Exploratory Data Analysis of 'faithful' Dataset: Unveiling Patterns in Eruption Durations and Waiting Times

In the provided R code, the focus is on exploring and analyzing the "faithful" dataset, particularly the variables "eruptions" and "waiting." Here's a summary of the analysis conducted:

Data Exploration and Summary:

The code begins by loading necessary packages, setting options, and reading the "faithful" dataset.

Descriptive statistics like mean, median, standard deviation, interquartile range, and range of the "eruptions" variable are calculated.

The presence of missing data is checked, and the mean of "eruptions" with missing values removed is calculated.

The interquartile range (IQR) and boxplot for "eruptions" are created.

The range of "eruptions" is calculated.

Histograms and Visualization:

The code generates histograms for both "eruptions" and "waiting" variables, providing a visual representation of their distributions.

A scatter plot is created to show the relationship between "eruptions" and "waiting."

Skewness and Kurtosis:

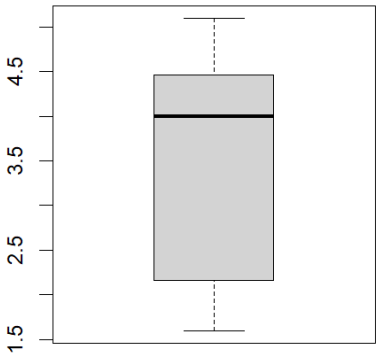
Skewness and kurtosis are discussed as metrics to assess the symmetry and peakedness of a distribution.

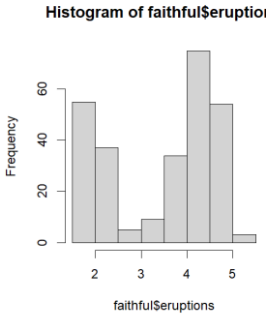
Correlation:

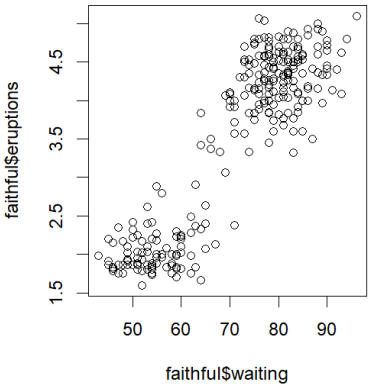
The code calculates the correlation between "eruptions" and "waiting," providing insights into their linear relationship.

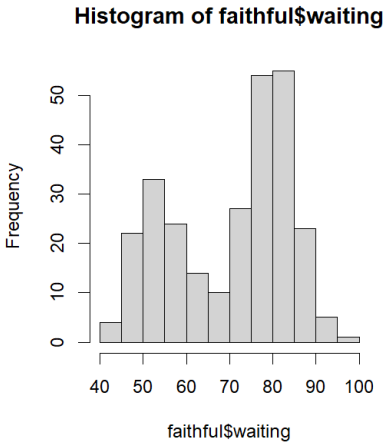
A scatterplot matrix (using GGally::ggpairs) is created to visualize relationships between multiple variables in the dataset.

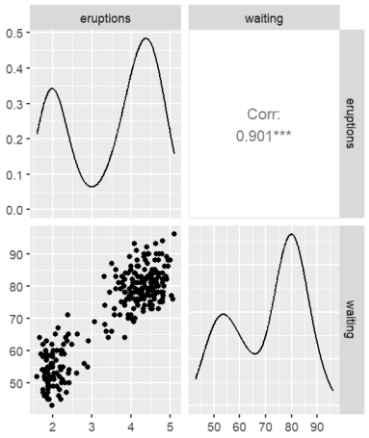
In summary, the analysis involves exploring the statistical properties, distributions, and relationships within the "faithful" dataset, primarily focusing on the variables "eruptions" and "waiting." There is no explicit prediction mentioned in the provided code; rather, it aims to understand and visualize the characteristics of the given data.


4.5
3.5
2.5
1.5


Histogram of faithful$eruptions
Frequency
0
20
40
60
2
3
4
5
faithful$eruptions


faithful$eruptions
1.5
2.5
3.5
4.5
50
60
70
80
90
faithful$waiting


Histogram of faithful$waiting
Frequency
0
10
20
30
40
50
40
50
60
70
80
90
100
faithful$waiting


eruptions
waiting
Corr:
0.901***
eruptions
waiting
0.0
0.1
0.2
0.3
0.4
0.5
50
60
70
80
90
2
3
4
5