Name :- E Hemasundar Yadav

Roll :- AP19110010481

Sec :- CSE-H

1. Variables in R programming?

Program:

s = '1,2,3,4,5,6,7,8,9'

n = "Welcome to the world"

print(s)

cat(n)

1. Data types in R programming?

* Logical - True, False
* Numeric – 999,998.5,143
* Integer – 95L,533L,43L
* Complex – 4+5i
* Character – ‘sundar’, ‘is ’, “data\_analysist ”, “2.14”

Program:

* num <- 95

typeof(num)

* num3 <- 2i+4

typeof(num3)

* name <- "sunder"

typeof(name)

* num4 <- TRUE

typeof(num4)

1. Arrays in R Programming ?

Program :

s <- c(1,2,3)

n <- c(1,4,3,6,9,5)

col.names <- c('A','B','c')

row.names <- c('a','b',"c")

mat.names <- c('matrix a','matrix b')

res <- array(c(s,n), dim = c(3,3,2), dimnames = list(col.names,row.names,mat.names))

print(res)

1. List in R programming ?

Program :

list\_data <- list("Red", "Green", c(21,32,11), TRUE, 51.23, 119.1)

print(list\_data)

1. Function in R programming ?

Program :

new.function <- function(n){

a<-1

for(i in 1:n){

a<-a\*i

}

print(a)

}

n=readline(prompt = "Enter the number: ")

new.function(n)

1. Constructor in R Programming?
2. Matrix in R in R Programming ?

Program :

mat1 <- matrix(1:9,ncol = 3, byrow=TRUE, dimnames=list(c('R1','R2','R3'),c('C1','C2','C3')))

print(mat1)

1. If else in R Programming?

Program :

data <- as.double(readline(prompt = "Enter a number: "))

if (data > 0) {

print("Positive number")

} else if (data == 0) {

print("0")

} else {

print("Negative number")

}

1. For loop in R Programming?

Program:

for (num in 1:100) {

if (num %% 2 == 0) {

print(paste("Even number is :",num ))

} else{

print(paste("Odd number is:",num))

}}

1. Object in R Programming ?

Program :

obj= 50

obj

"sundar data analysist" -> char\_obj1

char\_obj1

1. Sampling in R Programming ?

Program :

s<- sample(1:10)

s

> 1 5 7 3 2 6 9 4 10 8

r<- sample(1:10,2)

r

> 6 7

12. Take input from the user and display the values?

Program:

n=readline(prompt = "Enter the msg: ")

print(paste("Entered message is",n))

> Enter the message: These is your entered message

"Entered message is These is your entered message "

1. 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?

Program :

s1 <-seq(20,50)

print(s1)

m1 <-mean(20:60)

print(m1)

s1 <- sum(51:90)

print(s1)

> 40

2820

1. Write a R program to create a vector which contains 10 random integer values between -50 and +50 ?

Program :

sample(-50:50,10) -> vector1

print(vector1)

> 49 38 29 39 23 19 -17 44 3 47

1. Write a R Program to get the first 10 Fibonacci numbers ?

Program :

Fibonacci <- numeric(10)

Fibonacci[1] <- Fibonacci[2] <- 1

for (i in 3:10) Fibonacci[i] <- Fibonacci[i - 2] + Fibonacci[i - 1]

print("First 10 Fibonacci numbers:")

print(Fibonacci)

> 1 1 2 3 5 8 13 21 34 55

1. Write a R program to get all prime numbers up to a given number ?

Program :

num = as.integer(readline(prompt="Enter a number: "))

flag = 0

# prime numbers are greater than 1

if(num > 1) {

# check for factors

flag = 1

for(i in 2:(num-1)) {

if ((num %% i) == 0) {

flag = 0

break

}

}

}

if(num == 2) flag = 1

if(flag == 1) {

print(paste(num,"is a prime number"))

} else {

print(paste(num,"is not a prime number"))

}

>Enter a number: 5

"5 is a prime number"

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

Program :

print("First 10 letters in lower case:")

t = head(letters, 10)

print(t)

print("Last 10 letters in upper case:")

t = tail(LETTERS, 10)

print(t)

print("Letters between 22nd to 24th letters in upper case:")

e = tail(LETTERS[22:24])

print(e)

> "a" "b" "c" "d" "e" "f" "g" "h" "i" "j"

"Q" "R" "S" "T" "U" "V" "W" "X" "Y" "Z"

"V" "W" "X"

1. Write a R program to find the factors of a given number ?

Program :

n=as.integer(readline(prompt="Enter a number: "))

i<-1

while(i<=n){

if(n%%i==0){

print(i)

}

i=i+1

}

>10

[1] 1

[1] 2

[1] 4

[1] 5

[1] 10

1. Write a R program to find the maximum and the minimum value of a given vector ?

Program :

sample(-100:100,20) -> vector

print(paste("Original vector is "))

print(vector)

print(paste("Maximum number of vector is: ",max(vector)))

print(paste("Minimum number of vector is: ",min(vector)))

>"Original vector is "

[1] 99 89 -5 65 -34 25 -38 83 23 53 44 28 -43 23 -32 64 -72 87 45 55

"Maximum number of vector is: 99"

"Minimum number of vector is: -72"

1. 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 ?

Program :

sample(1:20,3) -> a

sample(1:20,3) -> b

sample(1:20,3) -> c

print("a is: ")

print(a)

print("b is: ")

print(b)

print("c is: ")

print(c)

m <- matrix(c(a,b,c), nrow=3)

print(m)

<a is:

1 4 3

b is:

7 7 7

c is:

99 7 55

[,1] [,2] [,3]

[1,] 1 4 3

[2,] 7 7 7

[3,] 99 7 55