To Perform univariate analysis on a given dataset such as min, max, median, mode,standard deviation, variance, coefficient of skewness and deviation, quantile, kurtosis.

```
data <- read.csv("/content/dataset.csv")
head(data)
```

A data.frame: 6 × 10

	X	open	high	low	close	volume	marke
	<int>	<dbl>	<dbl>	<dbl>	<dbl>	<dbl>	
1	0	112.90000	118.80000	107.14300	115.91000	0	12886
2	1	3.49313	3.69246	3.34606	3.59089	0	622
3	2	115.98000	124.66300	106.64000	112.30000	0	12490

```
str(data)
```

```
'data.frame':   72946 obs. of  10 variables:
 $ X          : int  0 1 2 3 4 5 6 7 8 9 ...
 $ open       : num  112.9 3.49 115.98 3.59 112.25 ...
 $ high       : num  118.8 3.69 124.66 3.78 113.44 ...
 $ low        : num  107.14 3.35 106.64 3.12 97.7 ...
 $ close      : num  115.91 3.59 112.3 3.37 111.5 ...
 $ volume     : num  0 0 0 0 0 0 0 0 0 0 ...
 $ marketCap  : num  1.29e+09 6.23e+07 1.25e+09 5.86e+07 1.24e+09 ...
 $ timestamp  : chr  "2013-05-05T23:59:59.999Z" "2013-05-05T23:59:59.999Z" "2013-05-06T2
 $ crypto_name: chr  "Bitcoin" "Litecoin" "Bitcoin" "Litecoin" ...
 $ date       : chr  "2013-05-05" "2013-05-05" "2013-05-06" "2013-05-06" ...
```

```
summary(data)
```

```
       X              open               high               low
 Min.   :    0   Min.   :    0.00   Min.   :     0.00   Min.   :
0.00
 1st Qu.:18236   1st Qu.:    0.17   1st Qu.:     0.18   1st Qu.:
0.16
 Median :36472   Median :    1.63   Median :     1.72   Median :
1.54
 Mean   :36472   Mean   :  870.19   Mean   :   896.41   Mean   :
844.06
 3rd Qu.:54709   3rd Qu.:   26.07   3rd Qu.:    27.57   3rd Qu.:
24.79
 Max.   :72945   Max.   :67549.74   Max.   :162188.26   Max.
```

```
install.packages('moments')
```

```
Installing package into ‘/usr/local/lib/R/site-library’
(as ‘lib’ is unspecified)
```

```
library(moments)
min_open <- min(data$open)
max_open <- max(data$open)
median_open <- median(data$open)
mode_open <- names(sort(table(data$open), decreasing = TRUE))[1]
sd_open <- sd(data$open)
var_open <- var(data$open)
skewness_open <- skewness(data$open)
kurtosis_open <- kurtosis(data$open)
quantile_open <- quantile(data$open, c(0.25, 0.5, 0.75))

# Print the results for open
cat("Minimum open:", min_open, "\n")
cat("Maximum open:", max_open, "\n")
cat("Median open:", median_open, "\n")
cat("Mode open:", mode_open, "\n")
cat("Standard deviation of open:", sd_open, "\n")
cat("Variance of open:", var_open, "\n")
cat("Skewness of open:", skewness_open, "\n")
cat("Kurtosis of open:", kurtosis_open, "\n")
cat("Quantile of open:", quantile_open, "\n")
```

```
Minimum open: 0
Maximum open: 67549.74
Median open: 1.630666
Mode open: 1
Standard deviation of open: 5231.654
Variance of open: 27370208
Skewness of open: 8.456535
Kurtosis of open: 80.14358
Quantile of open: 0.1679159 1.630666 26.07056
```

```
library(moments)
min_close <- min(data$close)
max_close <- max(data$close)
median_close <- median(data$close)
mode_close <- names(sort(table(data$close), decreasing = TRUE))[1]
sd_close <- sd(data$close)
var_close <- var(data$close)
skewness_close <- skewness(data$close)
kurtosis_close <- kurtosis(data$close)
quantile_close <- quantile(data$close, c(0.25, 0.5, 0.75))

# Print the results for close
cat("Minimum close:", min_close, "\n")
cat("Maximum close:", max_close, "\n")
cat("Median close:", median_close, "\n")
cat("Mode close:", mode_close, "\n")
cat("Standard deviation of close:", sd_close, "\n")
cat("Variance of close:", var_close, "\n")
cat("Skewness of close:", skewness_close, "\n")
cat("Kurtosis of close:", kurtosis_close, "\n")
cat("Quantile of close:", quantile_close, "\n")
```

```
Minimum close: 8.292e-11
Maximum close: 67566.83
Median close: 1.640219
Mode close: 1
Standard deviation of close: 5235.508
Variance of close: 27410545
Skewness of close: 8.448853
Kurtosis of close: 79.9987
Quantile of close: 0.1682982 1.640219 26.25195
```

```
library(moments)
min_high <- min(data$high)
max_high <- max(data$high)
median_high <- median(data$high)
mode_high <- names(sort(table(data$high), decreasing = TRUE))[1]
sd_high <- sd(data$high)
var_high <- var(data$high)
skewness_high <- skewness(data$high)
kurtosis_high <- kurtosis(data$high)
quantile_high <- quantile(data$high, c(0.25, 0.5, 0.75))

# Print the results for high
cat("Minimum high:", min_high, "\n")
cat("Maximum high:", max_high, "\n")
cat("Median high:", median_high, "\n")
cat("Mode high:", mode_high, "\n")
cat("Standard deviation of high:", sd_high, "\n")
cat("Variance of high:", var_high, "\n")
```

```
cat("Skewness of high:", skewness_high, "\n")
cat("Kurtosis of high:", kurtosis_high, "\n")
cat("Quantile of high:", quantile_high, "\n")
```

```
Minimum high: 1.0221e-10
Maximum high: 162188.3
Median high: 1.717542
Mode high: 1
Standard deviation of high: 5398.613
Variance of high: 29145018
Skewness of high: 8.648234
Kurtosis of high: 88.72656
Quantile of high: 0.1767999 1.717542 27.56868
```

```
library(moments)
min_low <- min(data$low)
max_low <- max(data$low)
median_low <- median(data$low)
mode_low <- names(sort(table(data$low), decreasing = TRUE))[1]
sd_low <- sd(data$low)
var_low <- var(data$low)
skewness_low <- skewness(data$low)
kurtosis_low <- kurtosis(data$low)
quantile_low <- quantile(data$low, c(0.25, 0.5, 0.75))

# Print the results for low
cat("Minimum low:", min_low, "\n")
cat("Maximum low:", max_low, "\n")
cat("Median low:", median_low, "\n")
cat("Mode low:", mode_low, "\n")
cat("Standard deviation of low:", sd_low, "\n")
cat("Variance of low:", var_low, "\n")
cat("Skewness of low:", skewness_low, "\n")
cat("Kurtosis of low:", kurtosis_low, "\n")
cat("Quantile of low:", quantile_low, "\n")
```

```
Minimum low: 0
Maximum low: 66458.72
Median low: 1.541486
Mode low: 1
Standard deviation of low: 5079.389
Variance of low: 25800197
Skewness of low: 8.468001
Kurtosis of low: 80.44716
Quantile of low: 0.1586297 1.541486 24.79178
```

```
library(moments)
min_volume <- min(data$volume)
max_volume <- max(data$volume)
median_volume <- median(data$volume)
mode_volume <- names(sort(table(data$volume), decreasing = TRUE))[1]
```

```
sd_volume <- sd(data$volume)
var_volume <- var(data$volume)
skewness_volume <- skewness(data$volume)
kurtosis_volume <- kurtosis(data$volume)
quantile_volume <- quantile(data$volume, c(0.25, 0.5, 0.75))

# Print the results for volume
cat("Minimum volume:", min_volume, "\n")
cat("Maximum volume:", max_volume, "\n")
cat("Median volume:", median_volume, "\n")
cat("Mode volume:", mode_volume, "\n")
cat("Standard deviation of volume:", sd_volume, "\n")
cat("Variance of volume:", var_volume, "\n")
cat("Skewness of volume:", skewness_volume, "\n")
cat("Kurtosis of volume:", kurtosis_volume, "\n")
cat("Quantile of volume:", quantile_volume, "\n")
```

