Exercise on R Markdown

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Description This famous (Fisher's or Anderson's) iris data set gives the measurements in centimeters of the variables sepal length and width and petal length and width, respectively, for 50 flowers from each of 3 species of iris. The species are Iris setosa, versicolor, and virginica.

iris is a data frame with 150 cases (rows) and 5 variables (columns) named Sepal.Length, Sepal.Width, Petal.Length, Petal.Width, and Species.

```
setwd("F:/INTERMATH/intermath 2021-2023/spain/DV/R markdown execise")
library(datasets)
iris
```

```
##     Sepal.Length Sepal.Width Petal.Length Petal.Width    Species
## 1            5.1         3.5          1.4         0.2     setosa
## 2            4.9         3.0          1.4         0.2     setosa
## 3            4.7         3.2          1.3         0.2     setosa
## 4            4.6         3.1          1.5         0.2     setosa
## 5            5.0         3.6          1.4         0.2     setosa
## 6            5.4         3.9          1.7         0.4     setosa
## 7            4.6         3.4          1.4         0.3     setosa
## 8            5.0         3.4          1.5         0.2     setosa
## 9            4.4         2.9          1.4         0.2     setosa
## 10           4.9         3.1          1.5         0.1     setosa
## 11           5.4         3.7          1.5         0.2     setosa
## 12           4.8         3.4          1.6         0.2     setosa
## 13           4.8         3.0          1.4         0.1     setosa
## 14           4.3         3.0          1.1         0.1     setosa
## 15           5.8         4.0          1.2         0.2     setosa
## 16           5.7         4.4          1.5         0.4     setosa
## 17           5.4         3.9          1.3         0.4     setosa
## 18           5.1         3.5          1.4         0.3     setosa
## 19           5.7         3.8          1.7         0.3     setosa
## 20           5.1         3.8          1.5         0.3     setosa
## 21           5.4         3.4          1.7         0.2     setosa
## 22           5.1         3.7          1.5         0.4     setosa
## 23           4.6         3.6          1.0         0.2     setosa
## 24           5.1         3.3          1.7         0.5     setosa
## 25           4.8         3.4          1.9         0.2     setosa
## 26           5.0         3.0          1.6         0.2     setosa
## 27           5.0         3.4          1.6         0.4     setosa
## 28           5.2         3.5          1.5         0.2     setosa
## 29           5.2         3.4          1.4         0.2     setosa
## 30           4.7         3.2          1.6         0.2     setosa
```

```
## 31          4.8         3.1          1.6         0.2     setosa
## 32          5.4         3.4          1.5         0.4     setosa
## 33          5.2         4.1          1.5         0.1     setosa
## 34          5.5         4.2          1.4         0.2     setosa
## 35          4.9         3.1          1.5         0.2     setosa
## 36          5.0         3.2          1.2         0.2     setosa
## 37          5.5         3.5          1.3         0.2     setosa
## 38          4.9         3.6          1.4         0.1     setosa
## 39          4.4         3.0          1.3         0.2     setosa
## 40          5.1         3.4          1.5         0.2     setosa
## 41          5.0         3.5          1.3         0.3     setosa
## 42          4.5         2.3          1.3         0.3     setosa
## 43          4.4         3.2          1.3         0.2     setosa
## 44          5.0         3.5          1.6         0.6     setosa
## 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
## 51          7.0         3.2          4.7         1.4 versicolor
## 52          6.4         3.2          4.5         1.5 versicolor
## 53          6.9         3.1          4.9         1.5 versicolor
## 54          5.5         2.3          4.0         1.3 versicolor
## 55          6.5         2.8          4.6         1.5 versicolor
## 56          5.7         2.8          4.5         