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COURSE: DATA_ANLYTICS LAB-1

1) Write a R program to take input from the user (name and age) and display the values. Also print the version of R installation.

```
> name = readline(prompt="Input your name:")
Input your name:Hariprasad K K
> age= readline(prompt="Input your age: ")
Input your age: 20
> print(paste("My name is",name,"and I am",age,"years old."))
[1] "My name is Hariprasad K K and I am 20 years old."
> print(R.version.string)
[1] "R version 4.0.3 (2020-10-10)"
>
```

2) Write a R program to create a sequence of numbers from 20 to 50 and find the mean of numbers from 20 to 60 and sum of numbers from 51 to 91

```
> print(seq(20,50))
 [1] 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
[26] 45 46 47 48 49 50
> print(20,60))
Error: unexpected ')' in "print(20,60))"
> print(mean(20,60))
[1] 20
> print(sum(51,91))
[1] 142
>
```

3) Write a R program to get the details of the objects in memory.

```
> name ="Python";
> n1=10;
> n2=0.5;
> nums = c(10,20,30,40,50,60)
> print(ls())
 [1] "age"          "array1"       "C"            "Data_frmae"   "Dramel"
 [6] "drinks"       "fruits"       "i"            "level"        "list1"
[11] "list2"        "list3"        "matrix1"      "matrix2"      "mularray"
[16] "multi"        "n1"           "n2"           "name"         "New_col"
[21] "newlist"      "numbers"      "nums"         "onearray"     "rep"
[26] "rep_ind"      "str"          "thisarray"    "x"            "y"
[31] "Yarray"       "z.alpha.half"
> print(ls.str())
age :  chr "20"
array1 :  int [1:24] 1 2 3 4 5 6 7 8 9 10 ...
C :  num 2.33
Data_frmae : 'data.frame':      3 obs. of  3 variables:
 $ Training: chr  "Strength" "stamina" "other"
 $ pulse   : num  100 250 120
 $ Duration: num  80 30 45
Dramel : 'data.frame':  3 obs. of  2 variables:
 $ Name: chr  "sam" "lam" "ram"
 $ Age : num  19 22 24
drinks : List of 3
 $ : chr "coke"
 $ : chr "pepsi"
 $ : chr "freshdrinks"
fruits :  num [1:9] 1 2 6 4 5 3 8 10 4
i :  int 20
level :  num 0.01
list1 : List of 4
 $ : chr "A"
 $ : chr "b"
 $ : chr "c"
 $ : chr "d"
list2 : List of 3
 $ : chr "E"
 $ : chr "F"
 $ : chr "x"
list3 : List of 7
 $ : chr "A"
 $ : chr "b"
 $ : chr "c"
```

```
matrix1 :  num [1:3, 1:3] 1 2 3 4 5 6 7 8 9
matrix2 :  chr [1:3, 1:3] "a" "b" "c" "d" "e" "r" "a" "b" "c"
mularray :  int [1:4, 1:3, 1:2] 1 2 3 4 5 6 7 8 9 10 ...
multi :  int [1:4, 1:3, 1:2] 1 2 3 4 5 6 7 8 9 10 ...
n1 :  num 10
n2 :  num 0.5
name :  chr "Python"
New_col : 'data.frame': 3 obs. of  4 variables:
 $ Training: chr  "Strength" "stamina" "other"
 $ pulse   : num  100 250 120
 $ Duration: num  80 30 45
 $ Steps   : num  10 23 30
newlist : List of 2
 $ : chr "b"
 $ : chr "c"
numbers :  num [1:7] 1 2.5 4 5.5 7 8.5 10
nums :  num [1:6] 10 20 30 40 50 60
onearray :  int [1:25] 1 2 3 4 5 6 7 8 9 10 ...
rep :  num [1:18] 1 2 3 1 2 3 1 2 3 1 ...
rep_ind :  num [1:18] 1 1 1 1 2 2 2 2 2 2 ...
str :  chr "Vit,\nAP"
thisarray :  int [1:24] 1 2 3 4 5 6 7 8 9 10 ...
x :  int 24
y :  num [1:9] 12 13 14 10 65 87 32 45 67
Yarray :  int [1:24] 1 2 3 4 5 6 7 8 9 10 ...
z.alpha.half :  num 2.33
```

4) a R program to extract first 10 english letter in lower case and last 10 letters in upper case and extract letters between 22nd to 24th letters in upper case.

```
> a=head(letters,10)
> print(a)
 [1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j"
> b=tail(LETTERS,10)
> print(b)
 [1] "Q" "R" "S" "T" "U" "V" "W" "X" "Y" "Z"
> c=tail(LETTERS[22:24])
> print(c)
[1] "V" "W" "X"
```

5) Write a R program to find the factors of a given number.

```
> factors=function(a){
+ print(paste("factors of ",n, " are :"))
+ for( i in 1:a){
+ if((a%%i)== 0){
+ print(i)
+ }
+ }
+ }
> factors(23)
[1] "factors of  55  are :"
[1] 1
[1] 23
> factors(12)
[1] "factors of  55  are :"
[1] 1
[1] 2
[1] 3
[1] 4
[1] 6
[1] 12
>
```

6)Write a R program to find the maximum and the minimum value of a given vector

```
> a =c(1,5,6,8,9,7,8,2)
> print(paste("max value is :",max(a)))
[1] "max value is : 9"
> print(paste("max value is :",min(a)))
[1] "max value is : 1"
>
```

7) Write a R program to create three vectors a,b,c with 3 integers. Combine the three vectors to become a 3×3 matrix where each column represents a vector. Print the content of the matrix.

```
> a <- c(1,2,3)
> b<-c(4,5,6)
> c<-c(7,8,9)
> d<-cbind(a,b,c)
> print(d)
     a b c
[1,] 1 4 7
[2,] 2 5 8
[3,] 3 6 9
>
```

8)Write a R program to create three vectors numeric data, character data and logical data. Display the content of the vectors and their type.

```
> a=c(1,5,7,8,9,4,5)
> b=c("orange","white","red")
> c=c(FALSE,TRUE,FALSE,TRUE,TRUE)
> print(typeof(a))
[1] "double"
> print(typeof(b))
[1] "character"
> print(typeof(c))
[1] "logical"
>
```

9)Write a R program to create a Dataframes which contain details of 5 employees and display the details.

```
> emp=data.frame(name=c("hari","arun","gnanesh","pavan","arshath"),
+ gender=c("m","m","m","m","m"),
+ designation=c("md","md","md","md","md")
+ )
> print(emp)
     name gender designation
1    hari      m          md
2    arun      m          md
3 gnanesh      m          md
4   pavan      m          md
5 arshath      m          md
>
```

10) Write a R program to create the system's idea of the current date with and without time.

```
> print(Sys.Date())
[1] "2021-10-23"
> print(Sys.time())
[1] "2021-10-23 12:07:45 IST"
>
```