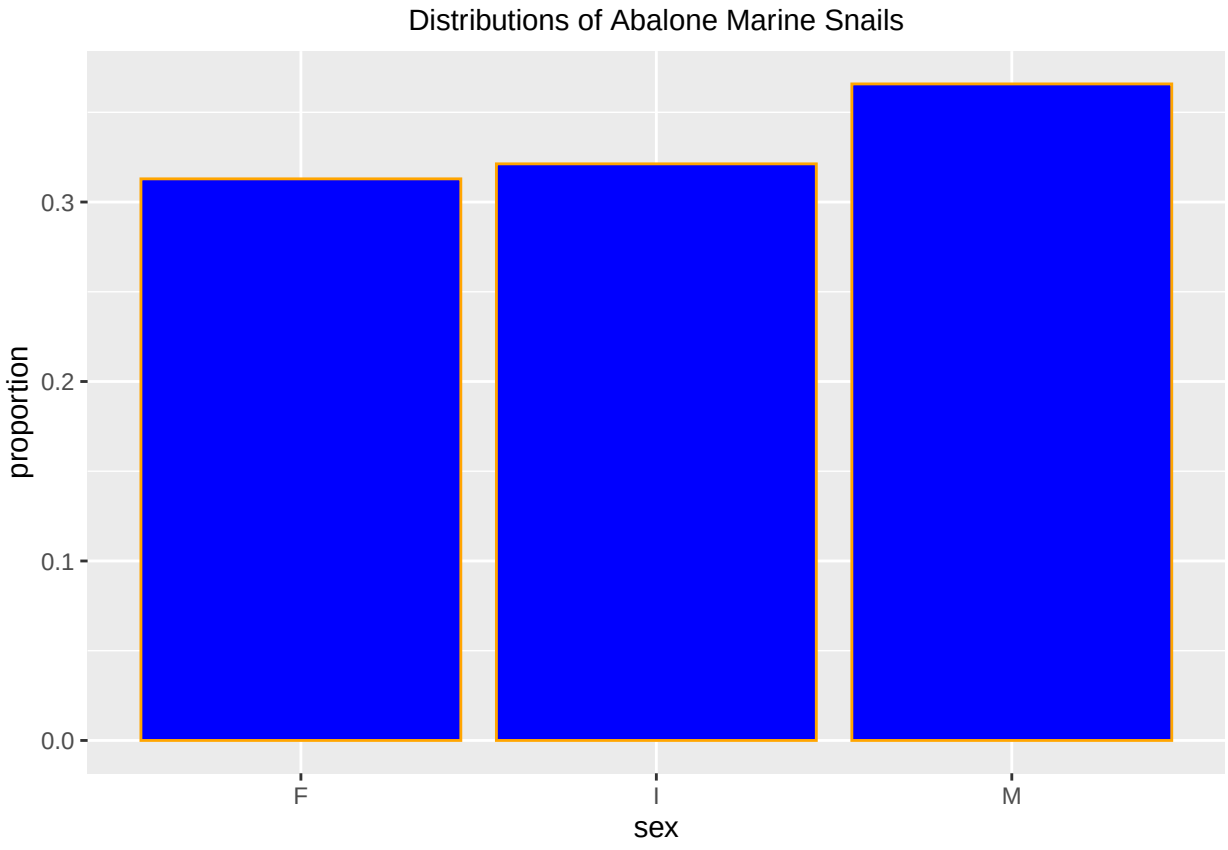
Bar, Box, and Violin Plots and Histogram

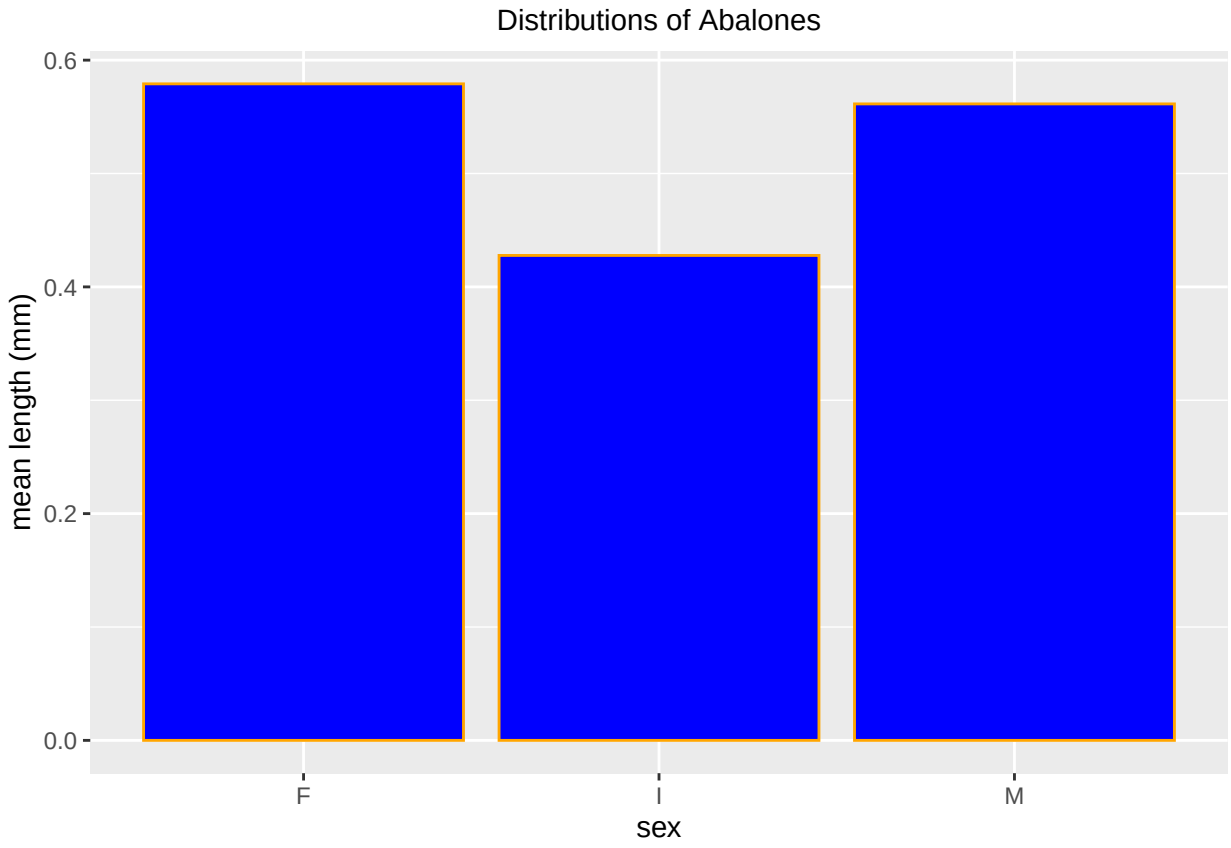
Tom Lever

11/13/22

```
library(dplyr)
library(ggplot2)
data_set <- read.csv('Data_Set--Abalones--With_Column_Names.csv', header = TRUE)
sex_and_proportion <-
    data_set %>% select(sex) %>%
    group_by(sex) %>%
    summarize(count = n()) %>%
    mutate(proportion = count / nrow(data_set))
ggplot(sex_and_proportion, aes(x = sex, y = proportion)) +
