Take-home Problems Week 02 - Lynn Kisselbach

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Problem 1

Plug in an external hard-drive or USB into your computer. Manually, create a folder within called "TargetFolder". Try to programmatically specify the file path to identify the folders and files present on your external drive. Then, try to copy your .fcs files from their current folder on your desktop to the TargetFolder on your drive using R. Remember, just copy, no deletion, you need to walk before you can run :D

Answer 1

Problem 1 Week 02

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Folder path on USB drive

```
USBFolderPath <- "D:/TargetFolder"
```

Check if folder exists

```
if (dir.exists(USBFolderPath)) {cat("Folder found on USB drive:", USBFolderPath, "\n")} else
```

```
Folder found on USB drive: D:/TargetFolder
```

Figure 1: Alt text

Current path

```
getwd()
```

```
[1] "C:/Users/lynnm/Documents/Week2"
```

Copy folders and files from USB

```
DestinationPath <- "c:/Users/lynnm/Documents/Week2"
```

Check if source exists

```
if (!dir.exists(USBFolderPath)) {stop("Source folder does not exist. Check USB path.")}
```

Create destination folder if it doesn't exist

Figure 2: Alt text

```
if (!dir.exists(DestinationPath)) {dir.create(DestinationPath, recursive = TRUE)}
```

Copy folder recursively

```
success <- file.copy(from = USBFolderPath, to = DestinationPath, recursive = TRUE, copy.mode
```

```
if (success) {message("Copy completed successfully")} else {warning("Some files could not be
```

```
Copy completed successfully
```

Figure 3: Alt text

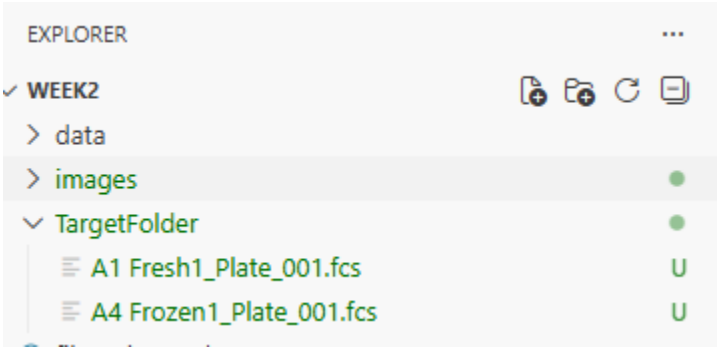

Figure 4: Alt text

Problem 2

In this session, we used list.files() with the "full.names argument" set to TRUE, as well as the basename() function to identify specific files. But what if you wanted a particular directory.

Run list.files() with “full.names argument” and “recursive” argument set to TRUE, and then search online to find an R function that would retrieve the “ ” individual directory folders.

Answer 2

```
> list.files(path = "data", full.names = TRUE, recursive = TRUE)
 [1] "data/CellCounts3L_AB_02_INF052_00.fcs"              "data/CellCounts3L_AB_02_ND050_02.fcs"
 [3] "data/CellCounts4L_AB_03_INF134_00.fcs"              "data/CellCounts4L_AB_03_NY068_03.fcs"
 [5] "data/CellCounts4L_AB_04_INF124-7_00_01.fcs"         "data/CellCounts4L_AB_04_ND006_04.fcs"
 [7] "data/CellCounts4L_AB_05_INF019-0_00_01.fcs"         "data/CellCounts4L_AB_05_ND050_05.fcs"
 [9] "data/target/CellCounts3L_AB_02_INF052_00.fcs"       "data/target/CellCounts3L_AB_02_ND050_02.fcs"
[11] "data/target2/CellCounts3L_AB_02_INF052_00.fcs"      "data/target2/CellCounts3L_AB_02_ND050_02.fcs"
[13] "data/target3/CellCounts3L_AB_02_INF052_00.fcs"      "data/target3/CellCounts4L_AB_03_INF134_00.fcs"
[15] "data/target3/CellCounts4L_AB_04_INF124-7_00_01.fcs" "data/target3/CellCounts4L_AB_05_INF019-0_00_01.fcs"
> list.dirs(path = ".", full.names = TRUE, recursive = TRUE)
 [1] "."                                "./.git"                           "./.git/hooks"
 [4] "./.git/info"                      "./.git/logs"                      "./.git/logs/refs"
 [7] "./.git/logs/refs/heads"           "./.git/logs/refs/remotes"         "./.git/logs/refs/remotes/origin"
[10] "./.git/objects"                   "./.git/objects/00"                "./.git/objects/24"
[13] "./.git/objects/33"                "./.git/objects/3a"                "./.git/objects/49"
[16] "./.git/objects/4a"                "./.git/objects/4c"                "./.git/objects/4f"
[19] "./.git/objects/7d"                "./.git/objects/9d"                "./.git/objects/a4"
[22] "./.git/objects/a5"                "./.git/objects/a7"                "./.git/objects/b5"
[25] "./.git/objects/dd"                "./.git/objects/e1"                "./.git/objects/e6"
[28] "./.git/objects/e7"                "./.git/objects/info"              "./.git/objects/pack"
[31] "./.git/refs"                      "./.git/refs/heads"                "./.git/refs/remotes"
[34] "./.git/refs/remotes/origin"       "./.git/refs/tags"                 "./data"
[37] "./data/target"                    "./data/target2"                   "./data/target3"
[40] "./images"                         "./TargetFolder"
>
```

Figure 5: Alt text

Problem 3

R packages often come with internal datasets, that are typically used for use in the help documentation examples. These can be accessed through the use of the system.file() function. See an example below.

system.file(“extdata”, package = “FlowSOM”)

Using what we have learned about file.path navigation, search your way down the file.directory of the FlowSOM and flowWorkspace packages, and identify any .fcs files that are present for use in the documentation.

Answer 3

In the FlowSOM package, one .fcs file was found in the extdata folder (68983.fcs) In the flowWorkspace package, no .fcs files were found

```
> system.file("extdata", package = "FlowSOM")
[1] "C:/Users/lynnm/AppData/Local/Programs/R/R-4.5.2/library/FlowSOM/extdata"
> system.file("extdata", package = "flowWorkspace")
[1] "C:/Users/lynnm/AppData/Local/Programs/R/R-4.5.2/library/flowWorkspace/extdata"
```

Figure 6: Alt text

```
> list.files(path = "C:/Users/lynnm/AppData/Local/Programs/R/R-
4.5.2/library/FlowSOM/extdata", pattern = ".fcs", full.names = FALSE, recursive = FALSE)
[1] "68983.fcs"
> list.files(path = "C:/Users/lynnm/AppData/Local/Programs/R/R-
4.5.2/library/flowWorkspace/extdata", pattern = ".fcs", full.names = FALSE, recursive = FALSE)
character(0)
```

Figure 7: Alt text