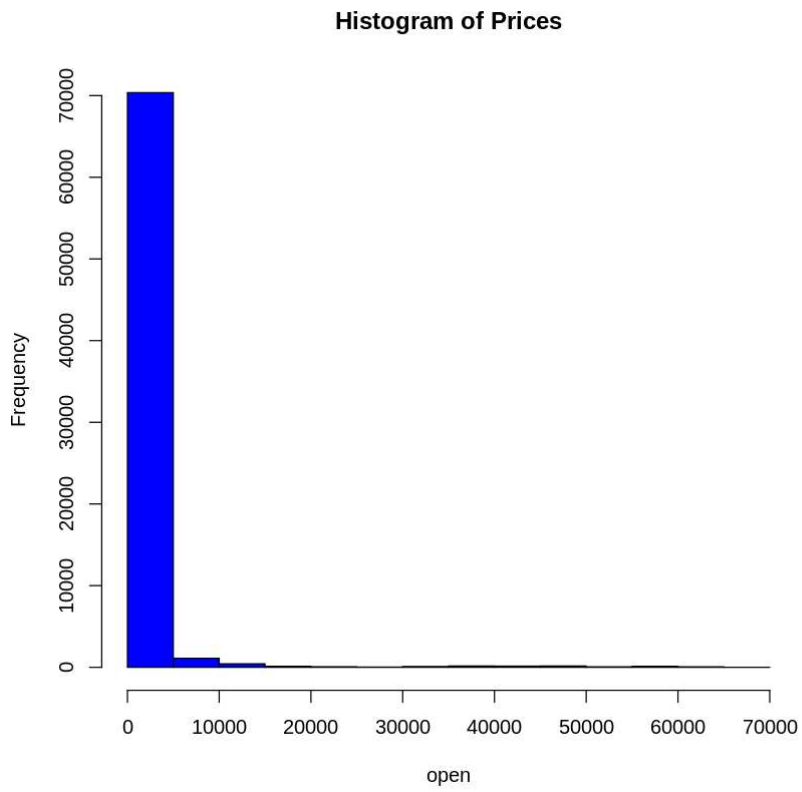
```
Minimum volume: 0
Maximum volume: 350967941479
Median volume: 109875646
Mode volume: 0
Standard deviation of volume: 9617884904
Variance of volume: 9.250371e+19
Skewness of volume: 9.499445
Kurtosis of volume: 139.1811
Quantile of volume: 8320618 109875646 669139847
```

