

# Week 6 Assignment

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## Iris Analysis

```
# Assigning the data set to a new variable  
new_df <- iris
```

## Average Sepal Length by Species

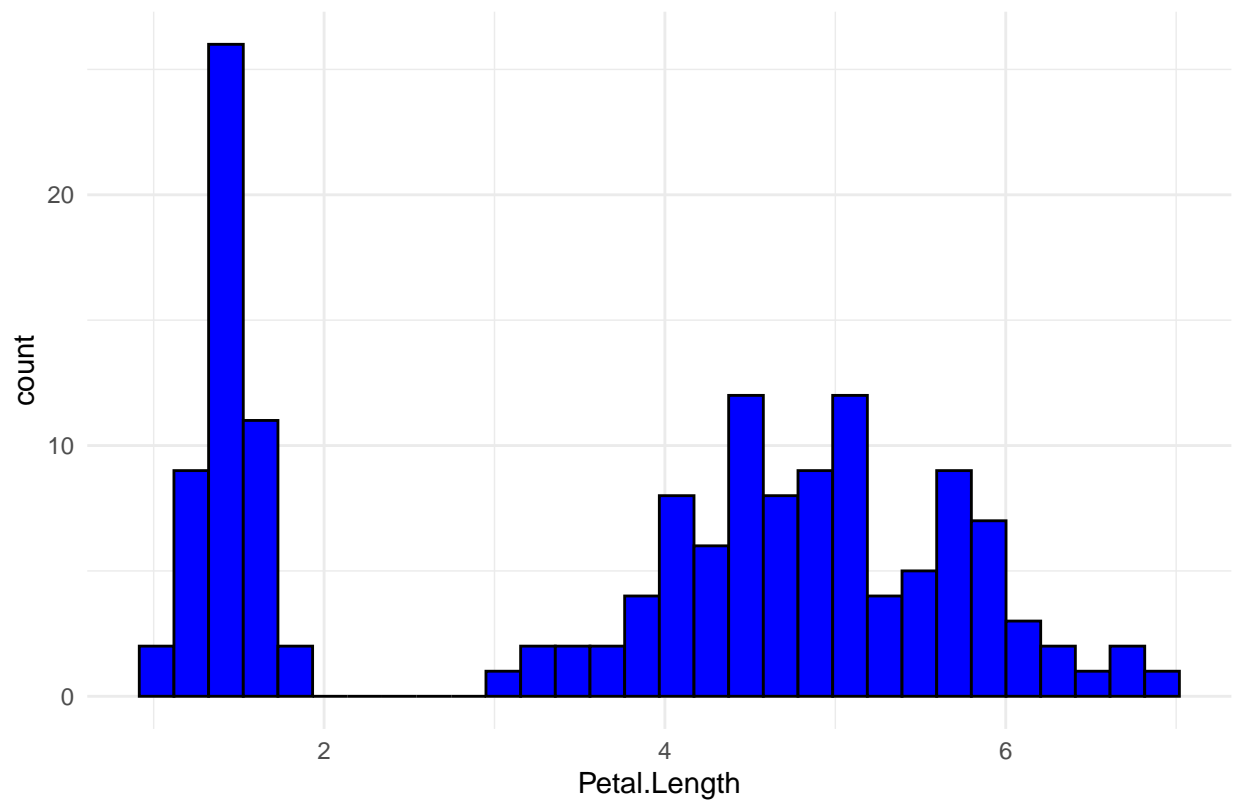
```
# Using dplyr to calculate the mean of Sepal Lengths  
new_df %>% group_by(Species) %>% summarize(mean(Sepal.Length, na.rm=TRUE))
```

```
## # A tibble: 3 x 2  
##   Species      'mean(Sepal.Length, na.rm = TRUE)'  
##   <fct>                                <dbl>  
## 1 setosa                                5.01  
## 2 versicolor                           5.94  
## 3 virginica                            6.59
```

