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ITA04 STATISTICS WITH R PROGRAMMING

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

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

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

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

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

fruit

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

class(fruits) <- "ABOUT\_FRUITS"

fruits

