

RWorksheet4b

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1.

```
Vector0 <- c(0)
matrix0 <- matrix(Vector0, nrow=5,ncol=5)

matrix0

##      [,1] [,2] [,3] [,4] [,5]
## [1,]    0    0    0    0    0
## [2,]    0    0    0    0    0
## [3,]    0    0    0    0    0
## [4,]    0    0    0    0    0
## [5,]    0    0    0    0    0

VectorA <- c(1,2,3,4,5)
matrixa <- matrix(VectorA, nrow= 5, ncol= 5)

for (i in 1:length(VectorA)) {
  matrix0[i, ] <- abs(VectorA - VectorA[i] )
}

print(matrix0)
```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]    0    1    2    3    4
## [2,]    1    0    1    2    3
## [3,]    2    1    0    1    2
## [4,]    3    2    1    0    1
## [5,]    4    3    2    1    0
```

2.

```
for(i in 1:5){
  starneww <- rep(" ",i)
  print(starneww)
}
```

```
## [1] "*"
## [1] "*" "*"
## [1] "*" "*" "*"
## [1] "*" "*" "*" "*"
## [1] "*" "*" "*" "*" "*"
```

3.

```
yournum <- as.integer(readline("Enter the starting Fibonacci sequence number: "))
```

```
## Enter the starting Fibonacci sequence number:
```

```
if(is.na(yournum || yournum < 0)) {  
  cat("Enter something else")  
} else {
```

```
inputnum <- yournum  
a <- inputnum  
b <- 0
```

```
cat("Fibonacci sequence starting from", inputnum, ":\n")
```

```
repeat {  
  num <- a + b  
  if (num > 500){  
    break  
  }  
  cat(num, " ")  
  a <- b  
  b <- num  
}
```

```
cat("\n")  
}
```

```
## Enter something else
```

4a.

```
shoesize <- read.csv("datashoe.csv")
```

```
shoesize
```

```
##      X Shoesize 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
```

4b.

```
malesub <- subset(shoesize, Gender == 'M')

femalesub <- subset(shoesize, Gender == 'F')

cat("Number of obsevation in male:",nrow(malesub),"\n")

## Number of obsevation in male: 14

cat("Number of observation in female",nrow(femalesub),"\n")

## Number of observation in female 14
```

4c.

```
gendermf <- table(shoesize$Gender)

barplot(gendermf,
  main = "The number of male and female",
  xlab = "Gender",
  ylab = "Count",
  col = c("red","pink"),
  legend.text =c("Male", "Female"))
```

The number of male and female



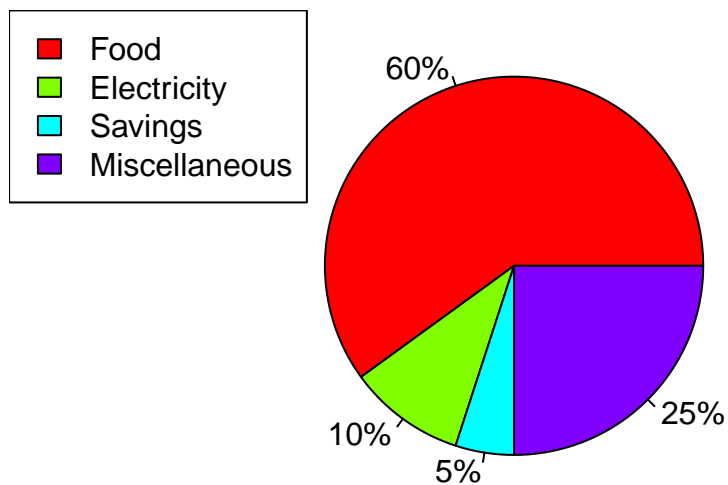
5a.

