RWorksheet_Laurente#4B

2024-11-03

R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

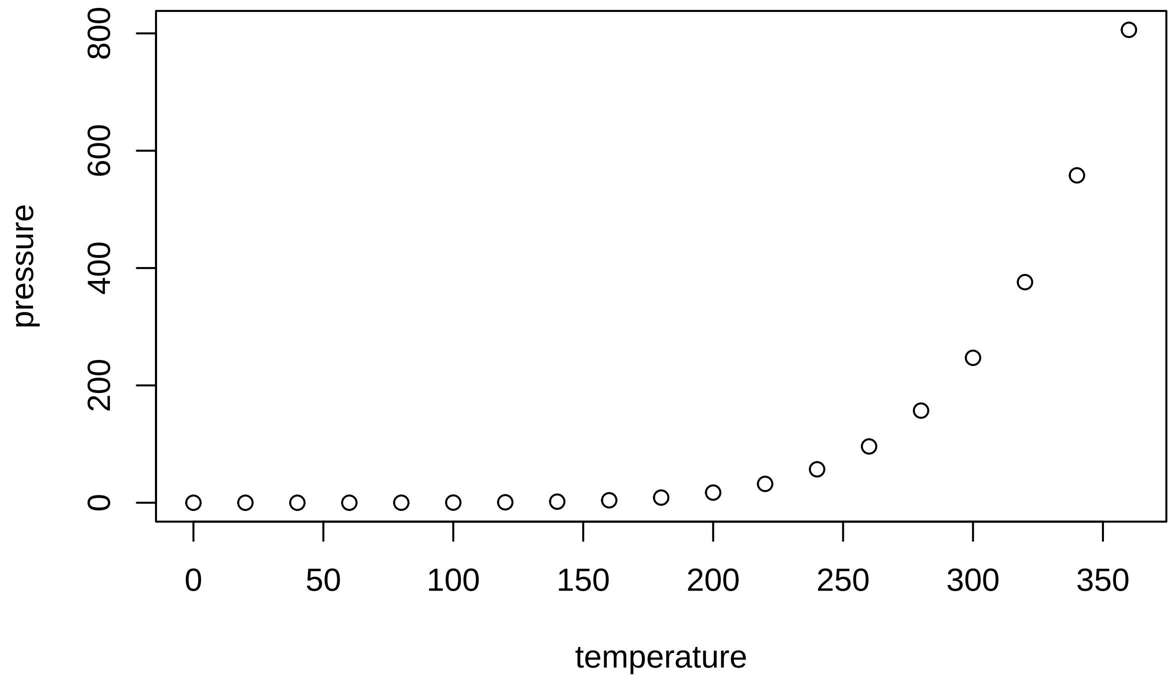
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed           dist       
##  Min.   : 4.0   Min.   :  2.00  
##  1st Qu.:12.0   1st Qu.: 26.00  
##  Median :15.0   Median : 36.00  
##  Mean   :15.4   Mean   : 42.98  
##  3rd Qu.:19.0   3rd Qu.: 56.00  
##  Max.   :25.0   Max.   :120.00  
```

Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

```
#3.)
#start_num <- as.numeric(readline(prompt = "Enter the starting number for the Fibonacci sequence: "))
start_num <- 1
a <- 0
b <- 1

cat("Fibonacci sequence starting from", start_num, "up to 500:\n")
```

```
## Fibonacci sequence starting from 1 up to 500:
```

```
repeat {
  fib <- a + b
  a <- b
  b <- fib

  if (fib > 500) {
    break
  }

  if (fib >= start_num) {
    cat(fib, "\n")
  }
}
```

```
## 1
## 2
## 3
## 5
## 8
## 13
## 21
## 34
## 55
## 89
## 144
## 233
## 377
```

