الجامعة الدولية للرباط Université Internationale de Rabat L'UNIVERSITÉ INNOVANTE	**Introduction à l'analyse de données** Mme Nada SBIHI	**Année Universitaire** 2020/2021

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Compte Rendu

Lab2 : Introduction to **R**

Exercice1 : (exercice3 lab1)

Q1 :

```
[Workspace loaded from ~/.RData]

> planets_df = data.frame(plantes= c("Mercury","Venus","Earth","Mars","Jupiter","Saturn","Uranus","Neptune"), type=c("Terrestrial planet","Terrestrial planet","Terrestrial planet","Terrestrial planet", "Gas giant","Gas giant","Gas giant","Gas giant"), diameter=c(0.382, 0.949, 1, 0.532, 11.209, 9.449, 4.007, 3.883), rotation=c(58.64, -243.02, 1, 1.03, 0.41, 0.43, -0.72, 0.67), rings=c(FALSE, FALSE, FALSE, FALSE, TRUE, TRUE, TRUE, TRUE) )
>
>
> #Q2
```

Script1.R* | planets_df | small_planets_df | planets_dfvariable

Filter

	plantes	type	diameter	rotation	rings
1	Mercury	Terrestrial planet	0.382	58.64	FALSE
2	Venus	Terrestrial planet	0.949	-243.02	FALSE
3	Earth	Terrestrial planet	1.000	1.00	FALSE
4	Mars	Terrestrial planet	0.532	1.03	FALSE
5	Jupiter	Gas giant	11.209	0.41	TRUE
6	Saturn	Gas giant	9.449	0.43	TRUE
7	Uranus	Gas giant	4.007	-0.72	TRUE
8	Neptune	Gas giant	3.883	0.67	TRUE

Q2 :

```
>
> #Q2
> planets_dfvariable=str(planets_df)
'data.frame':   8 obs. of  5 variables:
 $ plantes : chr  "Mercury" "Venus" "Earth" "Mars" ...
 $ type    : chr  "Terrestrial planet" "Terrestrial planet" "Terrestrial planet" "Terrestrial planet" ...
 $ diameter: num  0.382 0.949 1 0.532 11.209 ...
 $ rotation: num  58.64 -243.02 1 1.03 0.41 ...
 $ rings   : logi  FALSE FALSE FALSE FALSE TRUE TRUE ...
>
>
> #Q3
```

Q3 :

```
>
>
> closet_planets_df=data.frame(planets_df[1:3,1:5])
>
```

Script1.R* | closet_planets_df | closest_plannets_df | planets_df

Filter

	plantes	type	diameter	rotation	rings
1	Mercury	Terrestrial planet	0.382	58.64	FALSE
2	Venus	Terrestrial planet	0.949	-243.02	FALSE
3	Earth	Terrestrial planet	1.000	1.00	FALSE

```
>
>
> furthest_planets_df=data.frame(planets_df[6:8,1:5])
>
> view(furthest_planets_df)
>
```

Script1.R* | furthest_planets_df | closet_planets_df | closest

Filter

	plantes	type	diameter	rotation	rings
6	Saturn	Gas giant	9.449	0.43	TRUE
7	Uranus	Gas giant	4.007	-0.72	TRUE
8	Neptune	Gas giant	3.883	0.67	TRUE

Q4 :

```
> furthest_planets_diameter=c(0.382, 0.949, 1, 0.532, 11.209, 9.449, 4.007, 3.883)
>
> view(furthest_planets_diameter)
>
```

	V1
1	0.382
4	0.532
2	0.949
3	1.000
8	3.883
7	4.007
6	9.449
5	11.209

Q5 :

```
> small_planets_df=data.frame(planets_df$diameter<1)
>
> view(small_planets_df)
>
```

Script1.R* | furthest_planets_dia

Filter

	planets_df.diameter...1
1	TRUE
2	TRUE
3	FALSE
4	TRUE
5	FALSE
6	FALSE
7	FALSE
8	FALSE

Exercice 2 :

```
#Exercice2
#Q1
site="linkedin"
site
nview=14
nview

#Q2
if(site=="linkedin")
{
  print("Showing linkedin information")
}
if(nview>10 & nview<=15)
{
  print("Your number of views is average")
}
```

```
> #Q1
> site="linkedin"
> site
[1] "linkedin"
> nview=14
> nview
[1] 14
>
> #Q2
> if(site=="linkedin")
+ {
+   print("Showing linkedin information")
+ }
[1] "Showing linkedin information"
> if(nview>10 & nview<=15)
+ {
+   print("Your number of views is average")
+ }
[1] "Your number of views is average"
>
```

