ml

February 9, 2023

2_R_manage_practice.org

DONE Saving, loading, removing R data structures

1. Copy the built-in data frame `ToothGrowth` to an R object `df` and display its structure.

```
df <- ToothGrowth
str(df)
```

```
'data.frame': 60 obs. of  3 variables:
 $ len : num  4.2 11.5 7.3 5.8 6.4 10 11.2 11.2 5.2 7 ...
 $ supp: Factor w/ 2 levels "OJ","VC": 2 2 2 2 2 2 2 2 2 2 ...
 $ dose: num  0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 ...
```

2. Save `df` to a (machine) file `df.RData` in the current directory.

```
save(df, file="df.RData")
```

3. Check that the file exists without leaving R.

```
shell('dir df.RData') # or 'ls df.RData' on Linux/MacOS
```

```
 Volume in drive C is OS
 Volume Serial Number is 0654-135C

 Directory of c:\Users\birkenkrahe\Documents\GitHub\admin\RoamNotes

02/09/2023  10:06 AM               384 df.RData
               1 File(s)            384 bytes
               0 Dir(s)  308,415,315,968 bytes free
```

4. Remove `df` from the current R session and check that it's been removed.

```
rm(df)
ls()
```

```
[1] "blood"        "flu_status"   "gender"       "pt_data"      "subject_name"
[6] "symptoms"     "temperature"  "x"            "y"
```

5. Load the dataframe from the file `df.RData`.

```
load(file="df.RData",verbose=TRUE)
```

```
Loading objects:
  df
```

6. You can save all data from your work session with `save.image()`. The result will be saved in a file `.RData`.

   (a) Create `x <- 1:100`, `y <- c(TRUE,FALSE)`

   (b) Run `save.image()`

   (c) Check that the file exists with `shell`

   (d) Remove all objects from your session with `rm` and check with `ls`

   (e) Load `.RData`

   (f) Check your session variable list with `ls`

```
x <- 1:100
y <- c(TRUE,FALSE)
save.image()
shell('DIR .RData')
rm(list=ls())
ls()
load('.RData')
ls()
```

```
 Volume in drive C is OS
 Volume Serial Number is 0654-135C

 Directory of c:\Users\birkenkrahe\Documents\GitHub\admin\RoamNotes
```

```
02/09/2023  10:06 AM             3,369 .RData
       1 File(s)          3,369 bytes
       0 Dir(s)  308,415,315,968 bytes free
character(0)
 [1] "blood"        "df"           "flu_status"   "gender"       "pt_data"
 [6] "subject_name" "symptoms"     "temperature"  "x"            "y"
```

DONE Importing data from CSV files

The (raw) file with patient data is available online here: `https://raw.githubusercontent.com/birkenkrahe/ml/main/data/pt_data.csv`

1. Read the CSV file into a dataframe `pt_data` and confirm its structure.

```
pt_data <- read.csv(
  file = "https://raw.githubusercontent.com/birkenkrahe/ml/main/data/pt_data.csv"
)
str(pt_data)
```

```
'data.frame': 3 obs. of  6 variables:
 $ subject_name: chr  "John Doe" "Jane Doe" "Steve Graves"
 $ temperature : num  98.1 98.6 101.4
 $ flu_status  : logi  FALSE FALSE TRUE
 $ gender      : chr  "MALE" "FEMALE" "MALE"
 $ blood       : chr  "O" "AB" "A"
 $ symptoms    : chr  "SEVERE" "MILD" "MODERATE"
```

2. What are the default parameters of `read.csv` regarding existence of a `header`, the import of `characters` as `factor`, and the separator?

```
args(read.csv)
```

```
function (file, header = TRUE, sep = ",", quote = "\"", dec = ".",
    fill = TRUE, comment.char = "", ...)
NULL
```

3. Write the dataframe `pt_data` to a CSV file `pt_data.csv` in your PC's `Download` directory, set the parameter `row.names` to `FALSE`, and check that the file is there.

```
write.csv(x=pt_data,
          file="c:/Users/birkenkrahe/Downloads/pt_data.csv",
          row.names=FALSE)
shell('DIR c:\\Users\\birkenkrahe\\Downloads\\pt_data.csv')

 Volume in drive C is OS
 Volume Serial Number is 0654-135C

 Directory of c:\Users\birkenkrahe\Downloads

02/09/2023  10:06 AM               207 pt_data.csv
               1 File(s)            207 bytes
               0 Dir(s)  308,415,315,968 bytes free
```