Graphic_Exploration

Packages

```
library(tidyverse)
```

```
## -- Attaching packages -------------------------------------- tidyverse 1.3.0 --
```

```
## v ggplot2 3.3.3     v purrr   0.3.4
## v tibble  3.0.6     v dplyr   1.0.4
## v tidyr   1.1.2     v stringr 1.4.0
## v readr   1.4.0     v forcats 0.5.1
```

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

```
library(dplyr)
library(ggplot2)
library(GGally)
```

```
## Registered S3 method overwritten by 'GGally':
##   method from
##   +.gg   ggplot2
```
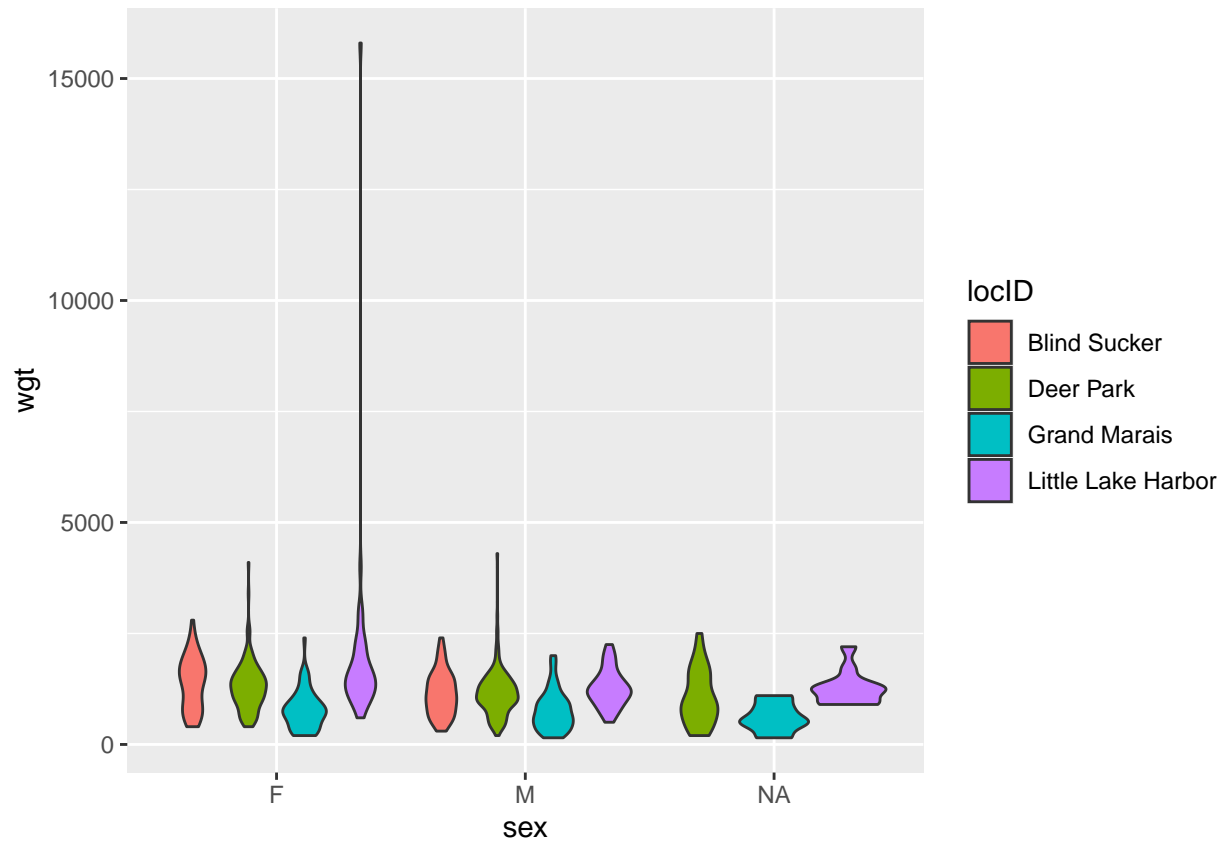
Data

```
setwd("~/Desktop/WinQ_2021/Fish497/Assignment-5")
fish_data <- read.csv("data/siscowet.csv")
reduced_fish_data <- select(fish_data,locID, len, wgt)
```

