi
```

```
View(Visitation_by_Month)
```

```
#Pivot Longer to create a tidy dataset
```

```
library(tidyverse)
```

```
## -- Attaching packages ----- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5    v dplyr   1.0.7
## v tibble  3.1.6    v stringr 1.4.0
## v tidyr   1.1.4    v forcats 0.5.1
## v purrr   0.3.4
```

```
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
```

```
# Gather nutrient data into one column using pivot_longer
```

```
Visitation_by_month_gathered <- Visitation_by_Month %>%
  pivot_longer(JAN:DEC, names_to = "Month", values_to = "Recreational_Visits")
```

```
#Create a date column
```

```
library(lubridate)
```

```
##
## Attaching package: 'lubridate'

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

paste(Visitation_by_month_gathered$Year, Visitation_by_month_gathered$Month, sep="-")

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## [436] "1985-APR-1" "1985-MAY-1" "1985-JUN-1" "1985-JUL-1" "1985-AUG-1"
## [441] "1985-SEP-1" "1985-OCT-1" "1985-NOV-1" "1985-DEC-1" "1984-JAN-1"
## [446] "1984-FEB-1" "1984-MAR-1" "1984-APR-1" "1984-MAY-1" "1984-JUN-1"
## [451] "1984-JUL-1" "1984-AUG-1" "1984-SEP-1" "1984-OCT-1" "1984-NOV-1"
## [456] "1984-DEC-1" "1983-JAN-1" "1983-FEB-1" "1983-MAR-1" "1983-APR-1"
## [461] "1983-MAY-1" "1983-JUN-1" "1983-JUL-1" "1983-AUG-1" "1983-SEP-1"
## [466] "1983-OCT-1" "1983-NOV-1" "1983-DEC-1" "1982-JAN-1" "1982-FEB-1"
## [471] "1982-MAR-1" "1982-APR-1" "1982-MAY-1" "1982-JUN-1" "1982-JUL-1"
## [476] "1982-AUG-1" "1982-SEP-1" "1982-OCT-1" "1982-NOV-1" "1982-DEC-1"
## [481] "1981-JAN-1" "1981-FEB-1" "1981-MAR-1" "1981-APR-1" "1981-MAY-1"
## [486] "1981-JUN-1" "1981-JUL-1" "1981-AUG-1" "1981-SEP-1" "1981-OCT-1"
## [491] "1981-NOV-1" "1981-DEC-1" "1980-JAN-1" "1980-FEB-1" "1980-MAR-1"
## [496] "1980-APR-1" "1980-MAY-1" "1980-JUN-1" "1980-JUL-1" "1980-AUG-1"
## [501] "1980-SEP-1" "1980-OCT-1" "1980-NOV-1" "1980-DEC-1" "1979-JAN-1"
## [506] "1979-FEB-1" "1979-MAR-1" "1979-APR-1" "1979-MAY-1" "1979-JUN-1"
## [511] "1979-JUL-1" "1979-AUG-1" "1979-SEP-1" "1979-OCT-1" "1979-NOV-1"
## [516] "1979-DEC-1"
```

```
Visitation_by_month_gathered$Date <- ymd( paste(Visitation_by_month_gathered$Year, Visitation_by_month_gathered$Month, Visitation_by_month_gathered$Day, sep="-") )
head(Visitation_by_month_gathered)
```

```
## # A tibble: 6 x 4
##   Year Month Recreational_Visits Date
##   <dbl> <chr>          <dbl> <date>
## 1  2021 JAN              67284 2021-01-01
## 2  2021 FEB             128222 2021-02-01
## 3  2021 MAR             159906 2021-03-01
## 4  2021 APR             257158 2021-04-01
## 5  2021 MAY             348006 2021-05-01
## 6  2021 JUN             429980 2021-06-01
```

```
Visitation_by_month_gathered <- filter(Visitation_by_month_gathered, Year > 1998 & Year < 2020 )
```

