Ezra-_lab_2.R

Student

2021-07-21

```
#task1
MyIris<- iris
#task2
help("iris")
```

```
## starting httpd help server ... done
```

```
#task3
summary(MyIris)
```

```
##   Sepal.Length    Sepal.Width     Petal.Length    Petal.Width
##  Min.   :4.300   Min.   :2.000   Min.   :1.000   Min.   :0.100
##  1st Qu.:5.100   1st Qu.:2.800   1st Qu.:1.600   1st Qu.:0.300
##  Median :5.800   Median :3.000   Median :4.350   Median :1.300
##  Mean   :5.843   Mean   :3.057   Mean   :3.758   Mean   :1.199
##  3rd Qu.:6.400   3rd Qu.:3.300   3rd Qu.:5.100   3rd Qu.:1.800
##  Max.   :7.900   Max.   :4.400   Max.   :6.900   Max.   :2.500
##        Species
##  setosa    :50
##  versicolor:50
##  virginica :50
##
##
##
```

```
#task4
MyIris$Sepal.Length
```

```
##  [1] 5.1 4.9 4.7 4.6 5.0 5.4 4.6 5.0 4.4 4.9 5.4 4.8 4.8 4.3 5.8 5.7 5.4 5.1
## [19] 5.7 5.1 5.4 5.1 4.6 5.1 4.8 5.0 5.0 5.2 5.2 4.7 4.8 5.4 5.2 5.5 4.9 5.0
## [37] 5.5 4.9 4.4 5.1 5.0 4.5 4.4 5.0 5.1 4.8 5.1 4.6 5.3 5.0 7.0 6.4 6.9 5.5
## [55] 6.5 5.7 6.3 4.9 6.6 5.2 5.0 5.9 6.0 6.1 5.6 6.7 5.6 5.8 6.2 5.6 5.9 6.1
## [73] 6.3 6.1 6.4 6.6 6.8 6.7 6.0 5.7 5.5 5.5 5.8 6.0 5.4 6.0 6.7 6.3 5.6 5.5
## [91] 5.5 6.1 5.8 5.0 5.6 5.7 5.7 6.2 5.1 5.7 6.3 5.8 7.1 6.3 6.5 7.6 4.9 7.3
## [109] 6.7 7.2 6.5 6.4 6.8 5.7 5.8 6.4 6.5 7.7 7.7 6.0 6.9 5.6 7.7 6.3 6.7 7.2
## [127] 6.2 6.1 6.4 7.2 7.4 7.9 6.4 6.3 6.1 7.7 6.3 6.4 6.0 6.9 6.7 6.9 5.8 6.8
## [145] 6.7 6.7 6.3 6.5 6.2 5.9
```

```
#task5
sort(MyIris$Sepal.Length)
```

```
##   [1] 4.3 4.4 4.4 4.4 4.4 4.5 4.6 4.6 4.6 4.6 4.7 4.7 4.8 4.8 4.8 4.8 4.8 4.9 4.9
##  [19] 4.9 4.9 4.9 4.9 4.9 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.1 5.1 5.1 5.1
##  [37] 5.1 5.1 5.1 5.1 5.1 5.2 5.2 5.2 5.2 5.3 5.4 5.4 5.4 5.4 5.4 5.5 5.5 5.5 5.5
##  [55] 5.5 5.5 5.5 5.5 5.5 5.6 5.6 5.6 5.6 5.6 5.6 5.7 5.7 5.7 5.7 5.7 5.7 5.7 5.7
##  [73] 5.7 5.8 5.8 5.8 5.8 5.8 5.8 5.8 5.9 5.9 5.9 6.0 6.0 6.0 6.0 6.0 6.0 6.1 6.1
##  [91] 6.1 6.1 6.1 6.1 6.1 6.2 6.2 6.2 6.2 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3
## [109] 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.5 6.5 6.5 6.5 6.5 6.6 6.6 6.7 6.7 6.7 6.7
## [127] 6.7 6.7 6.7 6.7 6.7 6.8 6.8 6.8 6.9 6.9 6.9 6.9 7.0 7.1 7.2 7.2 7.2 7.3 7.4
## [145] 7.6 7.7 7.7 7.7 7.7 7.9
```

```
#task6
order(MyIris$Sepal.Length)
```

```
##   [1]  14   9  39  43  42   4   7  23  48   3  30  12  13  25  31  46   2  10
##  [19]  35  38  58 107   5   8  26  27  36  41  44  50  61  94   1  18  20  22
##  [37]  24  40  45  47  99  28  29  33  60  49   6  11  17  21  32  85  34  37
##  [55]  54  81  82  90  91  65  67  70  89  95 122  16  19  56  80  96  97 100
##  [73] 114  15  68  83  93 102 115 143  62  71 150  63  79  84  86 120 139  64
##  [91]  72  74  92 128 135  69  98 127 149  57  73  88 101 104 124 134 137 147
## [109]  52  75 112 116 129 133 138  55 105 111 117 148  59  76  66  78  87 109
## [127] 125 141 145 146  77 113 144  53 121 140 142  51 103 110 126 130 108 131
## [145] 106 118 119 123 136 132
```