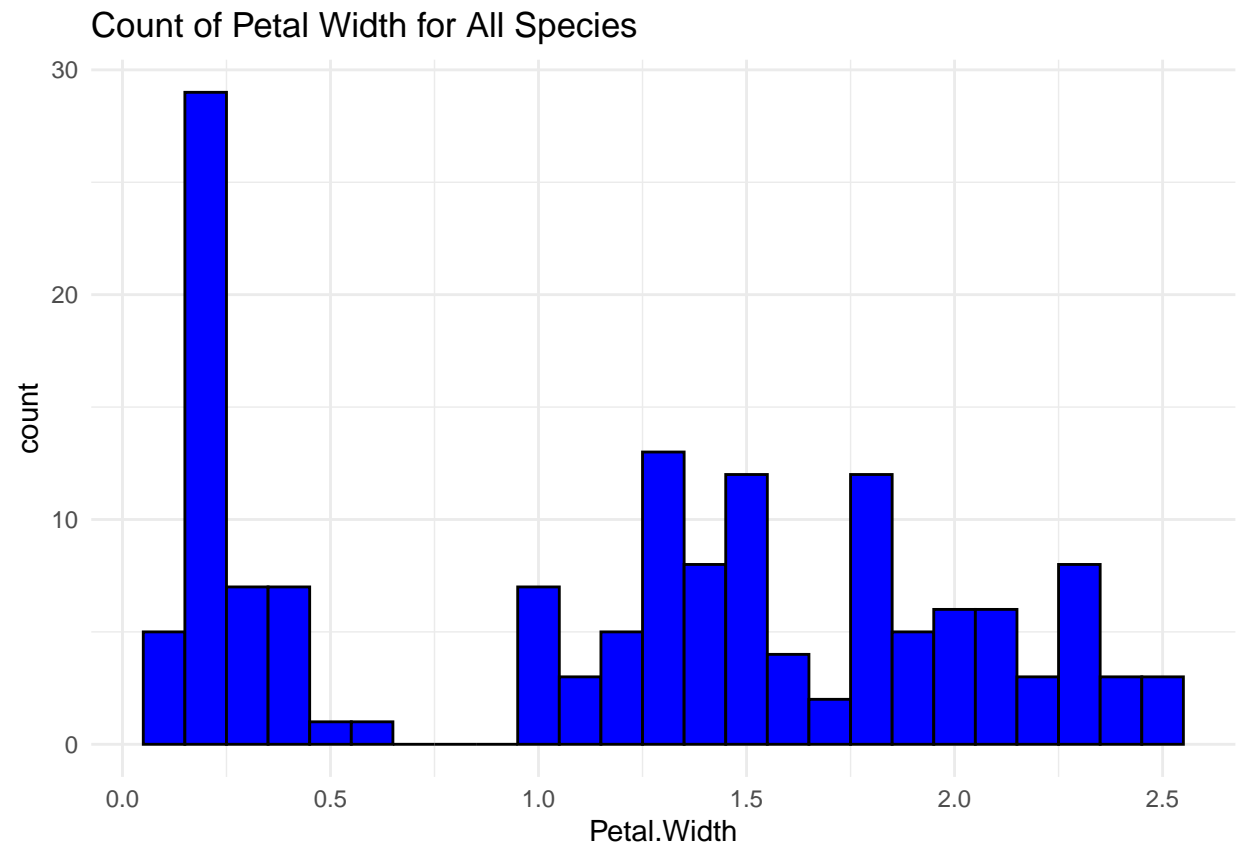
## Visualizations

```
ggplot(new_df, aes(x=Petal.Length)) +  
  geom_histogram(bins=30, fill="Blue", color="black") +  
  ggtitle("Count of Petal Lengths for All Species") +  
  theme_minimal()
```

