

# Pokemon task

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```
filelocation <- "Data_Pokemon1.csv" #Enter the location of the data of your computer here.
fdata <- read.csv(filelocation)
dim(fdata)
```

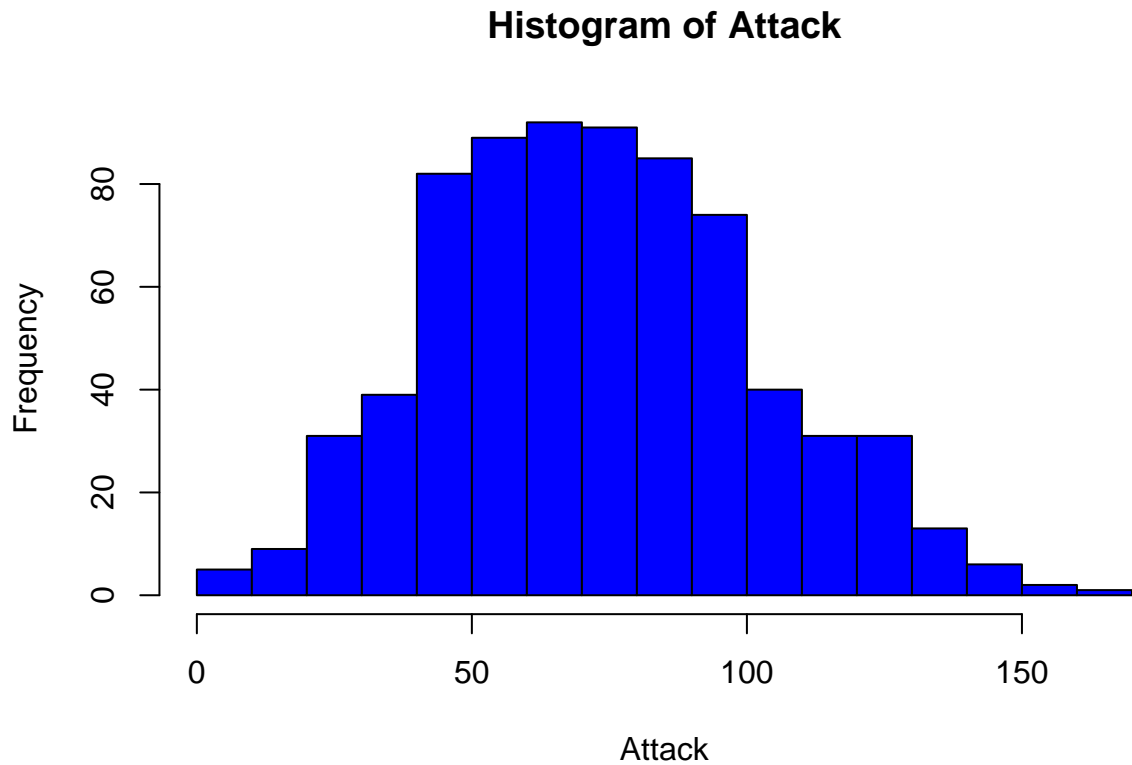
```
## [1] 721  8
```

