VIT-AP UNIVERSITY, ANDHRA PRADESH

CSE4027 – Data Analytics - Lab Sheet: 1

Academic year: 2022-2023 **Branch/ Class:** B.Tech
Semester: Fall **Date: 15/09/2022**
Faculty Name: Dr Syed Khasim **School:** SCOPE
Student name: M.JASWANTH **Reg. no.:** LAB 1

****

Questions:

1. Basic commands.

```
> a=23
> b=34
> c=a+b
> c
[1] 57
> ls()
 [1] "a"               "A"               "abline"          "Age"             "b"
 [6] "B"               "bayesTheorem"    "c"               "capt_crisp"      "CAT"
[11] "CentralHeating"  "coffee"          "df"              "f"               "FAT"
[16] "FloorArea"       "fun"             "Hotel"           "labels"          "m"
[21] "median_result"   "mod"             "model"           "mydata"          "n"
[26] "numbers"         "p"               "pl"              "pE"              "pEM1"
[31] "pEM2"            "pM1"             "pM2"             "price"           "q"
[36] "Rooms"           "s_x"             "s_y"             "sd"              "seq"
[41] "stu_data"        "t"               "x"               "x_bar"           "x1"
[46] "x2"              "y"               "y_bar"
> rm(B)
> ls()
 [1] "a"               "A"               "abline"          "Age"             "b"
 [6] "bayesTheorem"    "c"               "capt_crisp"      "CAT"             "CentralHeating"
[11] "coffee"          "df"              "f"               "FAT"             "FloorArea"
[16] "fun"             "Hotel"           "labels"          "m"               "median_result"
[21] "mod"             "model"           "mydata"          "n"               "numbers"
[26] "p"               "pl"              "pE"              "pEM1"            "pEM2"
[31] "pM1"             "pM2"             "price"           "q"               "Rooms"
[36] "s_x"             "s_y"             "sd"              "seq"             "stu_data"
[41] "t"               "x"               "x_bar"           "x1"              "x2"
[46] "y"               "y_bar"
> rm(list=ls())
> c
function (...)  .Primitive("c")
> getwd()
[1] "C:/Users/Sashank K/Documents"
> list.files()
 [1] "AD_Port"                 "CardioGoodFitness.csv"   "Custom Office Templates"
 [4] "Desktop - Shortcut.lnk"  "desktop.ini"             "Fax"
 [7] "hs.c"                    "jash.c"                  "lab6.c"
[10] "lab6.exe"                "My Music"                "My Pictures"
[13] "My Videos"               "page.c"                  "page.exe"
[16] "Processing"              "Prolog"                  "Scanned Documents"
[19] "ShareX"                  "TCP Gate.pdf"            "web tech"
[22] "webtech"                 "Wondershare"             "Zoom"
> file.info("A")
  size isdir mode mtime ctime atime  exe
A   NA    NA <NA>  <NA>  <NA>  <NA> <NA>
>
```

2. Create vector of numeric, complex, logical and character types of any length.

```
> x=vecctor("numeric",5)
Error in vecctor("numeric", 5) : could not find function "vecctor"
> x=vector("numeric",5)
> print("Numeric Type: ")
[1] "Numeric Type: "
> print(x)
[1] 0 0 0 0 0
> c=vector("complex",4)
> print("complex Type:")
[1] "complex Type:"
> print(c)
[1] 0+0i 0+0i 0+0i 0+0i
> l=vector("logical",3)
> print(LogicalType)
Error in print(LogicalType) : object 'LogicalType' not found
> print("LogicalType")
[1] "LogicalType"
> print(l)
[1] FALSE FALSE FALSE
> chr=vector("character",2)
> print("character Type:")
[1] "character Type:"
> print(chr)
[1] "" ""
>
```

3. Create vector a and b and both of them and store it in a.

```
> a=c(1,2,3,4,5,6,7)
> b=c(11,22,33,44,55,66,77)
> a=c(a,b)
> a
 [1]  1  2  3  4  5  6  7 11 22 33 44 55 66 77
>
```

4. Create a vector a that includes null values. Find mean, product and sum.

```
> x=c(1,2,NULL,4,5,6,NA)
> print(sum(x))
[1] NA
> print(mean(x))
[1] NA
> print(prod(x))
[1] NA
> print(sum(x,na.rm=TRUE))
[1] 18
> print(mean(x,na.rm=TRUE))
[1] 3.6
> print(prod(x,na.rm=TRUE))
[1] 240
```

5. Create a vector of size 10. Find highest and lowest value in the vector.

```
> x=c(1,2,3,4,5,6,7,23,24,25)
> print(x)
 [1]  1  2  3  4  5  6  7 23 24 25
> print(max(x))
[1] 25
> print(min(x))
[1] 1
>
```

6. Find second highest element in a vector.

```
> y=sort(x,partial = length-1)

> x=c(1,2,3,4,5,6,7)
> length=length(x)
> length
[1] 7
> y=sort(x,partial = length-1)[length-1]
> y
[1] 6
>
```

7. Implement arithmetic operations on three vectors.

```
> a=c(1,2,3,4,5,6)
> b=c(2,3,4,5,6,7)
> c=c(3,4,5,6,7,8)
> d=a+b+c+d
Error: object 'd' not found
> d=a+b+c
> d
[1]  6  9 12 15 18 21
> d=c-b+a
> d
[1] 2 3 4 5 6 7
>
```

8. Duplicated and unique elements in a vector.

```
> make.unique(c("z","z","z"))
[1] "z"   "z.1" "z.2"
> make.unique(c("a","z","z","a"))
[1] "a"   "z"   "z.1" "a.1"
>
```

9. Create vectors a, b, c. Convert these into 3*3 matrix.

```
> a=c(1:3)
> b=c(2:5)
> a=c(1:3)
> b=c(2:4)
> c=c(3:5)
> m=cbind(a,b,c)
> m
     a b c
[1,] 1 2 3
[2,] 2 3 4
[3,] 3 4 5
>
```