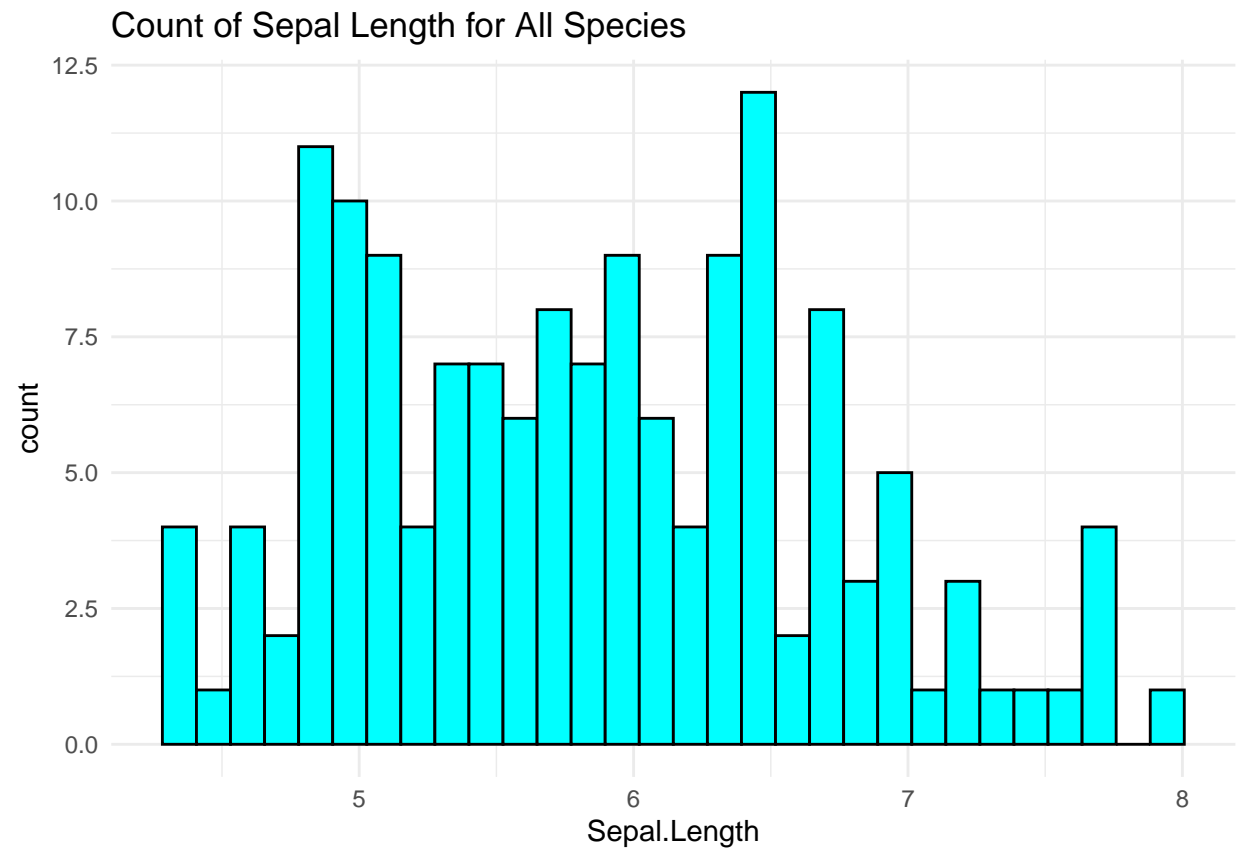
Count of Petal Lengths for All Species



```
ggplot(new_df, aes(x=Petal.Width)) +  
  geom_histogram(bins=25, fill="Blue", color="black") +  
  ggtitle("Count of Petal Width for All Species") +  
  theme_minimal()
```

