DATA ANALYTICS – 4027

LAB-7

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Contents:

Submitted to:

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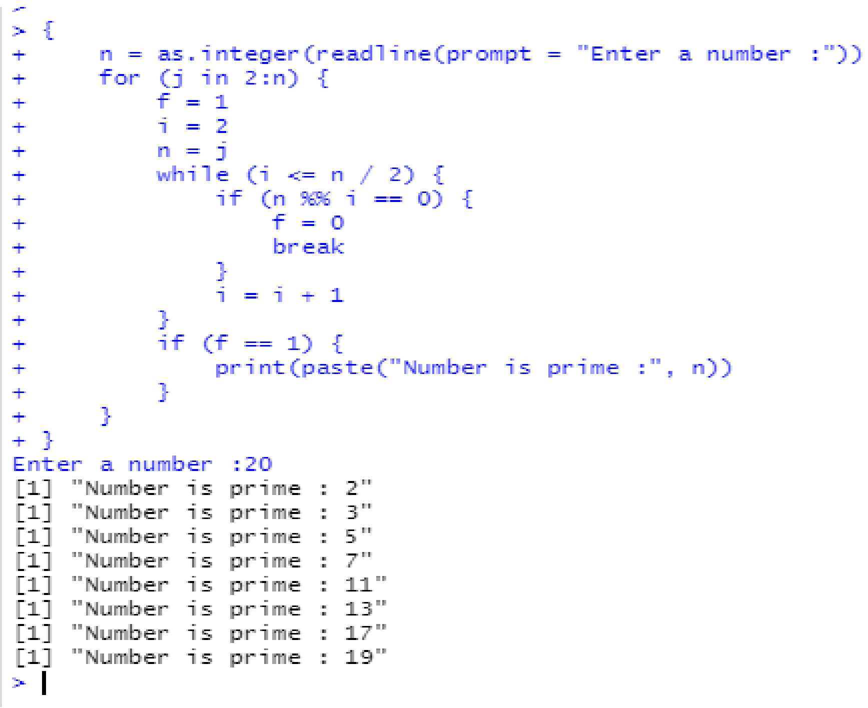
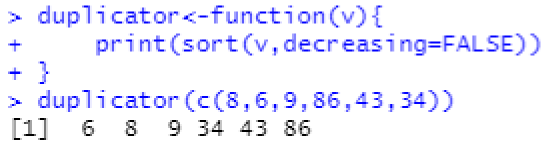
Ex 7

1. Write a R function to find the sum of prime numbers with in the given limit. Use nested function to check whether a number is a prime of not.



```
> {
+     n = as.integer(readline(prompt = "Enter a number :"))
+     for (j in 2:n) {
+         f = 1
+         i = 2
+         n = j
+         while (i <= n / 2) {
+             if (n %% i == 0) {
+                 f = 0
+                 break
+             }
+             i = i + 1
+         }
+         if (f == 1) {
+             print(paste("Number is prime :", n))
+         }
+     }
+ }
Enter a number :20
[1] "Number is prime : 2"
[1] "Number is prime : 3"
[1] "Number is prime : 5"
[1] "Number is prime : 7"
[1] "Number is prime : 11"
[1] "Number is prime : 13"
[1] "Number is prime : 17"
[1] "Number is prime : 19"
> 
```

2. Create a function that given a numeric vector, sort this in ascending order and duplicate it by two



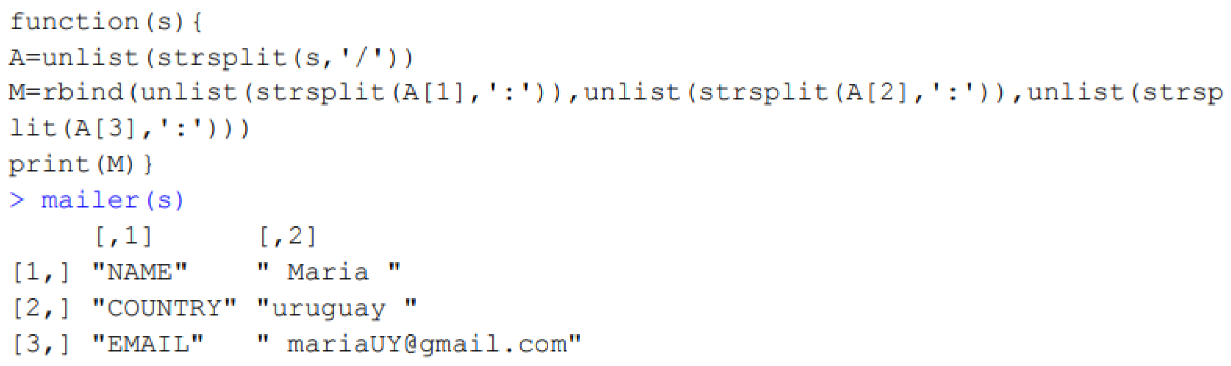
```
> duplicator<-function(v){
+     print(sort(v,decreasing=FALSE))
+ }
> duplicator(c(8,6,9,86,43,34))
[1]  6  8  9 34 43 86
```

3. Create a function that given a string

   ST='NAME: Maria /COUNTRY:uruguay /EMAIL: mariaUY@gmail.com'

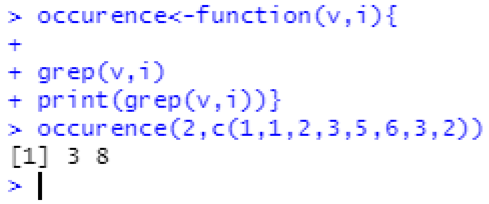
   return a matrix

   [,1] [,2]
   [1,] "NAME" " Maria "
   [2,] "COUNTRY" "uruguay "
   [3,] "EMAIL" " mariaUY@gmail.com"