```
#task7
#sort lists the numbers from lowest to highest and
#order lists the index of the numbers from lowest to
#highest
#task8
sortedDF <- data.frame(order(MyIris$Sepal.Length),order(MyIris$Sepal.Width),order(MyIris$Petal.Length),order(MyIris$Petal.Width),MyIris$Species)
#task9
View(sortedDF)
#task10
help("scale")
#Scaling will scale and Center the dataframe, centering will subtract
#a specific value from each number in a column and that value will be
#different for each column, you can either set center equal to a
#vector the same length as there are columns which will subtract the
#first number in the vector from everything in the first Column the
#second number in the vector from every number in the second column
#and so on, or you can set it equal to true which will subtract the
#mean of each column from that column, finally if it's set to
#false then no centering is done, scaling will divide each number
#in the column by a specific value and similarly each value will be
#different for each column, in the same way if you set it equal to
#a vector the same length as there are columns those will be the
#numbers it for each number in the column with the first number in
#the vector going for the First Column and the second number going
#for the second column and so on, otherwise if centering is true then
#it will divide each column by the standard deviation, and if centering
#is false then it will divide by the root mean Square, similarly to centering
#if it is set to false the no scaling be done
#task11
scale(MyIris$Sepal.Length,center=0,scale = T)
```

```
##             [,1]
##   [1,] 0.8613268
##   [2,] 0.8275493
##   [3,] 0.7937718
##   [4,] 0.7768830
##   [5,] 0.8444380
##   [6,] 0.9119931
##   [7,] 0.7768830
##   [8,] 0.8444380
##   [9,] 0.7431055
##  [10,] 0.8275493
##  [11,] 0.9119931
##  [12,] 0.8106605
##  [13,] 0.8106605
##  [14,] 0.7262167
##  [15,] 0.9795481
##  [16,] 0.9626594
##  [17,] 0.9119931
##  [18,] 0.8613268
##  [19,] 0.9626594
##  [20,] 0.8613268
##  [21,] 0.9119931
##  [22,] 0.8613268
##  [23,] 0.7768830
##  [24,] 0.8613268
##  [25,] 0.8106605
##  [26,] 0.8444380
##  [27,] 0.8444380
##  [28,] 0.8782156
##  [29,] 0.8782156
##  [30,] 0.7937718
##  [31,] 0.8106605
##  [32,] 0.9119931
##  [33,] 0.8782156
##  [34,] 0.9288818
##  [35,] 0.8275493
##  [36,] 0.8444380
##  [37,] 0.9288818
##  [38,] 0.8275493
##  [39,] 0.7431055
##  [40,] 0.8613268
##  [41,] 0.8444380
##  [42,] 0.7599942
##  [43,] 0.7431055
##  [44,] 0.8444380
##  [45,] 0.8613268
##  [46,] 0.8106605
##  [47,] 0.8613268
##  [48,] 0.7768830
##  [49,] 0.8951043
##  [50,] 0.8444380
##  [51,] 1.1822133
##  [52,] 1.0808807
##  [53,] 1.1653245
##  [54,] 0.9288818
##  [55,] 1.0977695
##  [56,] 0.9626594
##  [57,] 1.0639919
##  [58,] 0.8275493
##  [59,] 1.1146582
##  [60,] 0.8782156
##  [61,] 0.8444380
##  [62,] 0.9964369
##  [63,] 1.0133256
##  [64,] 1.0302144
##  [65,] 0.9457706
##  [66,] 1.1315470
##  [67,] 0.9457706
##  [68,] 0.9795481
##  [69,] 1.0471032
##  [70,] 0.9457706
##  [71,] 0.9964369
##  [72,] 1.0302144
##  [73,] 1.0639919
##  [74,] 1.0302144
##  [75,] 1.0808807
##  [76,] 1.1146582
##  [77,] 1.1484357
##  [78,] 1.1315470
##  [79,] 1.0133256
##  [80,] 0.9626594
##  [81,] 0.9288818
##  [82,] 0.9288818
##  [83,] 0.9795481
##  [84,] 1.0133256
##  [85,] 0.9119931
##  [86,] 1.0133256
##  [87,] 1.1315470
##  [88,] 1.0639919
##  [89,] 0.9457706
##  [90,] 0.9288818
##  [91,] 0.9288818
##  [92,] 1.0302144
##  [93,] 0.9795481
##  [94,] 0.8444380
##  [95,] 0.9457706
##  [96,] 0.9626594
##  [97,] 0.9626594
##  [98,] 1.0471032
##  [99,] 0.8613268
## [100,] 0.9626594
## [101,] 1.0639919
## [102,] 0.9795481
## [103,] 1.1991020
## [104,] 1.0639919
## [105,] 1.0977695
## [106,] 1.2835458
## [107,] 0.8275493
## [108,] 1.2328795
## [109,] 1.1315470
## [110,] 1.2159908
## [111,] 1.0977695
## [112,] 1.0808807
## [113,] 1.1484357
## [114,] 0.9626594
## [115,] 0.9795481
## [116,] 1.0808807
## [117,] 1.0977695
## [118,] 1.3004346
## [119,] 1.3004346
## [120,] 1.0133256
## [121,] 1.1653245
## [122,] 0.9457706
## [123,] 1.3004346
## [124,] 1.0639919
## [125,] 1.1315470
## [126,] 1.2159908
## [127,] 1.0471032
## [128,] 1.0302144
## [129,] 1.0808807
## [130,] 1.2159908
## [131,] 1.2497683
## [132,] 1.3342121
## [133,] 1.0808807
## [134,] 1.0639919
## [135,] 1.0302144
## [136,] 1.3004346
## [137,] 1.0639919
## [138,] 1.0808807
## [139,] 1.0133256
## [140,] 1.1653245
## [141,] 1.1315470
## [142,] 1.1653245
## [143,] 0.9795481
## [144,] 1.1484357
## [145,] 1.1315470
## [146,] 1.1315470
## [147,] 1.0639919
## [148,] 1.0977695
## [149,] 1.0471032
## [150,] 0.9964369
## attr(,"scaled:center")
## [1] 0
## attr(,"scaled:scale")
## [1] 5.921098
```

```
#task12
scaledSL <- scale(MyIris$Sepal.Length,center=0,scale = T)
#task13
scaledSW <- scale(MyIris$Sepal.Width,center=0,scale = T)
scaledPL <- scale(MyIris$Petal.Length,center=0,scale = T)
scaledPW <- scale(MyIris$Petal.Width,center=0,scale = T)
View(scaledSL)
View(scaledSW)
View(scaledPL)
View(scaledPW)
#task14
MyIris$scaledsum <- scaledSL + scaledSW + scaledPL + scaledPW
View(MyIris$scaledsum)
#task15
sortedDF <- data.frame(order(MyIris$Sepal.Length),order(MyIris$Sepal.Width),order(MyIris$Petal.Length),order(MyIris$Petal.Width),MyIris$Species,order(MyIris$scaledsum))
View(sortedDF)
```