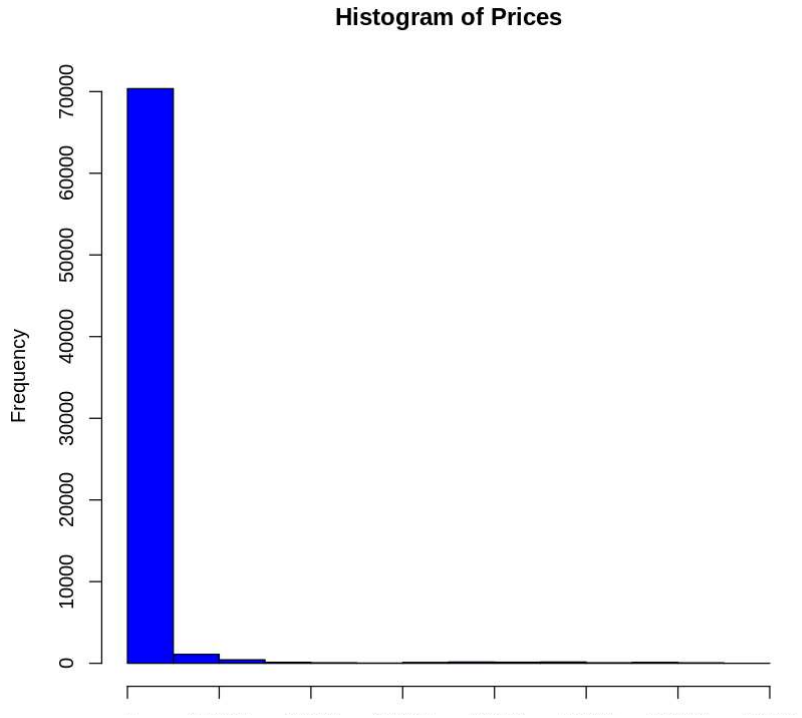
```
library(moments)
min_marketCap <- min(data$marketCap)
max_marketCap <- max(data$marketCap)
median_marketCap <- median(data$marketCap)
mode_marketCap <- names(sort(table(data$marketCap), decreasing = TRUE))[1]
sd_marketCap <- sd(data$marketCap)
var_marketCap <- var(data$marketCap)
skewness_marketCap <- skewness(data$marketCap)
kurtosis_marketCap <- kurtosis(data$marketCap)
quantile_marketCap <- quantile(data$marketCap, c(0.25, 0.5, 0.75))

# Print the results for marketCap
cat("Minimum marketCap:", min_marketCap, "\n")
cat("Maximum marketCap:", max_marketCap, "\n")
cat("Median marketCap:", median_marketCap, "\n")
cat("Mode marketCap:", mode_marketCap, "\n")
cat("Standard deviation of marketCap:", sd_marketCap, "\n")
cat("Variance of marketCap:", var_marketCap, "\n")
cat("Skewness of marketCap:", skewness_marketCap, "\n")
cat("Kurtosis of marketCap:", kurtosis_marketCap, "\n")
cat("Quantile of marketCap:", quantile_marketCap, "\n")
```

```
Minimum marketCap: 0
Maximum marketCap: 1.274831e+12
Median marketCap: 1268539253
```

```
Mode marketCap: 0
Standard deviation of marketCap: 75011591366
Variance of marketCap: 5.626739e+21
Skewness of marketCap: 10.18308
Kurtosis of marketCap: 122.4772
Quantile of marketCap: 186043250 1268539253 5118618336
```

```
#histogram of the price column to visualize the distribution of the data
hist(data$open, main = "Histogram of Prices", xlab = "open" , col = "blue")
hist(data$close, main = "Histogram of Prices", xlab = "close" , col = "blue")
hist(data$high, main = "Histogram of Prices", xlab = "high" , col = "blue")
hist(data$low, main = "Histogram of Prices", xlab = "low" , col = "blue")
hist(data$volume, main = "Histogram of Prices", xlab = "volume" , col = "blue")
```


Histogram of Prices
Frequency
0
10000
20000
30000
40000
50000
60000
70000
open


Histogram of Prices
Frequency
0
10000
20000
30000
40000
50000
60000
70000

```
#boxplot of the price column to see the spread and skewness of the data
boxplot(data$open, main = "Boxplot of Prices", xlab = "Prices")
```