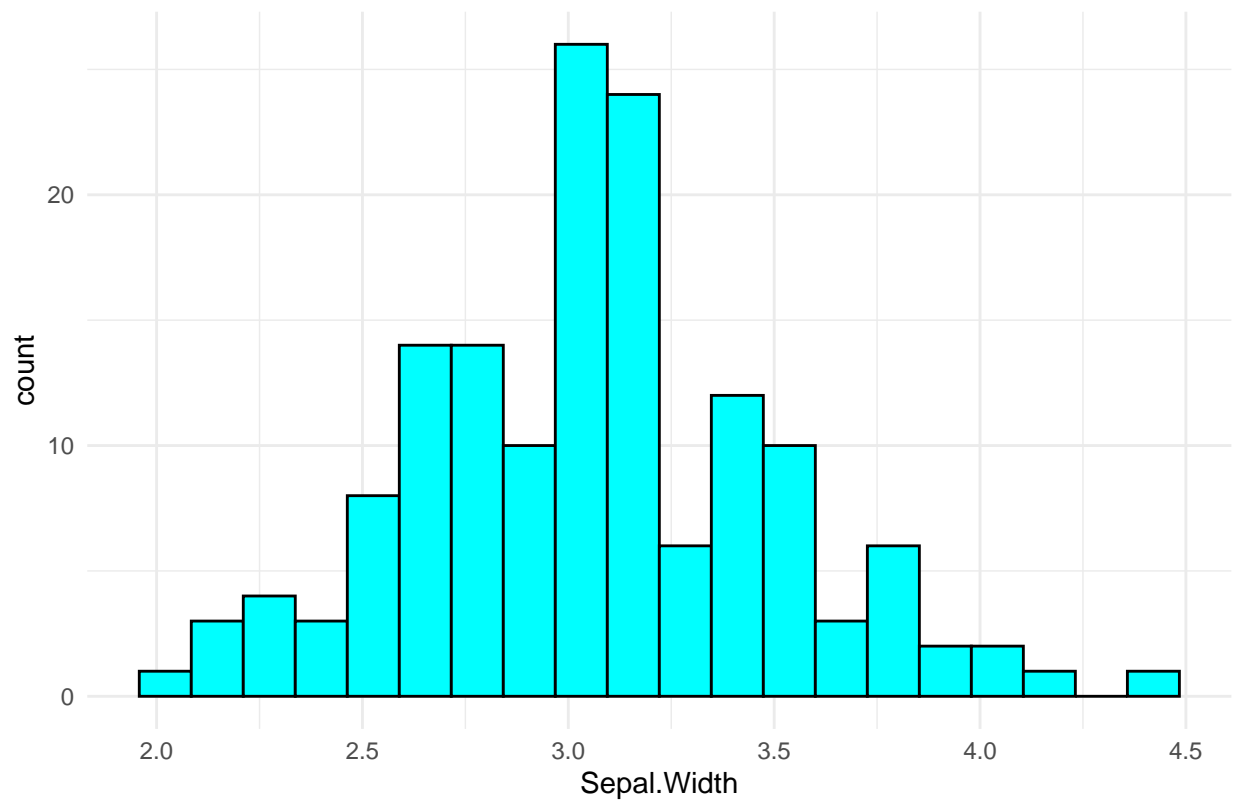


```
ggplot(new_df, aes(x=Sepal.Length)) +  
  geom_histogram(bins=30, fill="Cyan", color="black") +  
  ggtitle("Count of Sepal Length for All Species") +  
  theme_minimal()
```