Exercice 3 :

```
142  #Exercice3
143  speed=64
144
145  while(speed>30){
146    print(paste("your speeed is",speed))
147
148     if(speed>48) {
149       print(paste("Slow down big time",speed))
150       speed =speed-11
151
152     }else {
153       print(paste("Slow DOWN!",speed))
154       speed= speed-6
155       }
156  }
```

```
> while(speed>30){
+   print(paste("your speeed is",speed))
+
+    if(speed>48) {
+      print(paste("Slow down big time",speed))
+      speed =speed-11
+
+    }else {
+      print(paste("Slow DOWN!",speed))
+      speed= speed-6
+      }
+ }
[1] "your speeed is 64"
[1] "Slow down big time 64"
[1] "your speeed is 53"
[1] "Slow down big time 53"
[1] "your speeed is 42"
[1] "Slow DOWN! 42"
[1] "your speeed is 36"
[1] "Slow DOWN! 36"
>
```

Exercice4 :

```
> #Exercice4:
> i=1
> while (i<10)
+ {
+    triple=i * 3
+    print (paste( "le triple est:" ,triple))
+    if (triple %% 8 == 0 ){break}
+    i= i+1
+    }
[1] "le triple est: 3"
[1] "le triple est: 6"
[1] "le triple est: 9"
[1] "le triple est: 12"
[1] "le triple est: 15"
[1] "le triple est: 18"
[1] "le triple est: 21"
[1] "le triple est: 24"
>
```

Exercice5 :

```
> #Exercice5:
>
> linkedin<-c(16,9,13,5,2,17,14)
>
> for(v in linkedin)
+ {
+    if(v>10)
+       print("You are popular!")
+    else
+       print("Be more visible!")
+
+    if(v > 16){
+       print("This is ridiculous, I'm outta here!")
+       break;
+    }
+    if(v < 5)
+    {print("This is too embarassing")
+     next}
+    print(v)
+ }
[1] "You are popular!"
[1] 16
[1] "Be more visible!"
[1] 9
[1] "You are popular!"
[1] 13
[1] "Be more visible!"
[1] 5
[1] "Be more visible!"
[1] "This is too embarassing"
[1] "You are popular!"
[1] "This is ridiculous, I'm outta here!"
>
```

Exercice6 :

Q1 :

```
> #Exercice6:
> #Q1
> linkedin<-c(16,9,13,5,NA,17,14)
> facebook<-c(17,NA,5,16,8,13,14)
>
```

Q2 :

```
>
> #Q2
> mean(linkedin)
[1] NA
>
```

Q3 :

```
>
> #Q3
> mean(facebook, na.rm=TRUE)
[1] 12.16667
>
```

Q4 :

```
>
> #Q4
> MAD=mean(abs(linkedin-facebook), na.rm=TRUE)
> MAD
[1] 4.8
>
```

Exercice7 :

Q1 :

```
220 #Exercice7
221
222 #Q1
223 linkedin<-c(16,9,13,5,5,17,14)
224 facebook<-c(17,7,5,16,8,13,14)
225
226 interpret = function(i)
227 {
228    if(i>15)
229    {print("You are populare!")
230       return(i)}
231    else{
232       print("Try to be more visible!")
233       return(0)
234    }
235 }
236 interpret(linkedin[2])
237
238
```

```
> interpret(linkedin[2])
[1] "Try to be more visible!"
[1] 0
>
```

Q2 :

```
238
239 interpretall = function(vec, lo=TRUE)
240 {
241    sum=0
242    for(e in vec)
243    {
244       if(interpret(e)!=0){
245          sum=sum+e
246       }
247    }
248    if(lo==TRUE){
249       return(sum)
250    }else{
251       return(0)
252    }
253 }
254 interpretall(facebook,TRUE)
255 interpretall(linkedin, TRUE)
256
257
```

```
> interpretall(facebook,TRUE)
[1] "You are populare!"
[1] "Try to be more visible!"
[1] "Try to be more visible!"
[1] "You are populare!"
[1] "Try to be more visible!"
[1] "Try to be more visible!"
[1] "Try to be more visible!"
[1] 33
> interpretall(linkedin, TRUE)
[1] "You are populare!"
[1] "Try to be more visible!"
[1] "Try to be more visible!"
[1] "Try to be more visible!"
[1] "Try to be more visible!"
[1] "You are populare!"
[1] "Try to be more visible!"
[1] 33
>
```