Reading Data From TXT|CSV Files: R Base Functions

In this article, you'll learn how to **import data** from **.txt** (tab-separated values) and **.csv** (comma-separated values) file formats into **R**.

R base functions for importing data

The R base function **read.table**() is a general function that can be used to read a file in table format. The data will be imported as a [data frame](#).

Note that, depending on the format of your file, several variants of **read.table**() are available to make your life easier, including **read.csv**(), **read.csv2**(), **read.delim**() and **read.delim2**().

- **read.csv**(): for reading **"comma separated value"** files (".csv").
- **read.csv2**(): variant used in countries that use a comma "," as decimal point and a semicolon ";" as field separators.
- **read.delim**(): for reading *"tab-separated value"* files (".txt"). By default, point (".") is used as decimal points.
- **read.delim2**(): for reading *"tab-separated value"* files (".txt"). By default, comma (",") is used as decimal points.

The simplified format of these functions are, as follow:

```
read.table(file, header = FALSE, sep = "", dec = ".")

read.csv(file, header = TRUE, sep = ",", dec = ".", ...)


read.csv2(file, header = TRUE, sep = ";", dec = ",", ...)

read.delim(file, header = TRUE, sep = "\t", dec = ".", ...)
read.delim2(file, header = TRUE, sep = "\t", dec = ",",
...)
```

- **file**: the path to the file containing the data to be imported into R.
- **sep**: the field separator character. "\t" is used for tab-delimited file.
- **header**: logical value. If TRUE, **read.table()** assumes that your file has a header row, so row 1 is the name of each column. If that's not the case, you can add the argument **header = FALSE**.
- **dec**: the character used in the file for decimal points.

Reading a local file

- To import a local .txt or a .csv file, the syntax would be:

```
my_data <- read.delim("mtcars.txt")

my_data <- read.csv("mtcars.csv")
```

The above R code, assumes that the file "mtcars.txt" or "mtcars.csv" is in your current working directory. To know your current working directory, type the function **getwd**() in R console.

- It's also possible to choose a file interactively using the function **file.choose**(), which I recommend if you're a beginner in R programming:

```
my_data <- read.delim(file.choose())

my_data <- read.csv(file.choose())
```

If you use the R code above in RStudio, you will be asked to choose a file.

If your data contains column with text, R may assume that columns as a factors or grouping variables (e.g.: "good", "good", "bad", "bad", "bad"). If you don't want your text data to be converted as factors, add **stringsAsFactor = FALSE** in **read.delim**(), **read.csv**() and **read.table**() functions. In this case, the data frame columns corresponding to string in your text file will be character.

For example:

```
my_data <- read.delim(file.choose(),
                      stringsAsFactor =
FALSE)
```

- If your field separator is for example "|", it's possible use the general function **read.table**() with additional arguments:

```
my_data <- read.table(file.choose(),
                      sep ="|", header = TRUE, dec
=".")
```

Reading a file from internet

It's possible to use the functions **read.delim**(), **read.csv**() and **read.table**() to import files from the web.

```
my_data <- read.delim("http://www.sthda.com/upload/boxplot_format.txt")
head(my_data)
```

```
    Nom variable
Group
1 IND1        10
A
2 IND2         7
A
3 IND3        20
A
4 IND4        14
A
5 IND5        14
A
6 IND6        12
A
```

Summary

- Import a local .txt file: **read.delim**(file.choose())

- Import a local .csv file: **read.csv**(file.choose())

- Import a file from internet: **read.delim**(url) if a txt file or **read.csv**(url) if a csv file

```
    Nom variable
Group
1 IND1        10
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6 IND6        12
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```