1.3 versicolor
## 57          6.3         3.3          4.7         1.6 versicolor
## 58          4.9         2.4          3.3         1.0 versicolor
## 59          6.6         2.9          4.6         1.3 versicolor
## 60          5.2         2.7          3.9         1.4 versicolor
## 61          5.0         2.0          3.5         1.0 versicolor
## 62          5.9         3.0          4.2         1.5 versicolor
## 63          6.0         2.2          4.0         1.0 versicolor
## 64          6.1         2.9          4.7         1.4 versicolor
## 65          5.6         2.9          3.6         1.3 versicolor
## 66          6.7         3.1          4.4         1.4 versicolor
## 67          5.6         3.0          4.5         1.5 versicolor
## 68          5.8         2.7          4.1         1.0 versicolor
## 69          6.2         2.2          4.5         1.5 versicolor
## 70          5.6         2.5          3.9         1.1 versicolor
## 71          5.9         3.2          4.8         1.8 versicolor
## 72          6.1         2.8          4.0         1.3 versicolor
## 73          6.3         2.5          4.9         1.5 versicolor
## 74          6.1         2.8          4.7         1.2 versicolor
## 75          6.4         2.9          4.3         1.3 versicolor
## 76          6.6         3.0          4.4         1.4 versicolor
## 77          6.8         2.8          4.8         1.4 versicolor
## 78          6.7         3.0          5.0         1.7 versicolor
## 79          6.0         2.9          4.5         1.5 versicolor
## 80          5.7         2.6          3.5         1.0 versicolor
## 81          5.5         2.4          3.8         1.1 versicolor
## 82          5.5         2.4          3.7         1.0 versicolor
## 83          5.8         2.7          3.9         1.2 versicolor
## 84          6.0         2.7          5.1         1.6 versicolor
```

```
## 85          5.4         3.0          4.5         1.5 versicolor
## 86          6.0         3.4          4.5         1.6 versicolor
## 87          6.7         3.1          4.7         1.5 versicolor
## 88          6.3         2.3          4.4         1.3 versicolor
## 89          5.6         3.0          4.1         1.3 versicolor
## 90          5.5         2.5          4.0         1.3 versicolor
## 91          5.5         2.6          4.4         1.2 versicolor
## 92          6.1         3.0          4.6         1.4 versicolor
## 93          5.8         2.6          4.0         1.2 versicolor
## 94          5.0         2.3          3.3         1.0 versicolor
## 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
## 101         6.3         3.3          6.0         2.5  virginica
## 102         5.8         2.7          5.1         1.9  virginica
## 103         7.1         3.0          5.9         2.1  virginica
## 104         6.3         2.9          5.6         1.8  virginica
## 105         6.5         3.0          5.8         2.2  virginica
## 106         7.6         3.0          6.6         2.1  virginica
## 107         4.9         2.5          4.5         1.7  virginica
## 108         7.3         2.9          6.3         1.8  virginica
## 109         6.7         2.5          5.8         1.8  virginica
## 110         7.2         3.6          6.1         2.5  virginica
## 111         6.5         3.2          5.1         2.0  virginica
## 112         6.4         2.7          5.3         1.9  virginica
## 113         6.8         3.0          5.5         2.1  virginica
## 114         5.7         2.5          5.0         2.0  virginica
## 115         5.8         2.8          5.1         2.4  virginica
## 116         6.4         3.2          5.3         2.3  virginica
## 117         6.5         3.0          5.5         1.8  virginica
## 118         7.7         3.8          6.7         2.2  virginica
## 119         7.7         2.6          6.9         2.3  virginica
## 120         6.0         2.2          5.0         1.5  virginica
## 121         6.9         3.2          5.7         2.3  virginica
## 122         5.6         2.8          4.9         2.0  virginica
## 