ITA04 STATISTICS WITH R PROGRAMMING

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# Assignment-I

1. The built-in vector LETTERS contains the uppercase letters of the alphabet. Produce a vector of
   1. the first 12 letters;

A) LETTERS[1:12]

* 1. the odd ‘numbered’ letters;

for(i in 1:26){

if(i %% 2 != 0){

print(LETTERS[i])

}

}

(iii) the (English) consonants.

for( i in LETTERS){

if(i=='A' || i=='E' || i=='I' || i=='O' || i=='U'){

}

else{

print(i)

}

}

1. The function rnorm() generates normal random variables. For instance, rnorm(10) gives a vectorof 10 i.i.d. standard normals. Generate 20 standard normals, and store them as x. Then obtain subvectors of
   1. the entries in x which are less than 1;
   2. the entries between – 0.5 and 1;
   3. the entries whose absolute value is larger than 1.5.

data<- rnorm(n = 10)

print(data)

summary(data)

1. Solve the following system of simultaneous equations using matrix methods.

a + 2b + 3c + 4d + 5e = −5 2a

+3b + 4c + 5d + e = 2

3a + 4b + 5c + d + 2e = 5

4a + 5b + c + 2d + 3e = 10

5a + b + 2c + 3d + 4e = 11

A.

lm <- matrix(c(1,2,3,4,5,2,3,4,5,1,3,4,5,1,2,4,5,1,2,3,5,1,2,3,4),nrow=5)

rm <- matrix(c(-5,2,5,10,11),nrow =5)

solve(lm,rm)

1. Create a factor object for an apple color such as 'green', 'green', 'yellow', 'red', 'red', 'red',' green'. Print the factor and applying the nlevels function to know the number of distinct values

A.

x <- c('green', 'green', 'yellow', 'red', 'red', 'red','green')

fac <- factor(x)

print(fac)

print(nlevels(fac))

1. Create an S3 object of class fruit contains a list with following required components such as name, quantity, cost and also Define and create s4 objects.Define a reference class of fruit

A.

setClass("ABOUT\_FRUITS", fruits <- list(name="character", Quantity="numeric",cost="numeric"))

fruit <- new("ABOUT\_FRUITS", name = "orange", Quantity = 21, cost = 200)

fruit

fruits <- list(name=" pine apple",Quantity= 3,cost=100)

class(fruits) <- "ABOUT\_FRUITS"

fruits