```
#4.)
Number <- seq(28)
Shoe_size <- c(6.5, 9.0, 8.5, 8.5, 10.5, 7.0, 9.5, 9.0, 13.0, 7.5, 10.5, 8.5, 12.0, 10.5, 13.0, 11.5, 8
length(Shoe_size)
```

```
## [1] 28
```

```
Height <- c(66.0, 68.0, 64.5, 65.0, 70.0, 64.0, 70.0, 71.0, 72.0, 64.0, 74.5, 67.0, 71.0, 71.0, 77.0, 7
length(Height)
```

```
## [1] 28
```

```
Gender <- c("F", "F", "F", "F", "M", "F", "F", "F", "M", "F", "M", "F", "M", "M", "M", "M", "F", "F", "
length(Gender)
```

```
## [1] 28
```

```
four_df <- data.frame(Number, Shoe_size, Height, Gender)
four_df
```

```
##    Number Shoe_size Height Gender
## 1       1       6.5   66.0      F
## 2       2       9.0   68.0      F
## 3       3       8.5   64.5      F
## 4       4       8.5   65.0      F
## 5       5      10.5   70.0      M
## 6       6       7.0   64.0      F
## 7       7       9.5   70.0      F
## 8       8       9.0   71.0      F
## 9       9      13.0   72.0      M
## 10     10       7.5   64.0      F
## 11     11      10.5   74.5      M
## 12     12       8.5   67.0      F
## 13     13      12.0   71.0      M
## 14     14      10.5   71.0      M
## 15     15      13.0   77.0      M
## 16     16      11.5   72.0      M
## 17     17       8.5   59.0      F
## 18     18       5.0   62.0      F
## 19     19      10.0   72.0      M
## 20     20       6.5   66.0      F
## 21     21       7.5   64.0      F
## 22     22       8.5   67.0      M
## 23     23      10.5   73.0      M
## 24     24       8.5   69.0      F
## 25     25      10.5   72.0      M
## 26     26      11.0   70.0      M
## 27     27       9.0   69.0      M
## 28     28      13.0   70.0      M
```

```
colnames(four_df) <- c("Number", "Shoe Size", "Height", "Gender")
four_df
```

```
##    Number Shoe Size Height Gender
## 1       1       6.5   66.0      F
## 2       2       9.0   68.0      F
## 3       3       8.5   64.5      F
## 4       4       8.5   65.0      F
## 5       5      10.5   70.0      M
## 6       6       7.0   64.0      F
## 7       7       9.5   70.0      F
## 8       8       9.0   71.0      F
## 9       9      13.0   72.0      M
## 10     10       7.5   64.0      F
## 11     11      10.5   74.5      M
## 12     12       8.5   67.0      F
## 13     13      12.0   71.0      M
## 14     14      10.5   71.0      M
## 15     15      13.0   77.0      M
## 16     16      11.5   72.0      M
## 17     17       8.5   59.0      F
## 18     18       5.0   62.0      F
## 19     19      10.0   72.0      M
## 20     20       6.5   66.0      F
## 21     21       7.5   64.0      F
## 22     22       8.5   67.0      M
## 23     23      10.5   73.0      M
## 24     24       8.5   69.0      F
## 25     25      10.5   72.0      M
## 26     26      11.0   70.0      M
## 27     27       9.0   69.0      M
## 28     28      13.0   70.0      M
```

```
#4.)
#a.)
#install.packages("openxlsx")
#library(openxlsx)

#write.xlsx(four_df, "Shoe Sizes.xlsx")
```

```
#4.)
#b.)
female_data <- subset(four_df, Gender == "F")
male_data <- subset(four_df, Gender == "M")