```
familyincome <- c(60,10,5,25)
```

```
pie(familyincome, labels = paste0(familyincome, "%"),
    main = "Dela Cruz Family Expenses", col = rainbow(length(familyincome)))
```

```
legend("topleft", legend = c("Food", "Electricity", "Savings", "Miscellaneous"),
    fill = rainbow(length(familyincome)))
```

Dela Cruz Family Expenses



6a.

```
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 ...
```

#there are 150 observation and 5 variables in iris dataset. there are numeric measurements in sepal.wid

6b.

```
data(iris)
```

```
meaniris <- colMeans(iris[, 1:4])
```

```
meaniris
```

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

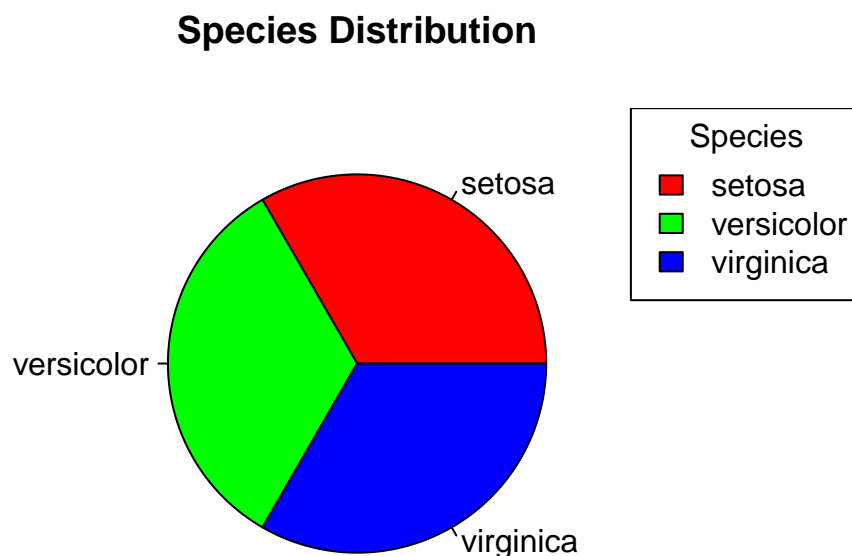
6c.

```
data(iris)
```

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

```
pie(species, labels = names(species),
     col = rainbow(length(species)),
     main = "Species Distribution")
```

```
legend("topright", legend = names(species),
       fill = rainbow(length(species)), title = "Species")
```



6d.

```
data(iris)

setosa_sub <- subset(iris, Species == "setosa")
versicolor_sub <- subset(iris, Species == "versicolor")
virginica_sub <- subset(iris, Species == "virginica")

#to display the last 6 rows of each species

tail(setosa_sub)

##      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

tail(versicolor_sub)

##      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

tail(virginica_sub)

