R PROGRAMMING BASICS

ASSIGNMENT QUESTIONS

1. Create a matrix with three rows A, B and C and four columns with names Q, W, E and R. Fill the matrix with any numbers between 1 and 10.

2. x = 24, y =”Hello World”, z = 93.65.
   Identify the class of x, y and z and convert all three into factor.

3. q = 65.9836
   a) Find square root of q and round it up to 3 digits.
   b) Check if log to the base 10 of q is less than 2.

4. x = c(“Intelligence”, “Knowledge”, “Wisdom”, “Comprehension”)
   y = “I am”
   z = “intelligent”
   a) Find first 4 letters of each word in x.
   b) Combine y and z to form a sentence “I am intelligent”
   c) Convert all the words in x to upper case.

5. a = c(3,4,14,17,3,98,66,85,44)
   Print “Yes” if the numbers in ‘a’ are divisible by 3 and “No” if they are not divisible by 3 using **ifelse()**.

6. b = c(36,3,5,19,2,16,18,41,35,28,30,31)
   List all the numbers less than 30 in b using **for loop**.

7. Date = “01/30/18”
   a) Convert Date into standard date format (yyyy-mm-dd) and name it as Date_new.
   b) Extract **day of week** and **month** from Date_new.
   c) Find the difference in the current system date and Date_new.

SOLUTIONS

#Q1. Create a matrix with three rows A, B and C and four columns with names Q, W, E and R. Fill the matrix with any numbers between 1 and 10
##A.

```
x<-matrix(c(1,2, 3, 4, 5, 6, 7,8,9,10),nrow=3,ncol=4,byrow=TRUE,
          dimnames=list(c("A","B","C"), c("Q","W","E","R")))
x
```

#Q2. Identify the class of x, y and z and convert all three into factor
##A.

```
x=24
y="Hello World"
z=93.65
class(x)
```

```
class(y)
class(z)

as.factor(x)
as.factor(y)
as.factor(z)


#Q3a. Find square root of q and round it up to 3 digits
##A.
q=65.9836
round(sqrt(q),3)


#Q3b. Check if log to the base 10 of q is less than 2.
##A.
log10(q)<2


#Q4a.  Find first 4 letters of each word in x
##A.
x = c("Intelligence", "Knowledge", "Wisdom", "Comprehension")
y = "I am"
z = "intelligent"

substring(x,1,4)


#Q4b. Combine y and z to form a sentence "I am intelligent"
##A.
paste(y,z)


#Q4c. Convert all the words in x to upper case
##A.
toupper(x)


#Q5. Print "Yes" if the numbers in 'a' are divisible by 3 and "No" if they are not
divisible by 3 using if else conditions
##A.
a = c(3,4,14,17,3,98,66,85,44)
ifelse(a%%3==0,"Yes","No")


#Q6. List all the numbers less than 30 in b using for loop
##A.
b = c(36,3,5,19,2,16,18,21,35,28,30,31)
for (i in b){
  if (i<30){
    print(i)
  }
}
```

```
#Q6a. Convert Date into date format and name it as Date_new
##A.
Date = "01/30/18"
Date_new<-as.Date(Date,format = "%m/%d/%y")


#Q6b. Extract day of week and month from Date_new
##A.
weekdays(Date_new)

months(Date_new)


#Q6c. Find the difference in the current system date and Date_new
##A.
Sys.Date()-Date_new
```