# Count the number of observations for each gender
num_females <- nrow(female_data)
num_males <- nrow(male_data)

# Print the results
cat("Number of Female observations:", num_females, "\n")
```

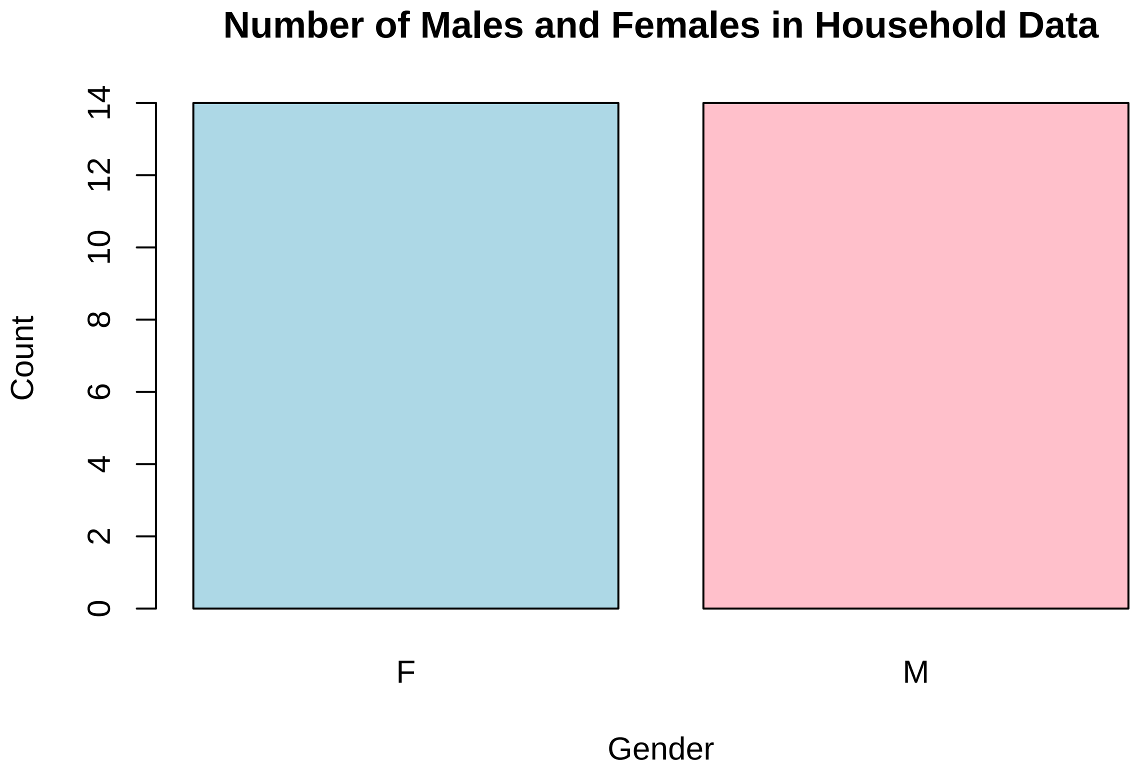
```
## Number of Female observations: 14
```

```
cat("Number of Male observations:", num_males, "\n")
```

```
## Number of Male observations: 14
```

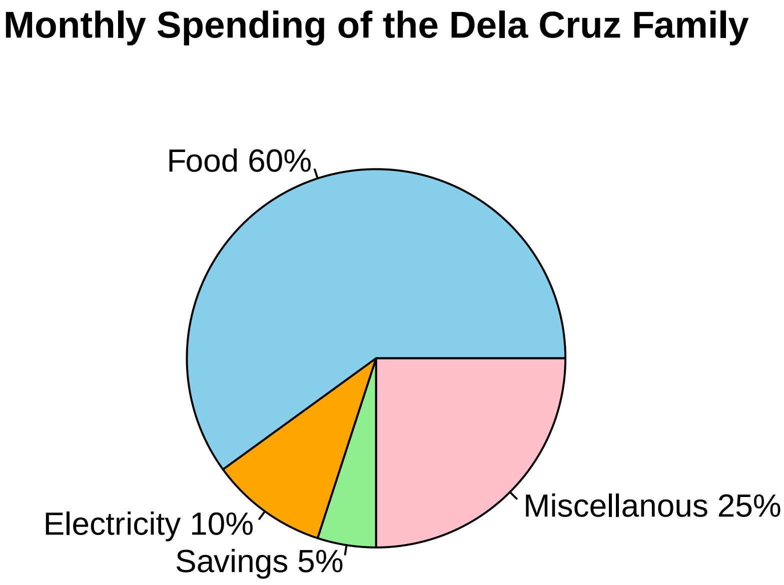
```
#4.)
#c.)
gender_counts <- table(Gender)