##      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
```

6e.

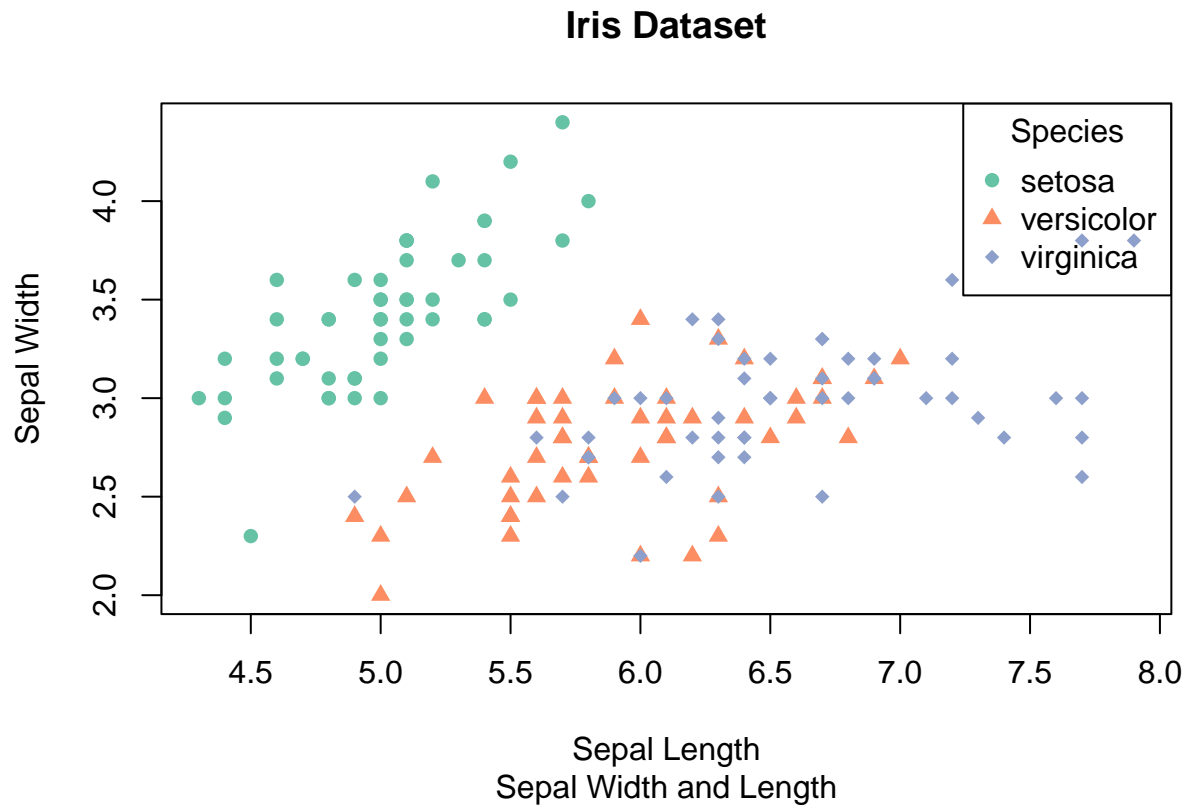
```
data(iris)

iris$Species <- as.factor(iris$Species)

colors <- c("setosa" = "#66c2a5", "versicolor" = "#fc8d62", "virginica" = "#8da0cb")
symbols <- c("setosa" = 16, "versicolor" = 17, "virginica" = 18)

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

```
legend("topright", legend = levels(iris$Species), col = colors, pch = symbols, title = "Species")
```



#6e
#by factoring the species, it will be represents as a categories in R.

7.

```
library(readxl)

alexa <- read_excel("alexa_file.xlsx")

alexa

## # A tibble: 3,150 x 5
##   rating date          variation verified_reviews feedback
##   <dbl> <dtm>          <chr>          <chr>          <dbl>
## 1     5 2018-07-31 00:00:00 Charcoal Fabric Love my Echo!      1
## 2     5 2018-07-31 00:00:00 Charcoal Fabric Loved it!          1
## 3     4 2018-07-31 00:00:00 Walnut Finish  Sometimes while play~ 1
## 4     5 2018-07-31 00:00:00 Charcoal Fabric I have had a lot of ~ 1
## 5     5 2018-07-31 00:00:00 Charcoal Fabric Music              1
## 6     5 2018-07-31 00:00:00 Heather Gray Fabric I received the echo ~ 1
## 7     3 2018-07-31 00:00:00 Sandstone Fabric Without having a cel~ 1
## 8     5 2018-07-31 00:00:00 Charcoal Fabric I think this is the ~ 1
## 9     5 2018-07-30 00:00:00 Heather Gray Fabric looks great      1
## 10    5 2018-07-30 00:00:00 Heather Gray Fabric Love it! I've listen~ 1
## # i 3,140 more rows
```