123         7.7         2.8          6.7         2.0  virginica
## 124         6.3         2.7          4.9         1.8  virginica
## 125         6.7         3.3          5.7         2.1  virginica
## 126         7.2         3.2          6.0         1.8  virginica
## 127         6.2         2.8          4.8         1.8  virginica
## 128         6.1         3.0          4.9         1.8  virginica
## 129         6.4         2.8          5.6         2.1  virginica
## 130         7.2         3.0          5.8         1.6  virginica
## 131         7.4         2.8          6.1         1.9  virginica
## 132         7.9         3.8          6.4         2.0  virginica
## 133         6.4         2.8          5.6         2.2  virginica
## 134         6.3         2.8          5.1         1.5  virginica
## 135         6.1         2.6          5.6         1.4  virginica
## 136         7.7         3.0          6.1         2.3  virginica
## 137         6.3         3.4          5.6         2.4  virginica
## 138         6.4         3.1          5.5         1.8  virginica
```

```
## 139          6.0         3.0          4.8         1.8  virginica
## 140          6.9         3.1          5.4         2.1  virginica
## 141          6.7         3.1          5.6         2.4  virginica
## 142          6.9         3.1          5.1         2.3  virginica
## 143          5.8         2.7          5.1         1.9  virginica
## 144          6.8         3.2          5.9         2.3  virginica
## 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
```

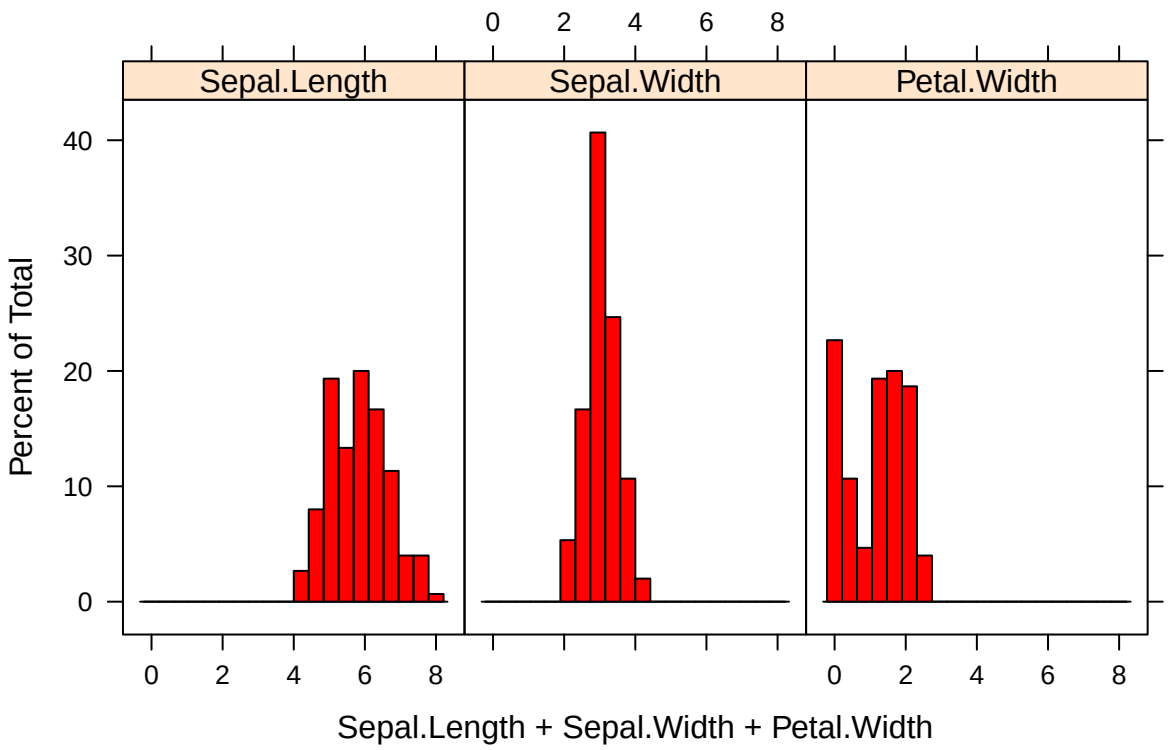
```
iris1<- iris[,c(1,2,3,5)]
summary(iris1)
```

```
##   Sepal.Length    Sepal.Width     Petal.Length        Species
##  Min.   :4.300   Min.   :2.000   Min.   :1.000   setosa    :50
##  1st Qu.:5.100   1st Qu.:2.800   1st Qu.:1.600   versicolor:50
##  Median :5.800   Median :3.000   Median :4.350   virginica :50
##  Mean   :5.843   Mean   :3.057   Mean   :3.758
##  3rd Qu.:6.400   3rd Qu.:3.300   3rd Qu.:5.100
##  Max.   :7.900   Max.   :4.400   Max.   :6.900
```

```
table(iris1$Species)
```

```
##
##     setosa versicolor  virginica
##         50         50         50
```

```
library(lattice)
histogram(~ Sepal.Length+ Sepal.Width  + Petal.Width ,
          data=iris,n=20,
          main= 'Different histograms in a panel', col= "red")
```




```
iris2<- iris[,c(1,2)]
iris2
```

```
##     Sepal.Length Sepal.Width
## 1            5.1         3.5
## 2            4.9         3.0
## 3            4.7         3.2
## 4            4.6         3.1
## 5            5.0         3.6
## 6            5.4         3.9
## 7            4.6         3.4
## 8            5.0         3.4
## 9            4.4         2.9
## 10           4.9         3.1
## 11           5.4         3.7
## 12           4.8         3.4
## 13           4.8         3.0
## 14           4.3         3.0
## 15           5.8         4.0
## 16           5.7         4.4
## 17           5.4         3.9
## 18           5.1         3.5
## 19           5.7         3.8
## 20           5.1         3.8
## 21           5.4         3.4
## 22           5.1         3.7
```

```
## 23          4.6         3.6
## 24          5.1         3.3
## 25          4.8         3.4
## 26          5.0         3.0
## 27          5.0         3.4
## 28          5.2         3.5
## 29          5.2         3.4
## 30          4.7         3.2
## 31          4.8         3.1
## 32          5.4         3.4
## 33          5.2         4.1
## 34          5.5         4.2
## 35          4.9         3.1
## 36          5.0         3.2
## 37          5.5         3.5
## 38          4.9         3.6
## 39          4.4         3.0
## 40          5.1         3.4
## 41          5.0         3.5
## 42          4.5         2.3
## 43          4.4         3.2
## 44          5.0         3.5
## 45          5.1         3.8
## 46          4.8         3.0
## 47          5.1         3.8
## 48          4.6         3.2
## 49          5.3         3.7
## 50          5.0         3.3
## 51          7.0         3.2
## 52          6.4         3.2
## 53          6.9         3.1
## 54          