barplot(gender_counts,
        main = "Number of Males and Females in Household Data",
        xlab = "Gender",
        ylab = "Count",
        col = c("lightblue", "pink"),
        args.legend = list(x = "topright"))
```



```
#5.)
#a.)
expenses <- c(Food = 60, Electricity = 10, Savings = 5, Miscellaneous = 25)

labels <- c("Food 60%", "Electricity 10%", "Savings 5%", "Miscellanous 25%")
pie(expenses,
    labels = labels,
    main = "Monthly Spending of the Dela Cruz Family",
    col = c("skyblue", "orange", "lightgreen", "pink")
)
```



```r
#6.)
#a.)
data(iris)

str(iris)
```

```
## 'data.frame':    150 obs. of  5 variables:
##  $ Sepal.Length: num  5.1 4.9 4.7 4.6 5 5.4 4.6 5 4.4 4.9 ...
##  $ Sepal.Width : num  3.5 3 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 ...
##  $ Petal.Length: num  1.4 1.4 1.3 1.5 1.4 1.7 1.4 1.5 1.4 1.5 ...
##  $ Petal.Width : num  0.2 0.2 0.2 0.2 0.2 0.4 0.3 0.2 0.2 0.1 ...
##  $ Species     : Factor w/ 3 levels "setosa","versicolor",..: 1 1 1 1 1 1 1 1 1 1 ...
```

```r
#6.)
#b.)
means <- colMeans(iris[, c("Sepal.Length", "Sepal.Width", "Petal.Length", "Petal.Width")])

means
```

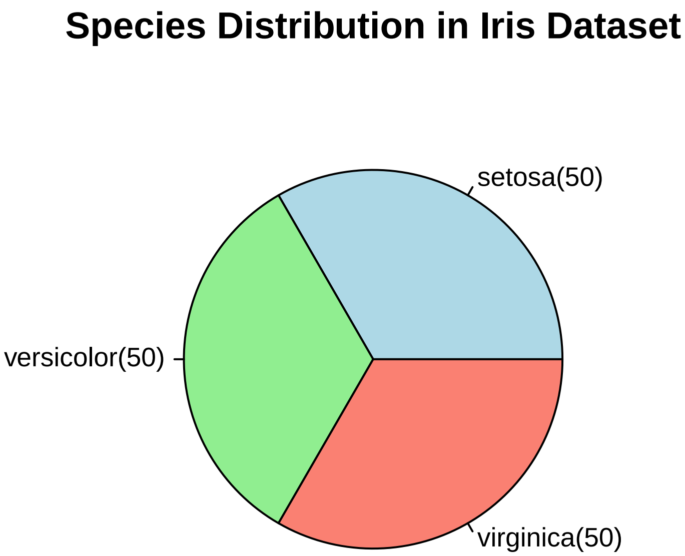
```
## Sepal.Length  Sepal.Width Petal.Length  Petal.Width
##     5.843333     3.057333     3.758000     1.199333
```

```r
#6.)
#c.)
```

```
species_count <- table(iris$Species)

colors <- c("lightblue", "lightgreen", "salmon")

pie(species_count,
    main = "Species Distribution in Iris Dataset",
    col = colors,
    labels = paste(names(species_count), "(", species_count, ")", sep = ""),
    cex = 0.8)
```