```
head(fdata)
```

```
##      Name  Type HP Attack Defense Sp.Attack Sp.Defense Speed
## 1 Bulbasaur Grass 45    49    49        65        65    45
## 2 Ivysaur  Grass 60    62    63        80        80    60
## 3 Venusaur Grass 80    82    83       100       100    80
## 4 Charmander Fire 39    52    43        60        50    65
## 5 Charmeleon Fire 58    64    58        80        65    80
## 6 Charizard Fire 78    84    78       109        85   100
```

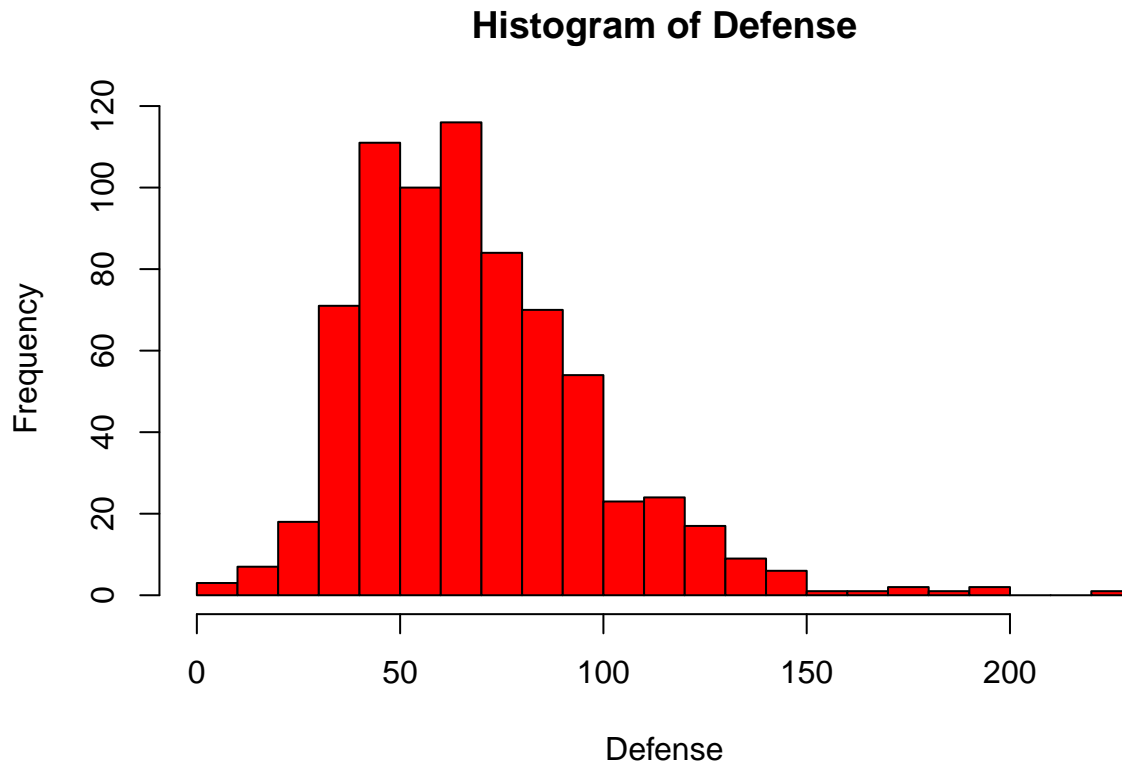
Histograms for Attack and Defense columns

```
hist(fdata$Attack, main="Histogram of Attack", xlab="Attack", col="blue", breaks=20)
```



This graph shows the distribution of the Attack values of the Pokemon. The x-axis represents the Attack values, while the y-axis represents the frequency of each value. The graph shows that the most common Attack values are between 50 and 100, with a peak around 70. It seems like Gaussian distribution.