```
library(ggplot2)
head(Visitation_by_month_gathered)
```

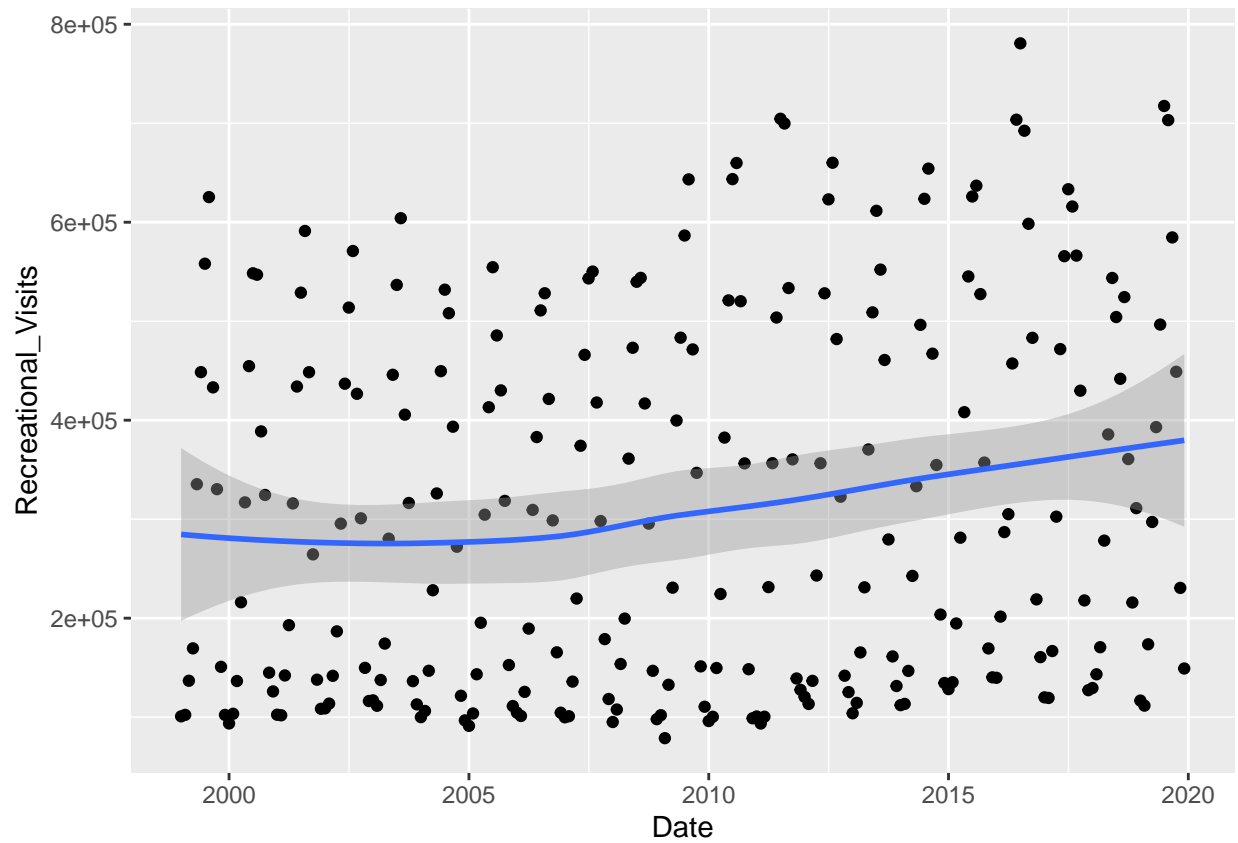
```
## # A tibble: 6 x 4
##   Year Month Recreational_Visits Date
##   <dbl> <chr>          <dbl> <date>
## 1  2019 JAN             116746 2019-01-01
## 2  2019 FEB             111665 2019-02-01
## 3  2019 MAR             173610 2019-03-01
## 4  2019 APR             297207 2019-04-01
## 5  2019 MAY             393004 2019-05-01
## 6  2019 JUN             496625 2019-06-01
```

```
summary(Visitation_by_month_gathered$Recreational_Visits)
```

```
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   78795 136646  291251  312429  471609  780728
```

```
Visitation_by_month_plot <- ggplot(Visitation_by_month_gathered, aes(x = Date, y = Recreational_Visits))
  geom_point()+
  geom_smooth()
print(Visitation_by_month_plot)
```

```
## 'geom_smooth()' using method = 'loess' and formula 'y ~ x'
```



```
visitation_by_month_plot2 <- ggplot(Visitation_by_month_gathered, aes(x = Month, y = Recreational_Visits)) +
  geom_line() +
  geom_point() +
  labs(x="Month", colour="Year", y = "Recreational Visits")
print(visitation_by_month_plot2)
```