Figures

Violin Plot of Sex vs Weight (exploratory)

```
p = ggplot(fish_data, aes( x = sex, y = wgt, fill = locID))
p + geom_violin()
```
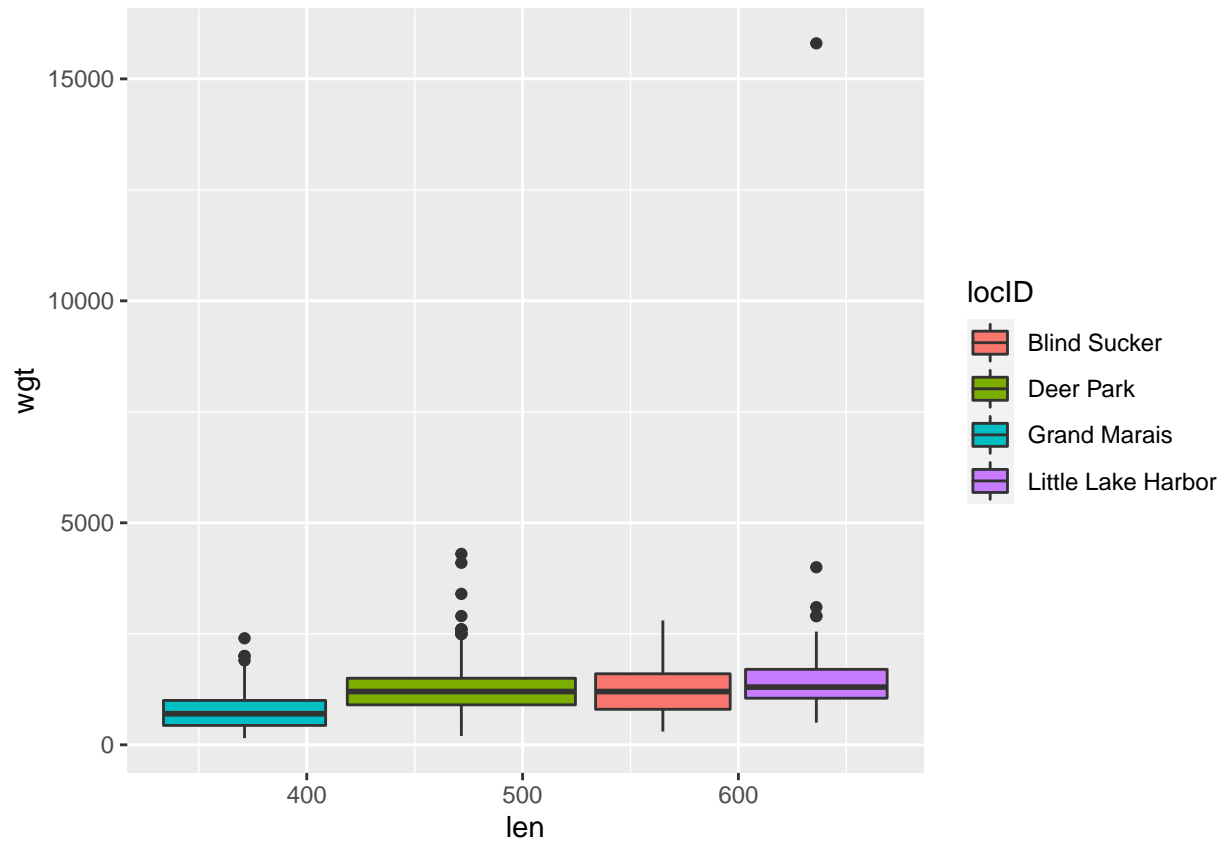
Box Plot of Length vs Weight (exploratory)

```
p = ggplot(fish_data, aes( x = len, y = wgt, fill = locID))
p + geom_boxplot()
```
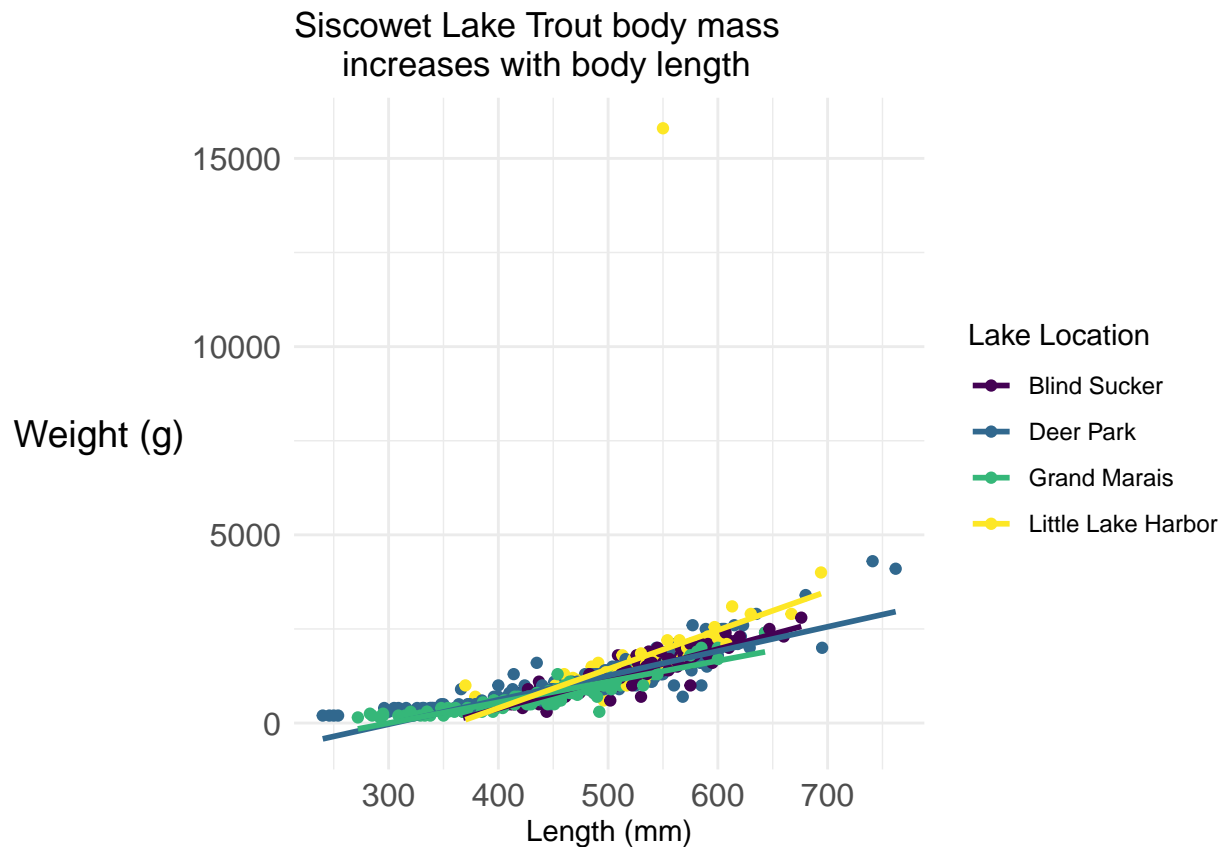
Length vs Weight (expository)

```
ggplot(fish_data, aes(x=len,
           y=wgt,
           color=locID)) +
       geom_point()+
       ylab("Weight (g)") +
       xlab("Length (mm)") +
labs(color="Lake Location",
         title = "Siscowet Lake Trout body mass
     increases with body length")+
         scale_color_viridis_d()+
         theme_minimal() +
  theme(axis.title.y = element_text(angle = 0, vjust = 0.5,size=14),
             axis.text = element_text(size=12)) +
         geom_smooth(method = "lm", se = FALSE)
```

```
## `geom_smooth()` using formula 'y ~ x'
```

```
## Warning: Removed 1 rows containing non-finite values (stat_smooth).
```

```
## Warning: Removed 1 rows containing missing values (geom_point).
```

Siscowet Lake Trout body mass increases with body length

Length vs Weight Subplots (expository)

```r
ggplot(fish_data, aes(x=len,
          y=wgt,
          color=locID)) +
      geom_point()+
      ylab("Weight (g)") +
      xlab("Length (mm)") +
  facet_wrap("locID")+
labs(color="Lake Location",
        title = "Siscowet Lake Trout body mass
    increases with body length")+
        scale_color_viridis_d()+
      theme_minimal() +
  theme(axis.title.y = element_text(angle = 0, vjust = 0.5,size=14),
          axis.text = element_text(size=12)) +
        geom_smooth(method = "lm", se = FALSE)
```

```
## `geom_smooth()` using formula 'y ~ x'

## Warning: Removed 1 rows containing non-finite values (stat_smooth).

## Warning: Removed 1 rows containing missing values (geom_point).
```

Siscowet Lake Trout body mass increases with body length