

Homework 1

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1. Use the in-built dataset, `iris`, for this problem. Write code to:

a) Get number of rows (Hint: `nrow`)

```
nrow(iris)
```

```
## [1] 150
```

b) Get number of columns (Hint: `ncol`)

```
ncol(iris)
```

```
## [1] 5
```

c) Show first 10 rows

```
iris$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
```

d) Show column `Sepal.Length`

```
length(iris$Sepal.Length)
```

```
## [1] 150
```

e) Calculate the mean `Sepal.Length`?

```
mean(iris$Sepal.Length)
```

```
## [1] 5.843333
```

f) Show all rows where Sepal.Length > 7.6

```
iris[iris$Sepal.Length > 7.6,]
```

```
##      Sepal.Length Sepal.Width Petal.Length Petal.Width  Species
## 118           7.7         3.8          6.7         2.2 virginica
## 119           7.7         2.6          6.9         2.3 virginica
## 123           7.7         2.8          6.7         2.0 virginica
## 132           7.9         3.8          6.4         2.0 virginica
## 136           7.7         3.0          6.1         2.3 virginica
```

i) What are the row indexes where Sepal.Length > 7.6? (Hint: which)

```
which(iris$Sepal.Length > 7.6)
```

```
## [1] 118 119 123 132 136
```

g) Show all rows where Species is "setosa"

```
iris[iris$Species == "setosa",]
```

```
##      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
```

h) Show all rows where Sepal.Length > 3.0 and Species is “setosa”

```
iris[iris$Species == "setosa" & iris$Sepal.Length > 3.0,]
```

```
##      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
```

i) Get the largest value of Sepal.Length

```
max(iris$Sepal.Length)
```

```
## [1] 7.9
```

i) Get the row index that contains this value

```
iris[which.max(iris$Sepal.Length),]
```

```
##      Sepal.Length Sepal.Width Petal.Length Petal.Width  Species
## 132          7.9         3.8         6.4          2  virginica
```

j) What Species corresponds to this largest Sepal.Length?

```
iris[which.max(iris$Sepal.Length),]$Species
```

```
## [1] virginica
## Levels: setosa versicolor virginica
```

2. Consider the answer posted to Quora.com to “Why is R great for Data Science?”. Answer one of the following questions.

The author lists 5 parts of the R ecosystem, the 5th being “community”. Write 4-5 sentences about any one online community where members discuss R. (Include the URL, how active is the community, what types of people post here, how “friendly” it is to newcomers, etc.)

One community I have found was the RStudio community forums. It allows users to help each other and everyone seems very neutral and it was very supportive. I also looked at some of these post when I was playing around a bit with R. The forums are also very organized with its own tags.(<https://community.rstudio.com/>)