

Iris_all.R

SIU850486795

2024-01-19

```
# Iris_all.R
# Correlation for Iris data

# Load necessary libraries
library(Hmisc)

## Loading required package: lattice
## Loading required package: survival
## Loading required package: Formula
## Loading required package: ggplot2

##
## Attaching package: 'Hmisc'

## The following objects are masked from 'package:base':
##
##      format.pval, units

# Read in data set
irisdata <- read.table(header=T,colClasses=c("numeric","numeric"),text="
seplen sepwid petlen petwid
5.1 3.5 1.4 0.2
4.9 3.0 1.4 0.2
4.7 3.2 1.3 0.2
4.6 3.1 1.5 0.2
5.0 3.6 1.4 0.2
5.4 3.9 1.7 0.4
4.6 3.4 1.4 0.3
5.0 3.4 1.5 0.2
4.4 2.9 1.4 0.2
4.9 3.1 1.5 0.1
5.4 3.7 1.5 0.2
4.8 3.4 1.6 0.2
4.8 3.0 1.4 0.1
4.3 3.0 1.1 0.1
5.8 4.0 1.2 0.2
5.7 4.4 1.5 0.4
5.4 3.9 1.3 0.4
5.1 3.5 1.4 0.3
5.7 3.8 1.7 0.3
5.1 3.8 1.5 0.3
5.4 3.4 1.7 0.2
5.1 3.7 1.5 0.4
```

```

4.6 3.6 1.0 0.2
5.1 3.3 1.7 0.5
4.8 3.4 1.9 0.2
5.0 3.0 1.6 0.2
5.0 3.4 1.6 0.4
5.2 3.5 1.5 0.2
5.2 3.4 1.4 0.2
4.7 3.2 1.6 0.2
4.8 3.1 1.6 0.2
5.4 3.4 1.5 0.4
5.2 4.1 1.5 0.1
5.5 4.2 1.4 0.2
4.9 3.1 1.5 0.2
5.0 3.2 1.2 0.2
5.5 3.5 1.3 0.2
4.9 3.6 1.4 0.1
4.4 3.0 1.3 0.2
5.1 3.4 1.5 0.2
5.0 3.5 1.3 0.3
4.5 2.3 1.3 0.3
4.4 3.2 1.3 0.2
5.0 3.5 1.6 0.6
5.1 3.8 1.9 0.4
4.8 3.0 1.4 0.3
5.1 3.8 1.6 0.2
4.6 3.2 1.4 0.2
5.3 3.7 1.5 0.2
5.0 3.3 1.4 0.2
")