5.5         2.3
## 55          6.5         2.8
## 56          5.7         2.8
## 57          6.3         3.3
## 58          4.9         2.4
## 59          6.6         2.9
## 60          5.2         2.7
## 61          5.0         2.0
## 62          5.9         3.0
## 63          6.0         2.2
## 64          6.1         2.9
## 65          5.6         2.9
## 66          6.7         3.1
## 67          5.6         3.0
## 68          5.8         2.7
## 69          6.2         2.2
## 70          5.6         2.5
## 71          5.9         3.2
## 72          6.1         2.8
## 73          6.3         2.5
## 74          6.1         2.8
## 75          6.4         2.9
## 76          6.6         3.0
```

```
## 77          6.8         2.8
## 78          6.7         3.0
## 79          6.0         2.9
## 80          5.7         2.6
## 81          5.5         2.4
## 82          5.5         2.4
## 83          5.8         2.7
## 84          6.0         2.7
## 85          5.4         3.0
## 86          6.0         3.4
## 87          6.7         3.1
## 88          6.3         2.3
## 89          5.6         3.0
## 90          5.5         2.5
## 91          5.5         2.6
## 92          6.1         3.0
## 93          5.8         2.6
## 94          5.0         2.3
## 95          5.6         2.7
## 96          5.7         3.0
## 97          5.7         2.9
## 98          6.2         2.9
## 99          5.1         2.5
## 100         5.7         2.8
## 101         6.3         3.3
## 102         5.8         2.7
## 103         7.1         3.0
## 104         6.3         2.9
## 105         6.5         3.0
## 106         7.6         3.0
## 107         4.9         2.5
## 108         7.3         2.9
## 109         6.7         2.5
## 110         7.2         3.6
## 111         6.5         3.2
## 112         6.4         2.7
## 113         6.8         3.0
## 114         5.7         2.5
## 115         5.8         2.8
## 116         6.4         3.2
## 117         6.5         3.0
## 118         7.7         3.8
## 119         7.7         2.6
## 120         6.0         2.2
## 121         6.9         3.2
## 122         5.6         2.8
## 123         7.7         2.8
## 124         6.3         2.7
## 125         6.7         3.3
## 126         7.2         3.2
## 127         6.2         2.8
## 128         6.1         3.0
## 129         6.4         2.8
## 130         7.2         3.0
```

```
## 131          7.4         2.8
## 132          7.9         3.8
## 133          6.4         2.8
## 134          6.3         2.8
## 135          6.1         2.6
## 136          7.7         3.0
## 137          6.3         3.4
## 138          6.4         3.1
## 139          6.0         3.0
## 140          6.9         3.1
## 141          6.7         3.1
## 142          6.9         3.1
## 143          5.8         2.7
## 144          6.8         3.2
## 145          6.7         3.3
## 146          6.7         3.0
## 147          6.3         2.5
## 148          6.5         3.0
## 149          6.2         3.4
## 150          5.9         3.0
```

```
regresn=lm(Sepal.Width ~ Sepal.Length,data= iris2)
regresn
```

```
##
## Call:
## lm(formula = Sepal.Width ~ Sepal.Length, data = iris2)
##
## Coefficients:
##  (Intercept)  Sepal.Length
##      3.41895      -0.06188
```

```
summary(regresn)
```

```
##
## Call:
## lm(formula = Sepal.Width ~ Sepal.Length, data = iris2)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.1095 -0.2454 -0.0167  0.2763  1.3338
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   3.41895    0.25356   13.48   <2e-16 ***
## Sepal.Length -0.06188    0.04297   -1.44    0.152
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4343 on 148 degrees of freedom
## Multiple R-squared:  0.01382,    Adjusted R-squared:  0.007159
## F-statistic: 2.074 on 1 and 148 DF,  p-value: 0.1519
```

```
library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 4.2.2
```

```
qplot(Sepal.Length,Sepal.Width, data = iris2,
      geom= "point")+ geom_smooth(method= "lm")
```

```
## Warning: `qplot()` was deprecated in ggplot2 3.4.0.
```

```
## `geom_smooth()` using formula = 'y ~ x'
```