```
#6.)
#d.)
subset_of_setosa <- subset(iris, Species == "setosa")
subset_of_versicolor <- subset(iris, Species == "versicolor")
subset_of_virginica <- subset(iris, Species == "virginica")

last_six_setosa <- tail(subset_of_setosa, 6)
last_six_versicolor <- tail(subset_of_versicolor, 6)
last_six_virginica <- tail(subset_of_virginica, 6)

print("Last six rows of Setosa:")
```

```
## [1] "Last six rows of Setosa:"
```

```r
print(last_six_setosa)
```

```
##    Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 45          5.1         3.8          1.9         0.4  setosa
## 46          4.8         3.0          1.4         0.3  setosa
## 47          5.1         3.8          1.6         0.2  setosa
## 48          4.6         3.2          1.4         0.2  setosa
## 49          5.3         3.7          1.5         0.2  setosa
## 50          5.0         3.3          1.4         0.2  setosa
```

```r
print("Last six rows of Versicolor:")
```

```
## [1] "Last six rows of Versicolor:"
```

```r
print(last_six_versicolor)
```

```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width    Species
## 95           5.6         2.7          4.2         1.3 versicolor
## 96           5.7         3.0          4.2         1.2 versicolor
## 97           5.7         2.9          4.2         1.3 versicolor
## 98           6.2         2.9          4.3         1.3 versicolor
## 99           5.1         2.5          3.0         1.1 versicolor
## 100          5.7         2.8          4.1         1.3 versicolor
```

```r
print("Last six rows of Virginica:")
```

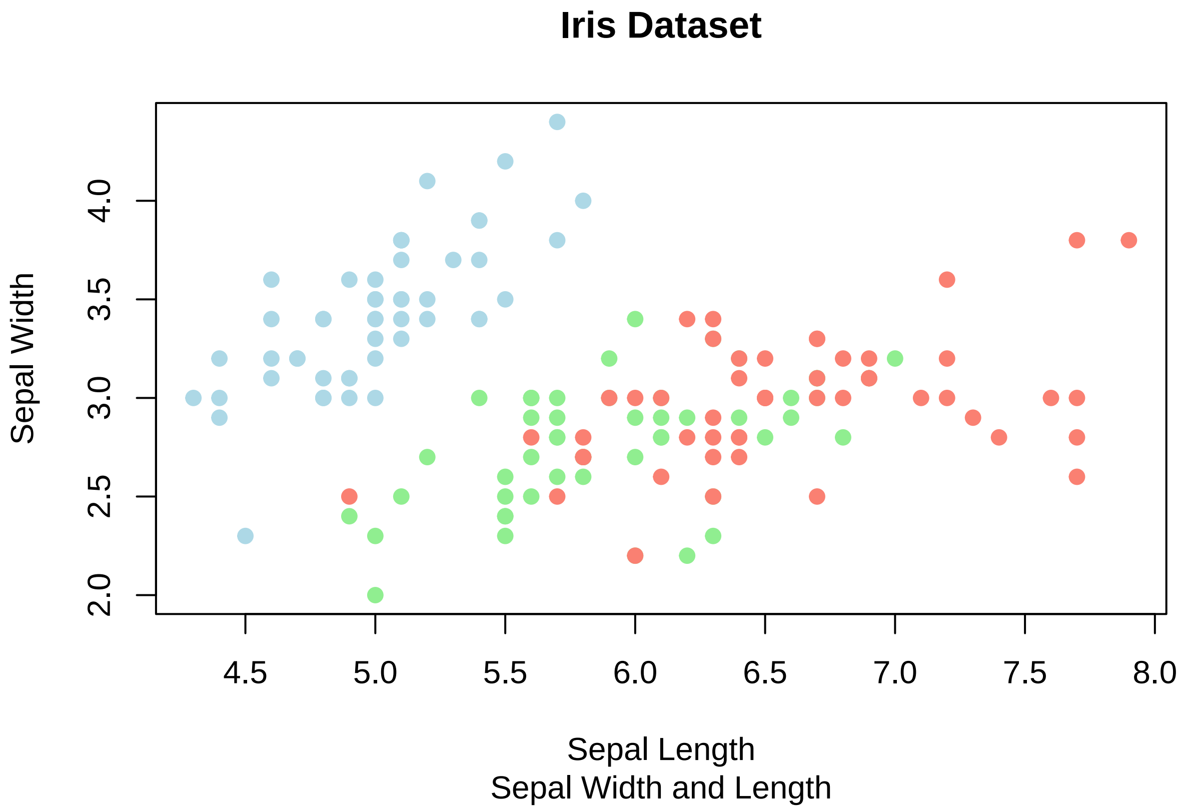
```
## [1] "Last six rows of Virginica:"
```