```

```

# Print data
irisdata

```

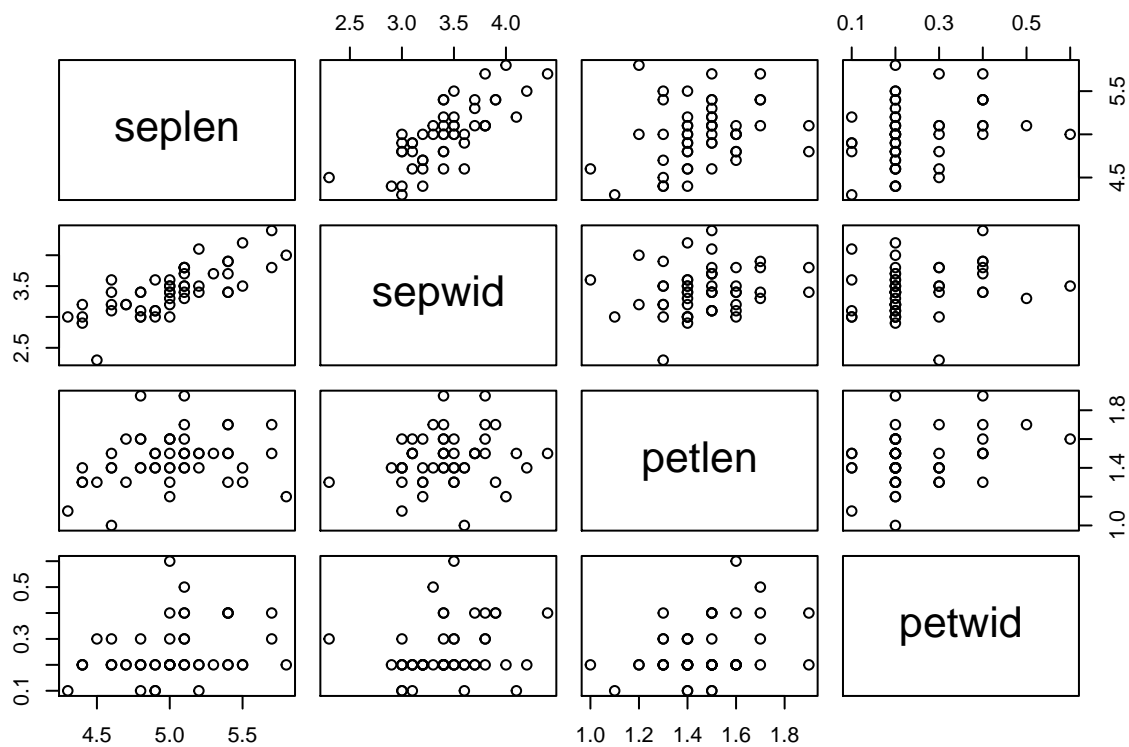
```

##      seplen sepwid petlen petwid
## 1      5.1      3.5      1.4      0.2
## 2      4.9      3.0      1.4      0.2
## 3      4.7      3.2      1.3      0.2
## 4      4.6      3.1      1.5      0.2
## 5      5.0      3.6      1.4      0.2
## 6      5.4      3.9      1.7      0.4
## 7      4.6      3.4      1.4      0.3
## 8      5.0      3.4      1.5      0.2
## 9      4.4      2.9      1.4      0.2
## 10     4.9      3.1      1.5      0.1
## 11     5.4      3.7      1.5      0.2
## 12     4.8      3.4      1.6      0.2
## 13     4.8      3.0      1.4      0.1
## 14     4.3      3.0      1.1      0.1
## 15     5.8      4.0      1.2      0.2
## 16     5.7      4.4      1.5      0.4
## 17     5.4      3.9      1.3      0.4
## 18     5.1      3.5      1.4      0.3
## 19     5.7      3.8      1.7      0.3
## 20     5.1      3.8      1.5      0.3

```

```
## 21    5.4    3.4    1.7    0.2
## 22    5.1    3.7    1.5    0.4
## 23    4.6    3.6    1.0    0.2
## 24    5.1    3.3    1.7    0.5
## 25    4.8    3.4    1.9    0.2
## 26    5.0    3.0    1.6    0.2
## 27    5.0    3.4    1.6    0.4
## 28    5.2    3.5    1.5    0.2
## 29    5.2    3.4    1.4    0.2
## 30    4.7    3.2    1.6    0.2
## 31    4.8    3.1    1.6    0.2
## 32    5.4    3.4    1.5    0.4
## 33    5.2    4.1    1.5    0.1
## 34    5.5    4.2    1.4    0.2
## 35    4.9    3.1    1.5    0.2
## 36    5.0    3.2    1.2    0.2
## 37    5.5    3.5    1.3    0.2
## 38    4.9    3.6    1.4    0.1
## 39    4.4    3.0    1.3    0.2
## 40    5.1    3.4    1.5    0.2
## 41    5.0    3.5    1.3    0.3
## 42    4.5    2.3    1.3    0.3
## 43    4.4    3.2    1.3    0.2
## 44    5.0    3.5    1.6    0.6
## 45    5.1    3.8    1.9    0.4
## 46    4.8    3.0    1.4    0.3
## 47    5.1    3.8    1.6    0.2
## 48    4.6    3.2    1.4    0.2
## 49    5.3    3.7    1.5    0.2
## 50    5.0    3.3    1.4    0.2
```

```
# Scatterplot matrix
plot(irisdata)
```



```
# Pearson correlation coefficients
# Convert data frame to matrix using as.matrix
rp <- rcorr(as.matrix(irisdata))
print(rp$r,digits=5)
```

```
##          seplen  sepwid  petlen  petwid
## seplen  1.00000  0.74255  0.26718  0.27810
## sepwid  0.74255  1.00000  0.17770  0.23275
## petlen  0.26718  0.17770  1.00000  0.33163
## petwid  0.27810  0.23275  0.33163  1.00000
```

```
print(rp$P,digits=5)
```

```
##          seplen    sepwid  petlen  petwid
## seplen      NA  6.7098e-10  0.060698  0.050526
## sepwid  6.7098e-10      NA  0.216979  0.103821
## petlen  6.0698e-02  2.1698e-01      NA  0.018639
## petwid  5.0526e-02  1.0382e-01  0.018639      NA
```