    geom_bar(stat = "identity", fill = "Blue", color = "Orange") +
    labs(title = "Distributions of Abalone Marine Snails") +
    theme(
        plot.title = element_text(hjust = 0.5, size = 11),
        axis.text.x = element_text(angle = 0)
    )
```

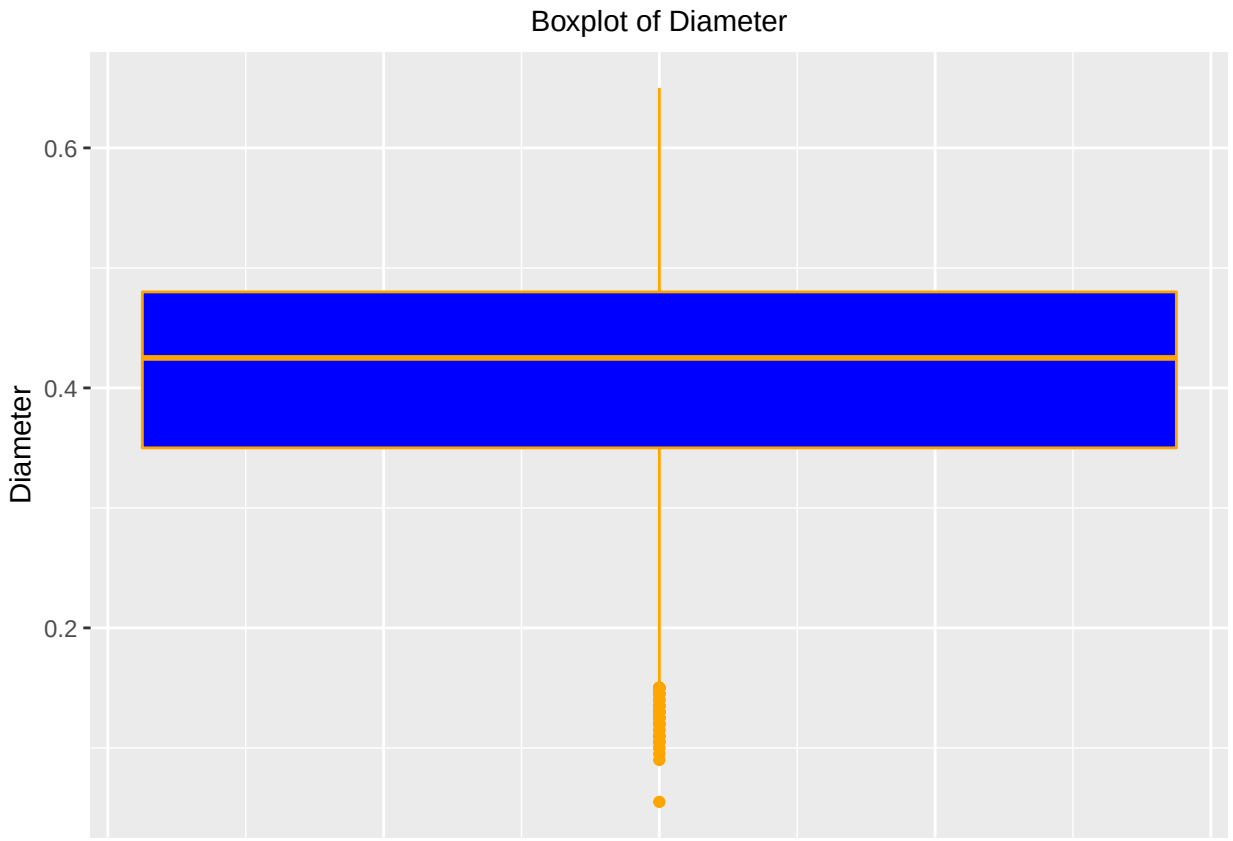


```
sex_and_mean_length <-
    data_set %>%
    select(sex, length) %>%
    group_by(sex) %>%
    summarize(mean_length = mean(length))