7a.

```
#black
alexa$variation <- gsub("Black Dot", "BlackDot", alexa$variation)
alexa$variation <- gsub("Black Plus", "BlackPlus", alexa$variation)
alexa$variation <- gsub("Black Show", "BlackShow", alexa$variation)
alexa$variation <- gsub("Black Spot", "BlackSpot", alexa$variation)

#white
alexa$variation <- gsub("White Dot", "WhiteDot", alexa$variation)
alexa$variation <- gsub("White Plus", "WhitePlus", alexa$variation)
alexa$variation <- gsub("White Show", "WhiteShow", alexa$variation)
alexa$variation <- gsub("White Spot", "WhiteSpot", alexa$variation)

alexa

## # A tibble: 3,150 x 5
##   rating date          variation      verified_reviews  feedback
##   <dbl> <dtm>          <chr>          <chr>          <dbl>
## 1     5 2018-07-31 00:00:00 Charcoal Fabric Love my Echo!         1
## 2     5 2018-07-31 00:00:00 Charcoal Fabric Loved it!             1
## 3     4 2018-07-31 00:00:00 Walnut Finish  Sometimes while play~ 1
## 4     5 2018-07-31 00:00:00 Charcoal Fabric I have had a lot of ~ 1
## 5     5 2018-07-31 00:00:00 Charcoal Fabric Music                 1
## 6     5 2018-07-31 00:00:00 Heather Gray Fabric I received the echo ~ 1
## 7     3 2018-07-31 00:00:00 Sandstone Fabric Without having a cel~ 1
## 8     5 2018-07-31 00:00:00 Charcoal Fabric I think this is the ~ 1
## 9     5 2018-07-30 00:00:00 Heather Gray Fabric looks great 1
## 10    5 2018-07-30 00:00:00 Heather Gray Fabric Love it! I've listen~ 1
## # i 3,140 more rows
```

7b.

```
library("dplyr")

##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##   filter, lag

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

var_TOTAL <- alexa %>%
  count(alexa$variation)

var_TOTAL

## # A tibble: 16 x 2
##   `alexa$variation`      n
##   <chr>              <int>
## 1 Black              261
## 2 Black Dot          516
```



```
## 3 Black Plus 270
## 4 Black Show 265
## 5 Black Spot 241
## 6 Charcoal Fabric 430
## 7 Configuration: Fire TV Stick 350
## 8 Heather Gray Fabric 157
## 9 Oak Finish 14
## 10 Sandstone Fabric 90
## 11 Walnut Finish 9
## 12 White 91
## 13 White Dot 184
## 14 White Plus 78
## 15 White Show 85
## 16 White Spot 109
```

```
save(var_TOTAL, file= "variations.RData")
```

7c.