```r
print(last_six_virginica)
```

```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width   Species
## 145          6.7         3.3          5.7         2.5 virginica
## 146          6.7         3.0          5.2         2.3 virginica
## 147          6.3         2.5          5.0         1.9 virginica
## 148          6.5         3.0          5.2         2.0 virginica
## 149          6.2         3.4          5.4         2.3 virginica
## 150          5.9         3.0          5.1         1.8 virginica
```

```r
#6.)
#e.)
colors <- c("setosa" = "lightblue", "versicolor" = "lightgreen", "virginica" = "salmon")


plot(iris$Sepal.Length, iris$Sepal.Width,
     col = colors[iris$Species],
     pch = 19,
     xlab = "Sepal Length",
     ylab = "Sepal Width",
     main = "Iris Dataset",
     sub = "Sepal Width and Length")
```



```
# Add a legend
```

```
#6.)
#f.)
# The scatterplot shows the relationship between one or more variables, in this case, versicolor and vi
```

```
#7.)
#install.packages("readxl")
#library(readxl)

#Alexa_file <- read.xlsx("alexa_file.xlsx")
#Alexa_file
```

```
#7.)
#a.)
#library(dplyr)
#Alexa_file$variation <- gsub("Black Dot", "White Dot", Alexa_file$variation)

#Alexa_file$variation <- gsub("Black Plus", "White Plus", Alexa_file$variation)

#Alexa_file$variation <- gsub("Black Show", "White Show", Alexa_file$variation)


#Alexa_file$variation <- gsub("Black Spot", "White Spot", Alexa_file$variation)
```

```
#view <- Alexa_file %>%
 # group_by(variation) %>%
  #summarize(number = n())

#view
#variations <- view
#knitr::include_graphics("SnippetExample.png")
```

```
#7.)
#b.)
#save(variations, file = "variations.R.Data")
```

```
#7.)
#c.)
#load("variations.R.Data")

#view
Black <- c("Black Dot", "Black Plus", "Black Show", "Black Spot")
black_total <- c(516, 270, 265, 241)

White <- c("White Dot", "White Plus", "White Show", "White Spot")
white_total <- c(184, 78, 85, 109)

Black_Variations <- data.frame(Black, black_total)
White_Variations <- data.frame(White, white_total)