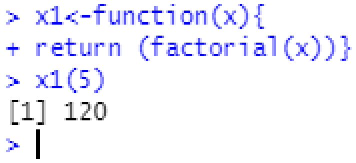
```
function(s){
A=unlist(strsplit(s,'/'))
M=rbind(unlist(strsplit(A[1],':')),unlist(strsplit(A[2],':')),unlist(strsp
lit(A[3],':')))
print(M)}
> mailer(s)
     [,1]      [,2]
[1,] "NAME"    " Maria "
[2,] "COUNTRY" "uruguay "
[3,] "EMAIL"   " mariaUY@gmail.com"
```

4. Create a function that given a vector and an integer will return the occurrences of the integer inside the vector.



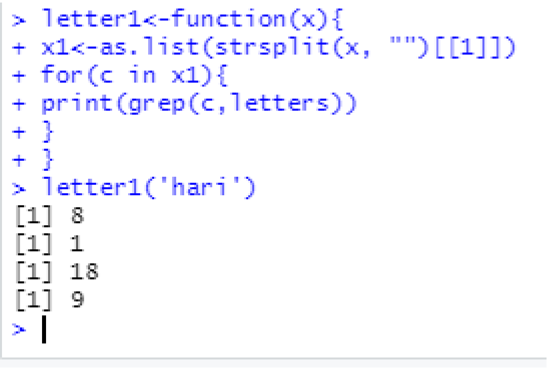
```
> occurence<-function(v,i){
+
+ grep(v,i)
+ print(grep(v,i))}
> occurence(2,c(1,1,2,3,5,6,3,2))
[1] 3 8
> 
```

5. Write a R function to return the factorial values of individual digits in the given input:



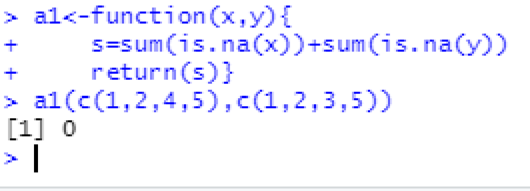
```
> x1<-function(x){
+ return (factorial(x))}
> x1(5)
[1] 120
> 
```

6. Create a function that given one word, return the position of word’s letters on letters vector.
   For example, if the word is ‘abc’, the function will return 1 2 3.



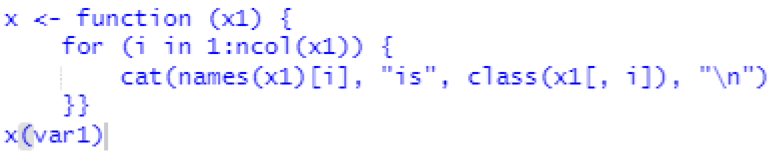
```
> letter1<-function(x){
+ x1<-as.list(strsplit(x, "")[[1]])
+ for(c in x1){
+ print(grep(c,letters))
+ }
+ }
> letter1('hari')
[1] 8
[1] 1
[1] 18
[1] 9
> 
```

7. Write check_na(), a function that takes two vectors of the same length and returns the total numbers of NA’s in both vectors.

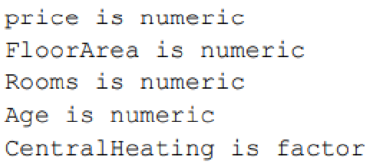


```
> a1<-function(x,y){
+     s=sum(is.na(x))+sum(is.na(y))
+     return(s)}
> a1(c(1,2,4,5),c(1,2,3,5))
[1] 0
> 
```

8. Create a function that given a data frame will print the name of the column and the class of data it contains (e.g. Variable1 is Numeric.

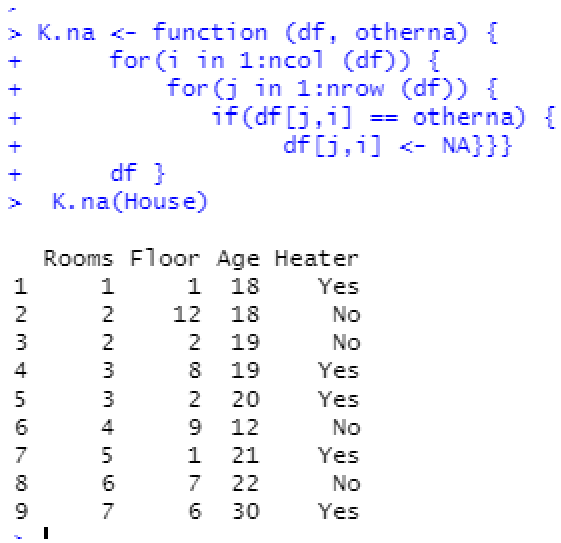


```
x <- function (x1) {
    for (i in 1:ncol(x1)) {
        cat(names(x1)[i], "is", class(x1[, i]), "\n")
    }}
x(var1)
```



```
price is numeric
FloorArea is numeric
Rooms is numeric
Age is numeric
CentralHeating is factor
```

9. Create a function that given a data frame, and a number or character will return the data frame with the character or number changed to NA.



```
> K.na <- function (df, otherna) {
+      for(i in 1:ncol (df)) {
+          for(j in 1:nrow (df)) {
+             if(df[j,i] == otherna) {
+                  df[j,i] <- NA}}}
+      df }
>  K.na(House)

  Rooms Floor Age Heater
1     1     1  18    Yes
2     2    12  18     No
3     2     2  19     No
4     3     8  19    Yes
5     3     2  20    Yes
6     4     9  12     No
7     5     1  21    Yes
8     6     7  22     No
9     7     6  30    Yes
```