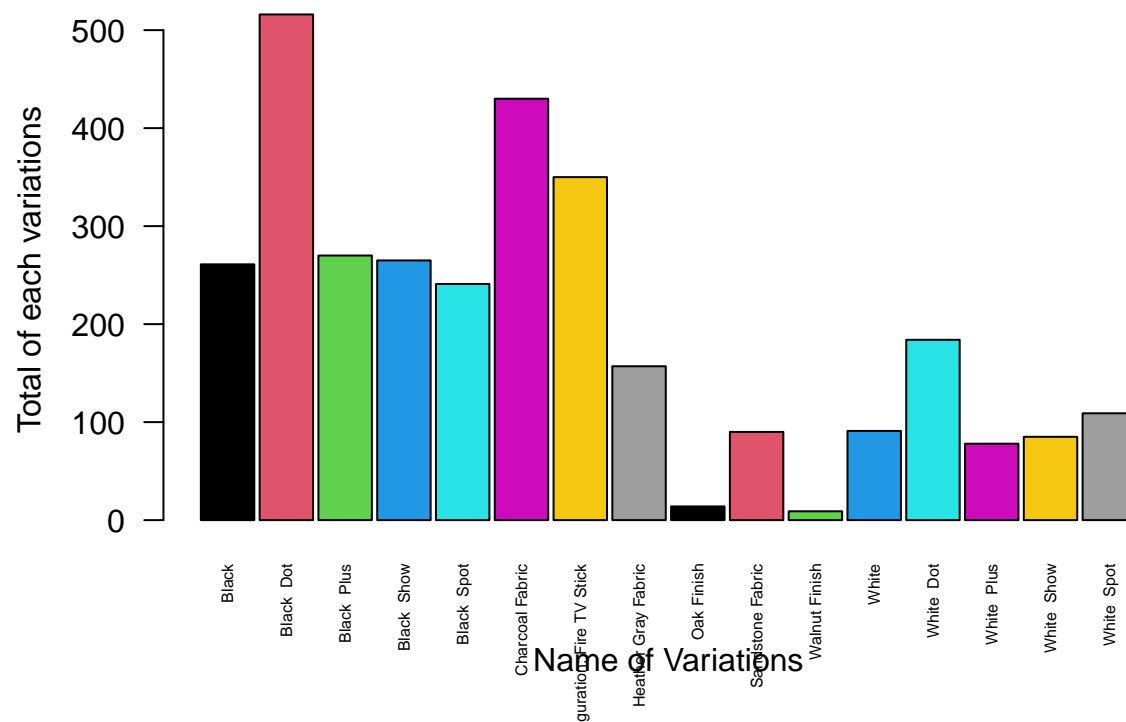
```
load("variations.RData")
var_TOTAL
```

```
## # A tibble: 16 x 2
##   `alexa$variation`      n
##   <chr>              <int>
## 1 Black              261
## 2 Black Dot          516
## 3 Black Plus         270
## 4 Black Show         265
## 5 Black Spot         241
## 6 Charcoal Fabric    430
## 7 Configuration: Fire TV Stick 350
## 8 Heather Gray Fabric 157
## 9 Oak Finish         14
## 10 Sandstone Fabric  90
## 11 Walnut Finish     9
## 12 White             91
## 13 White Dot         184
## 14 White Plus        78
## 15 White Show        85
## 16 White Spot       109
```

```
namevar <- var_TOTAL$`alexa$variation`
```

```
alexaplot <- barplot(var_TOTAL$n,
  names.arg = namevar,
  main = "Total number of variations",
  xlab = "Name of Variations",
  ylab = "Total of each variations",
  col = 1:16,
  space = 0.1,
  cex.names = 0.5,
  las = 2)
```

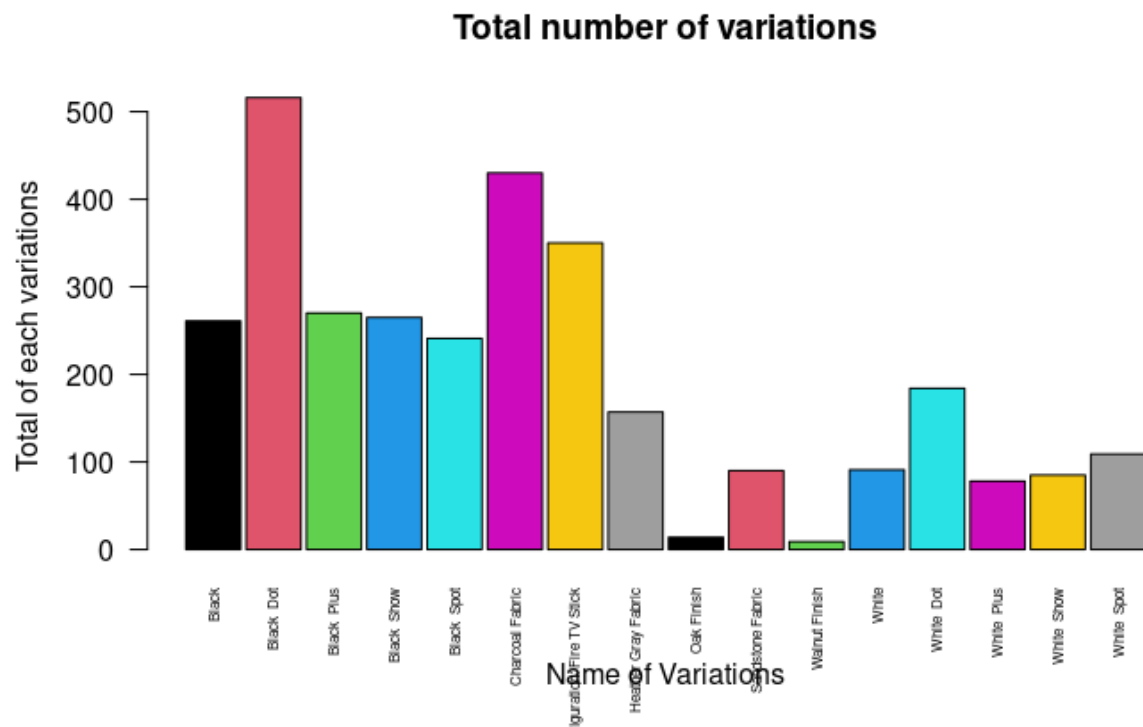
Total number of variations



```
png("alexaplot.png")
dev.off()
```

```
## pdf
## 2
```

```
knitr::include_graphics("/cloud/project/RWorksheet_Bansara/RWorksheet4/alexaplot.png")
```