ggplot(sex_and_mean_length, aes(x = sex, y = mean_length)) +
    geom_bar(stat = "identity", fill = "Blue", color = "Orange") +
    labs(
        title = "Distributions of Abalones",
        y = "mean length (mm)"
    ) +
    theme(
        plot.title = element_text(hjust = 0.5, size = 11),
        axis.text.x = element_text(angle = 0)
    )
```

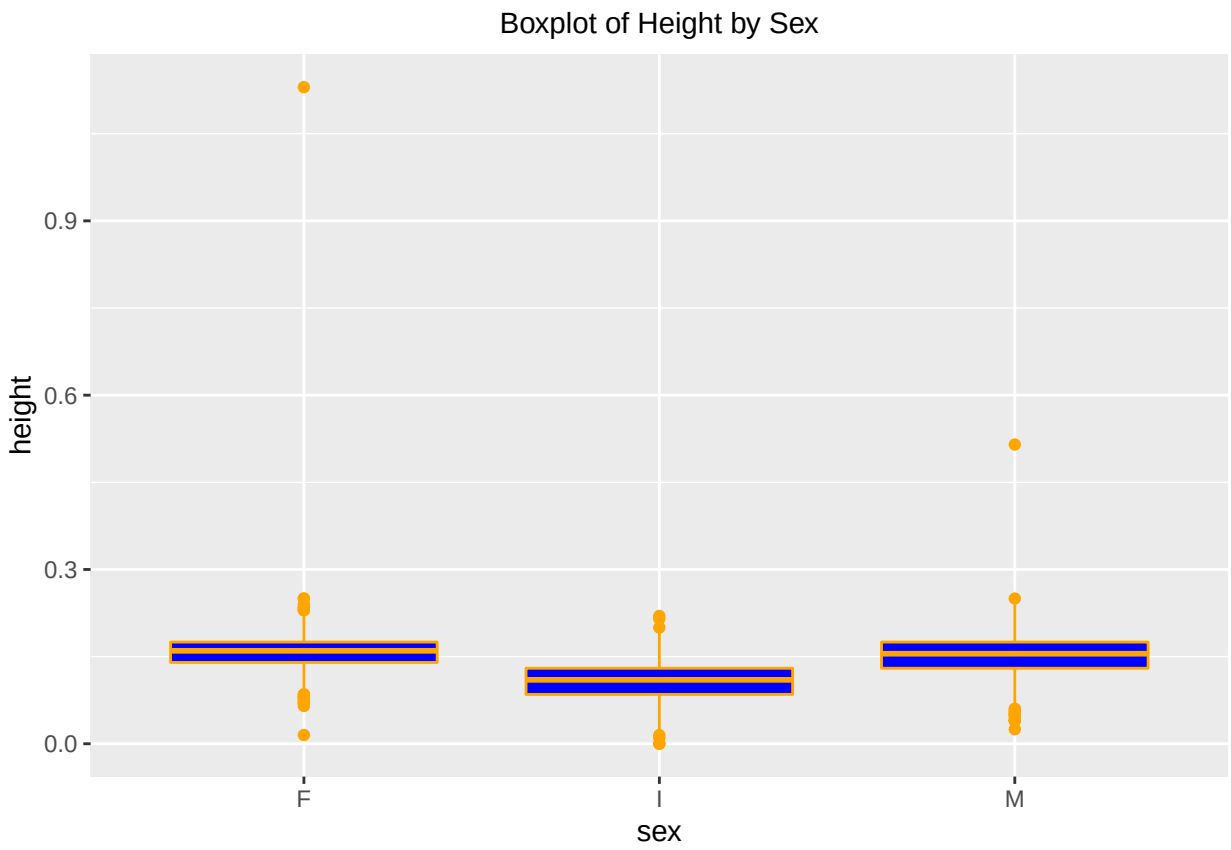



```
ggplot(data_set, aes(y = diameter)) +
    geom_boxplot(fill = "Blue", color = "Orange") +
    labs(
