Notes on TD1 : basics of R

> R is case sensitive (x != X)

> NaN : Not a number

> Documentation

> Great tutorial

Help menus

Manual:

```
help.start()
help(fonction)
example(fonction)
```

Searching man for a fct° containning a string :

```
apropos("string")
```

Variables

```
x <- 3
x = "string"
x <- TRUE
```

`1/0` and `-1/0` will return infinites values: `inf` and `-inf`

R objects

```
objects()
rm(name_of_object)
```

`objects()` equivalents to `ls()`

Clear the workspace is `rm(list = ls())`

Directories

```
getwd()
setwd()
```

Loops & evrthing

```
for (i in seq(along=1:10)){
instructions
}

while(y>0){
instructions
}
```

Matrices

```
B=matrix(c(4,9),nrow=2,ncol=1)
D=t(B)
determinant = det(D)
```

Access to an element / line / row :

`R F[1,2] #Element F[,2] #Row` Carefull, in R it start at 1 so it's like :

[1,1]	[1,2]	[1,3]
[2,1]	[2,2]	[2,3]

Concatenation

Concatener A :

1	2
1	2

and B :

3
3

Doing `C=cbind(A,B)` will give :

1	2	3

1	2	3
1	2	3

Multiplication

P = G %*% C

Carefull G must be `m*n` and C `n*p`

Ploting

```
plot(x_axis, y_axis)
```

Can also add parameters as `l` for linear or `s` for seuil (i guess ??) like this :

```
plot(x_axis, y_axis, type="l")
```

Import data & library

```
library(XLConnect)
install.packages('XLConnect', dependencies = TRUE)
install.packages("openxlsx", dependencies = TRUE)
library(openxlsx)
library(readxl)

wb <- loadWorkbook("Book1.xlsx")

mydata<-readWorksheetFromFile(wb,sheet="Sheet1")
mydata2 = read_excel("Book1.xlsx")
mydata3 = read.xlsx2("Book1.xlsx", 1, rep("numeric", 3))

new_matrix <- as.matrix(mydata2)

AA<- matrix(, nrow=4,ncol=3)
AA<-as.matrix(mydata2)
```

Functions

To define :

```
myfct<-function(param1, param2){
    instructions
```

```
    return(result_var)
}
```

To use :

```
myfct(1 ,2)
```