7d.

```
library(RColorBrewer)

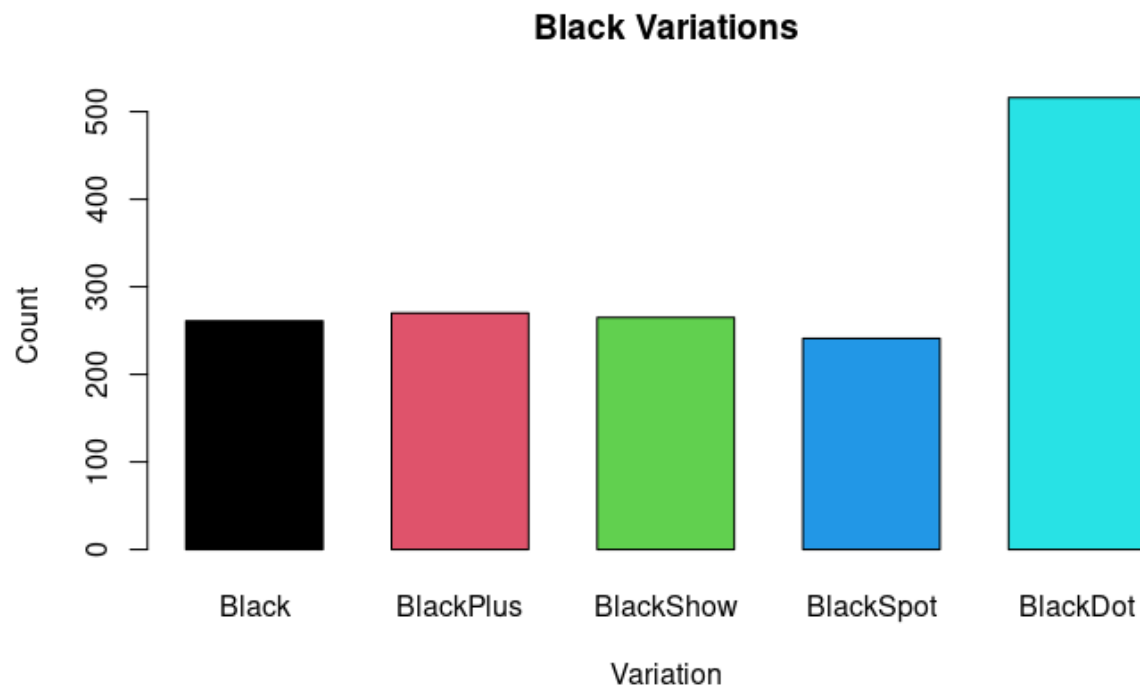
par(mfrow = c(1,2))

blackvarplot <- barplot(height = c(261,270,265,241,516),
  names.arg = c("Black","BlackPlus","BlackShow","BlackSpot","BlackDot"), main = "Total number of variations",
  col = 1:5,
  space = 0.5,
  xlab = "Variation",
  ylab = "Count")

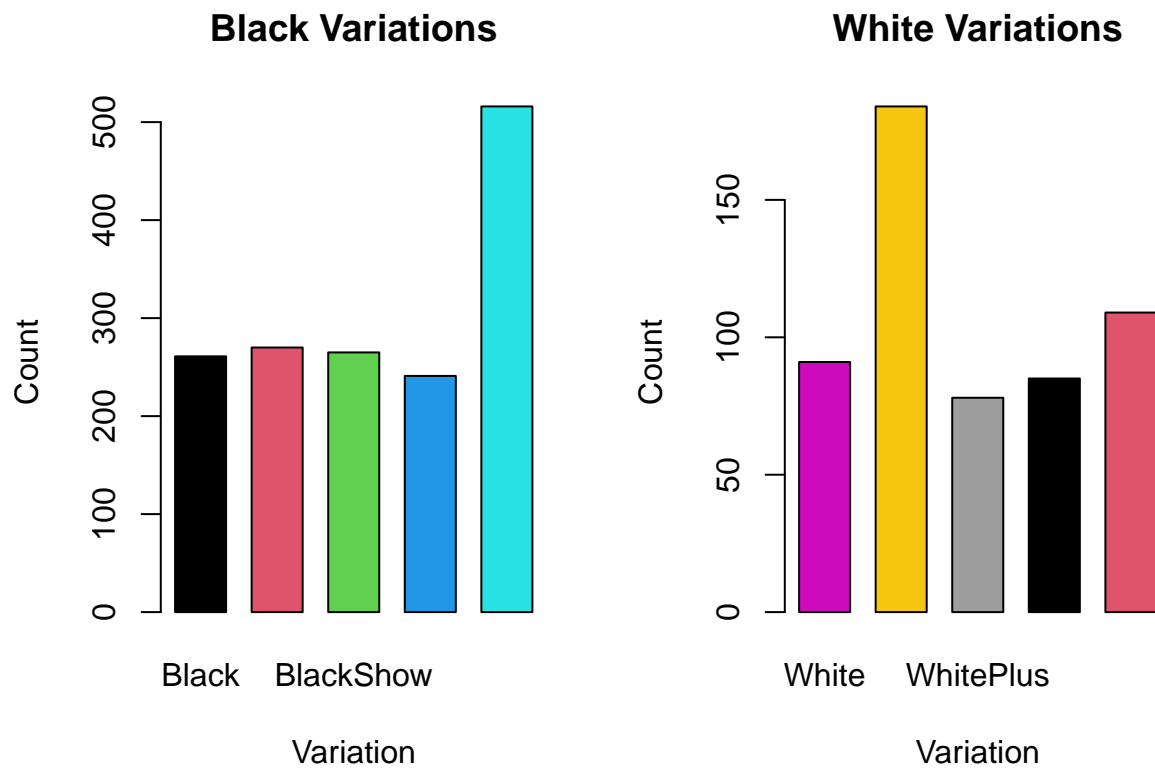
png("blackvarplot.png")
dev.off()

## pdf
## 2

knitr::include_graphics("/cloud/project/RWorksheet_Bansara/RWorksheet4/blackvarplot.png")
```



```
whitevarplot <- barplot(height = c(91,184,78,85,109),  
  names.arg = c("White", "WhiteDot", "WhitePlus", "WhiteShow", "WhiteSpot"),  
  main = "White Variations",  
  space = 0.5,  
  col = 6:10,  
  xlab = "Variation",  
  ylab = "Count",)
```



```
png("whitevarplot.png")
dev.off()
```

```
## pdf
## 2
```

```
knitr::include_graphics("/cloud/project/RWorksheet_Bansara/RWorksheet4/whitevarplot.png")
```