        y = "Diameter",
        title = "Boxplot of Diameter"
    ) +
    theme(
        plot.title = element_text(hjust = 0.5, size = 11),
        axis.title.x = element_blank(),
        axis.ticks.x = element_blank(),
        axis.text.x = element_blank()
```

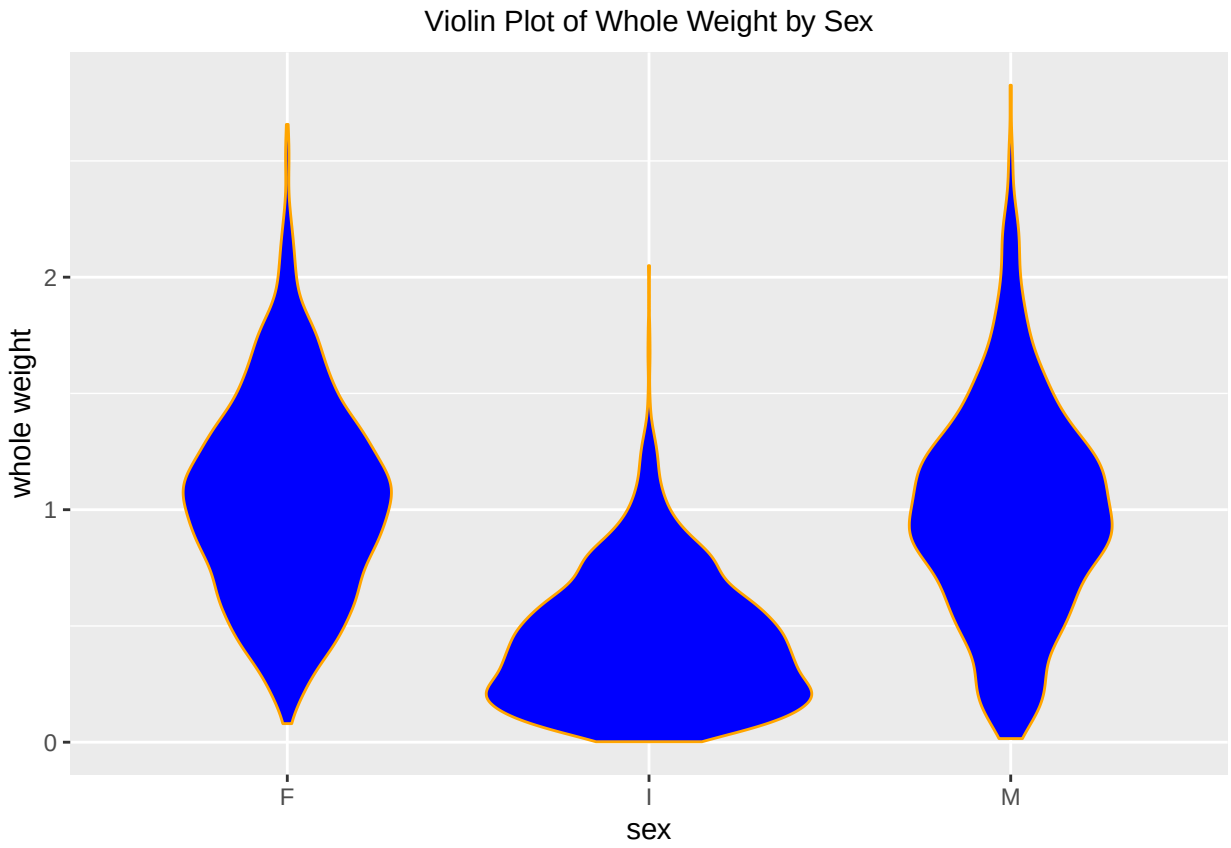
```
    )
```



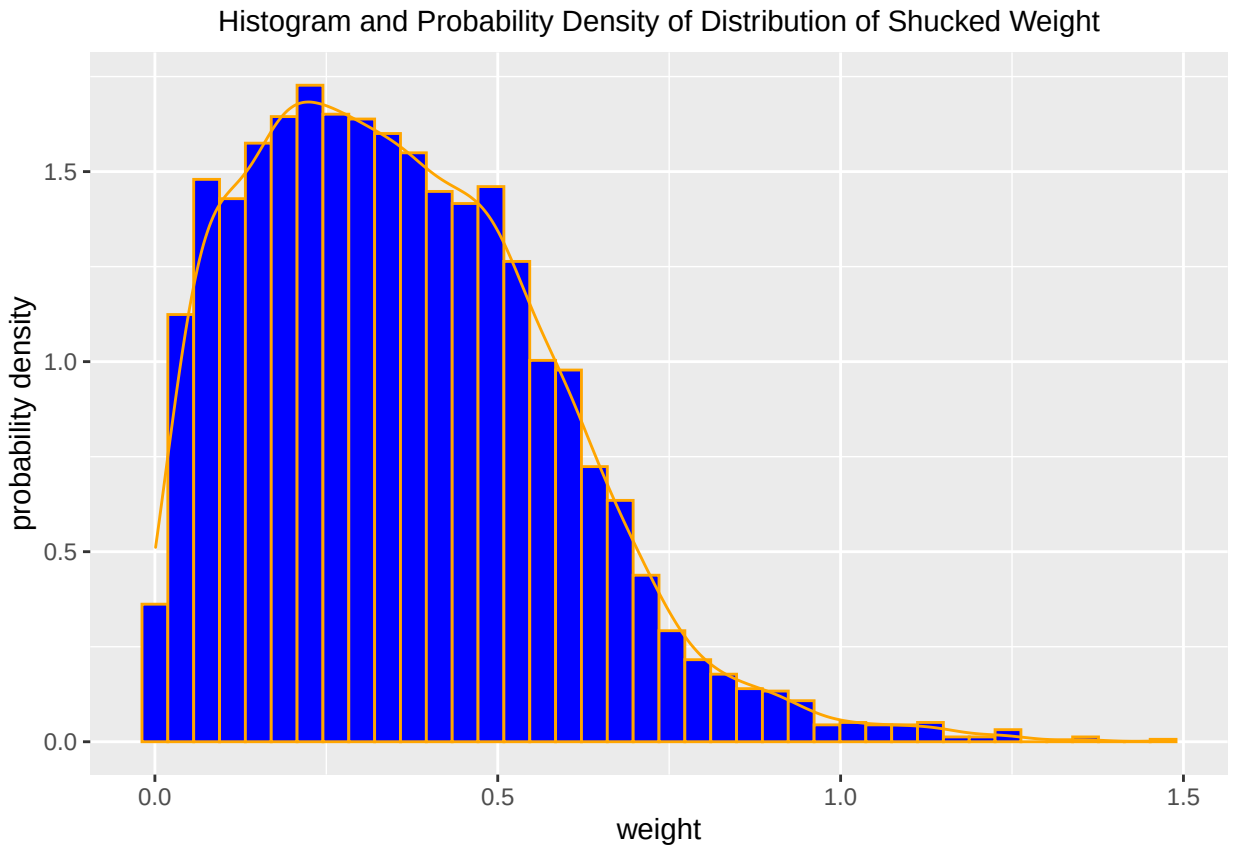

```
ggplot(data_set, aes(x = sex, y = height)) +
    geom_boxplot(fill = "Blue", color = "Orange") +