Black_Variations
```

```
##        Black black_total
## 1  Black Dot         516
## 2 Black Plus         270
## 3 Black Show         265
## 4 Black Spot         241
```

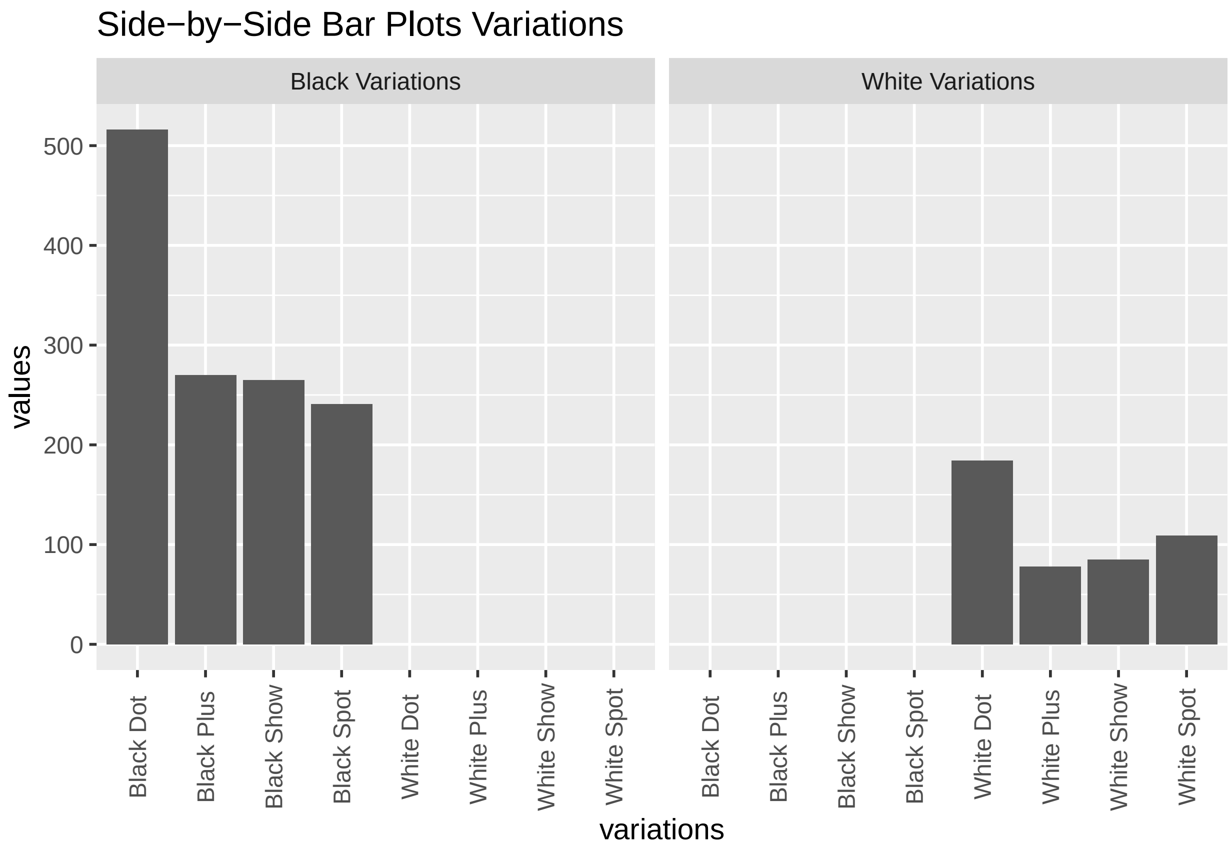
```
White_Variations
```

```
##        White white_total
## 1  White Dot         184
## 2 White Plus          78
## 3 White Show          85
## 4 White Spot         109
```

```
library(ggplot2)
data <- data.frame(
  category = rep(c("A", "B", "C"), 2),
  count = c(10, 15, 20, 5, 10, 15),
  group = rep(c("Group 1", "Group 2"), each = 3)
)

Barplot_variations <- data.frame(
                      variations = c("Black Dot", "Black Plus", "Black Show", "Black Spot", "White Dot"
                      values = c(516, 270, 265, 241, 184, 78, 85, 109),
                      group = rep(c("Black Variations", "White Variations"), each = 4)
)


ggplot(Barplot_variations, aes(x = variations, y = values)) +
  geom_bar(stat = "identity") +
  facet_wrap(~ group) +
  labs(title = "Side-by-Side Bar Plots Variations") + theme(axis.text.x = element_text(angle = 90, vjus
```


Side−by−Side Bar Plots Variations
Black Variations
White Variations
values
Black Dot
Black Plus
Black Show
Black Spot
White Dot
White Plus
White Show
White Spot
Black Dot
Black Plus
Black Show
Black Spot
White Dot
White Plus
White Show
White Spot
variations