```
hist(fdata$Defense, main="Histogram of Defense", xlab="Defense", col="red", breaks=20)
```

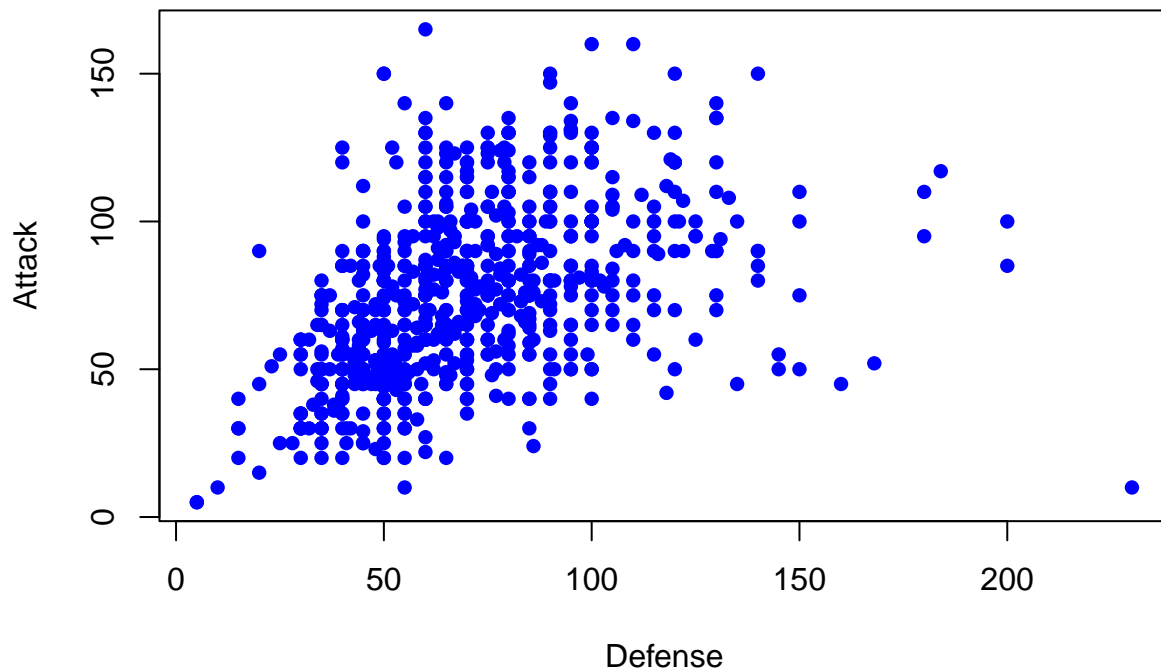


This graph shows the distribution of the Defense values of the Pokemon. The x-axis represents the Defense values, while the y-axis represents the frequency of each value. The graph is in my opinion still similar to the Gaussian distribution, but it is not as clear as in the case of the Attack values.

Scatter plot of Attack and Defense:

```
plot(fdata$Defense, fdata$Attack,
     main="Scatterplot of Attack vs Defense",
     xlab="Defense",
     ylab="Attack",
     pch=16,           # This is a solid circle
     cex=1,           # This makes the points the default size
     col="blue")       # Points are colored blue
```

## Scatterplot of Attack vs Defense



Counting the number of unique types of Pokémon:

```
# Ensure the "Type" column is treated as a factor
fdata$Type <- as.factor(fdata$Type)

# Calculate the number of unique types
num_types <- length(levels(fdata$Type))

# Print the number of unique Pokémon types
print(paste("There are", num_types, "unique types of Pokémon."))
```

```
## [1] "There are 18 unique types of Pokémon."
```

Most and least common Pokémon types:

```
# Create a frequency table of Pokémon types
type_table <- table(fdata$Type)

# Find the index of the most common type
most_common_index <- which.max(type_table)
# Find the index of the least common type
least_common_index <- which.min(type_table)

# Extract the most and least common types using the indices
most_common_type <- names(type_table)[most_common_index]
```

```

least_common_type <- names(type_table)[least_common_index]

# Print the most and least common types and their frequencies
print(paste("The least common type is:", least_common_type, "with", type_table[least_common_index], "occurrences."))

## [1] "The least common type is: Flying with 3 occurrences."

print(paste("The most common type is:", most_common_type, "with", type_table[most_common_index], "occurrences."))

## [1] "The most common type is: Water with 105 occurrences."

Correlation test between Defense and Attack:

# Perform a correlation test between Defense and Attack
correlation_test <- cor.test(fdata$Defense, fdata$Attack)

# Print the summary of the correlation test
print(correlation_test)

##
## Pearson's product-moment correlation
##
## data: fdata$Defense and fdata$Attack
## t = 12.918, df = 719, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
## 0.3728215 0.4914624
## sample estimates:
## cor
## 0.4340218

```