    labs(
        x = "sex",
        y = "height",
        title = "Boxplot of Height by Sex"
    ) +
    theme(
        plot.title = element_text(hjust = 0.5, size = 11),
    )
```



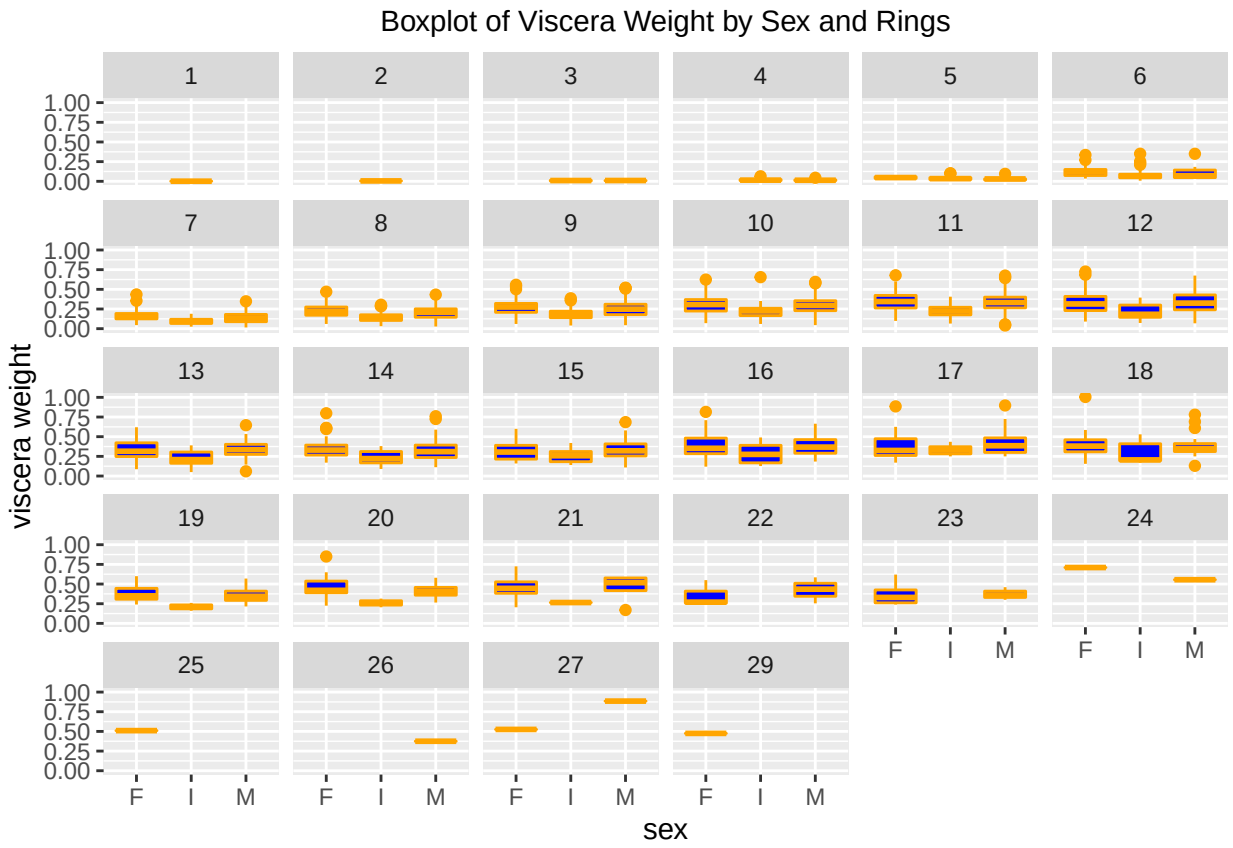

```
ggplot(data_set, aes(x = sex, y = whole_weight)) +
    geom_violin(fill = "Blue", color = "Orange") +
    labs(
        x = "sex",
        y = "whole weight",
        title = "Violin Plot of Whole Weight by Sex"
    ) +
    theme(