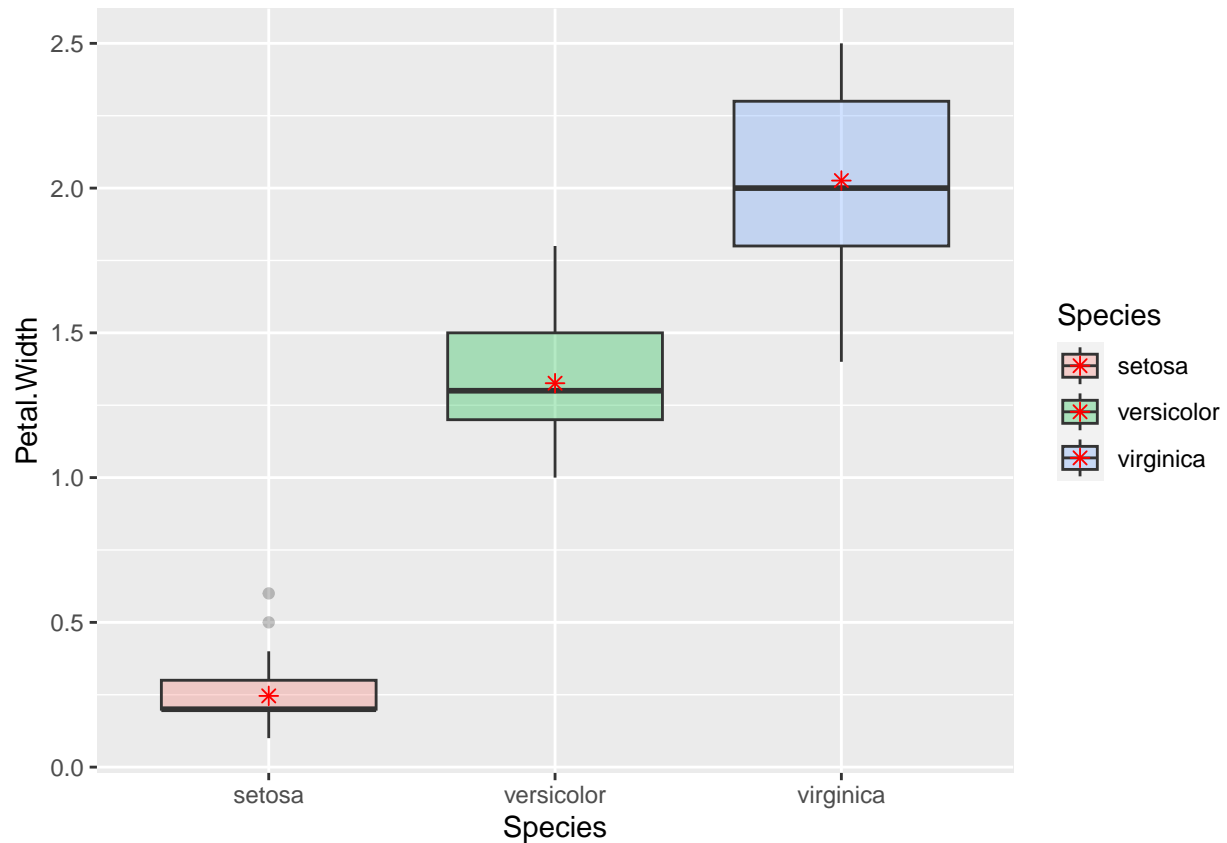


```
ggplot(new_df, aes(x=Sepal.Width)) +  
  geom_histogram(bins=20, fill="Cyan", color="black") +  
  ggtitle("Count of Sepal Width for All Species") +  
  theme_minimal()
```

Count of Sepal Width for All Species



```
ggplot(new_df, aes(x=Species, y=Petal.Width, fill=Species)) +  
  geom_boxplot(alpha=0.3) +  
  stat_summary(fun = "mean", geom = "point", shape = 8, size = 2, color = "red")
```



### Some Differences Between Species

Using a box plot is a good way to compare Petal Widths across species. Based on the box plot, the species “Virginica” has the largest petal width. This can be seen by the median bar of the box plots per species. Based on the sizes of the boxes in the box plot it appears that the “Virginica” species also has the most variance in petal width.

The “Setosa” species has the least variance in petal width while also having the smallest petal width. There are some outlier values in the “Setosa” species above the expected variance in petal width.