**Practical 2 Part B**

**Aim: To understand the various Date and time functions**

**Exercise 1**

The format of as.Date(x, ...) accepts character dates in the format, “YYYY-MM-DD”.

For the first exercise, use the c() function, and as.date(), to convert “2010-05-01” and “2004-03-15” to class “date” objects. Set a variable called, “Ex1Dts“.

**Exercise 2**

With as.Date(x, format, ...), the structure of the character dates are specified by the “format =” parameter.

For this exercise, use as.date(x, format, ...) to convert “07/19/98” to a date object within the variable, “Ex2Dt“.

**Exercise 3**

Convert “02/07/10“, “02/23/10“, “02/08/10“, “02/14/10“, and  
“02/10/10“, into date objects within the variable, “Ex3Dts“.

**Exercise 4**

Find the mean of the date object variable “Ex3Dts“.

**Exercise 5**

Find the max date in “Ex3Dts“.

**Exercise 6**

Obtain the difference between the dates 28/Feb/2020 and 3/Mar/ 2020.(Leap year)

**Exercise 7**

Use the “format()“, and “Sys.Date()“, functions to print today’s date, with a format of “%B %d %Y“.

**Exercise 8**

Obtain the current system time and check what will be the difference in time in GMT timezone for the same date and time. Use Sys.Time(), and as.POSIXct(“”,tz=””)

**Practical 3**

**Aim: To understand the use of for loops in data analysis**

**Write for loops to:**

**1. Compute the mean of every column in mtcars**

**2. Determine the type of each column in `flights`.**

**3. To compute the number of unique values in each column of the `iris` dataset.**

**4. Generate 10 random numbers from distributions(normal) with means of**

**-10, 0, 10, and 100.**

Solution:

1. data1=read.csv(“mtcars.csv”)

row.names(data1)=data1[,1] # change models column as row name

> data1=data1[,-1] # remove the column

> mean\_data=vector("double",ncol(data1))

> names(mean\_data)=names(data1)

> for(i in names(data1)) {

+ mean\_data[i]=mean(data1[[i]])

+ }

> mean\_data

mpg cyl disp hp drat wt qsec

20.090625 6.187500 230.721875 146.687500 3.596563 3.217250 17.848750

vs am gear carb

0.437500 0.406250 3.687500 2.812500

|  |
| --- |
| 2. type\_data <- vector("list", ncol(flights)) |
| names(type\_data) <- names(flights) |
| for (i in names(flights)) { |
| type\_data[[i]] <- class(flights[[i]]) |
| } |
| type\_data |
|  |

3. data("iris")

iris\_uniq = vector("double", ncol(iris))

names(iris\_uniq) =names(iris)

for (i in names(iris)) {

iris\_uniq[i] = length(unique(iris[[i]]))

}

iris\_uniq

4. n =10

mv = c(-10, 0, 10, 100)

normals = vector("list", length(mv))

for (i in seq\_along(normals)) {

normals[[i]] = rnorm(n, mean = mv[i]) # rnorm generates n normaly distributed

# numbers with given mean

}

normals