        plot.title = element_text(hjust = 0.5, size = 11),
    )
```



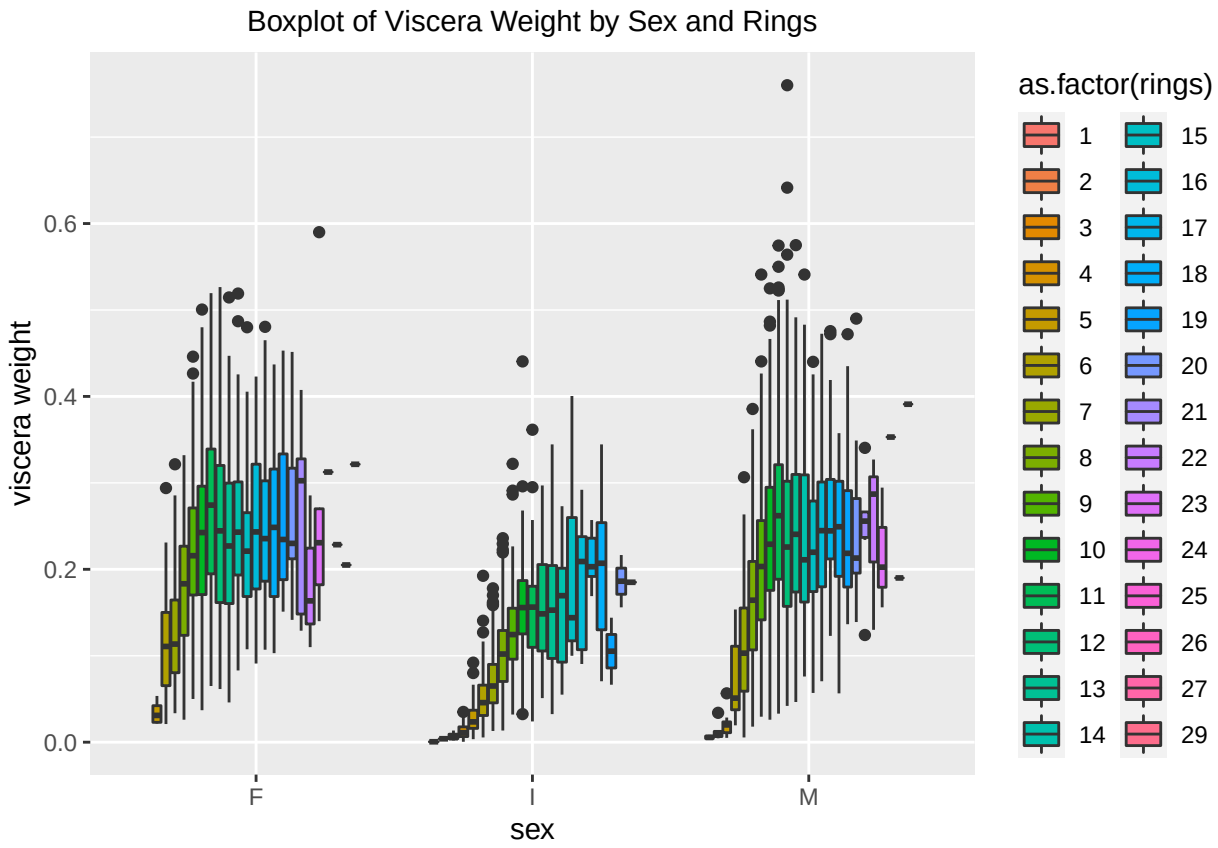

```
ggplot() +
    geom_histogram(data = data_set, aes(x = shucked_weight, y = ..density..), binwidth = density(data_s
    geom_density(data = data_set, aes(x = shucked_weight), color = "Orange") +
    labs(
        x = "weight",
        y = "probability density",
        title = "Histogram and Probability Density of Distribution of Shucked Weight"
    ) +
    theme(
        plot.title = element_text(hjust = 0.5, size = 11),
        axis.text.x = element_text(angle = 0)
    )
```




```
ggplot(data_set, aes(x = sex, y = shell_weight)) +
    geom_boxplot(fill = "Blue", color = "Orange") +
    labs(
        x = "sex",
        y = "viscera weight",
        title = "Boxplot of Viscera Weight by Sex and Rings"
    ) +
    theme(
        plot.title = element_text(hjust = 0.5, size = 11),
    ) +
    facet_wrap(~rings)
```




```
ggplot(data_set, aes(x = sex, y = viscera_weight, fill = as.factor(rings))) +
    geom_boxplot() +
    labs(
        x = "sex",
        y = "viscera weight",
        title = "Boxplot of Viscera Weight by Sex and Rings"
    ) +
    theme(
        plot.title = element_text(hjust = 0.5, size = 11),
    )
```


Boxplot of Viscera Weight by Sex and Rings
viscera weight
0.6
0.4
0.2
0.0
F
I
M
sex
as.factor(rings)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
29