ASSESSMENT 1

1. Write a R program to take input from the user (name and age) and display

the values. Also print the version of R installation.

PROGRAM:

name = readline(prompt="Input your name: ")

age = readline(prompt="Input your age: ")

print(paste("My name is",name, "and I am",age ,"years old."))

print(R.version.string)

OUTPUT:

"My name is srujan and I am 19 years old."

[1] "R version 4.2.2 (2022-10-31)”

2. Write a R program to get the details of the objects in memory.

PROGRAM:

name="python"

n1=10

n2=0.5

nums=c(10,20,30,40,50,60)

print(ls())

print(ls.str())

OUTPUT:

[1] "n1" "n2" "name" "nums"

[1] "Details of the objects in memory:"

n1 : num 10

n2 : num 0.5

name : chr "Python"

nums : num [1:6] 10 20 30 40 50 60

3. 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:

print("Sequence of numbers from 20 to 50:")

print(seq(20,50))

print("Mean of numbers from 20 to 60:")

print(mean(20:60))

print("Sum of numbers from 51 to 91:")

print(sum(51:91))

OUTPUT:

1] "Sequence of numbers from 20 to 50:"

[1] 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

[29] 48 49 50

[1] "Mean of numbers from 20 to 60:"

[1] 40

[1] "Sum of numbers from 51 to 91:"

[1] 2911

4. Write a R program to create a vector which contains 10 random integer

values between -50 and +50.

PROGRAM:

v = sample(-50:50, 10, replace=TRUE)

print("Content of the vector:")

print("10 random integer values between -50 and +50:")

print(v)

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OUTPUT:

"Content of the vector:"

[1] "10 random integer values between -50 and +50:"

[1] -42 2 -36 -15 -34 11 29 -30 -40 22

5. 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)

OUTPUT:

[1] 1 1 2 3 5 8 13 21 34 55

6. Write a R program to get all prime numbers up to a given number (based on

the sieve of Eratosthenes).

PROGRAM:

prime\_numbers <- function(n) {

if (n >= 2) {

x = seq(2, n)

prime\_nums = c()

for (i in seq(2, n)) {

if (any(x == i)) {

prime\_nums = c(prime\_nums, i)

x = c(x[(x %% i) != 0], i)

}

}

return(prime\_nums)

}

else

{

stop("Input number should be at least 2.")

}

}

prime\_numbers(12)

OUTPUT:

[1] 2 3 5 7 11

7. Write a R program to print the numbers from 1 to 100 and print &quot;Fizz&quot; for

multiples of 3, print &quot;Buzz&quot; for multiples of 5, and print &quot;FizzBuzz&quot; for multiples

of both.

PROGRAM:

for (n in 1:100) {

if (n %% 3 == 0 & n %% 5 == 0) {print("FizzBuzz")}

else if (n %% 3 == 0) {print("Fizz")}

else if (n %% 5 == 0) {print("Buzz")}

else print(n)

}

OUTPUT:

[1] 1

[1] 2

[1] "Fizz"

[1] 4

[1] "Buzz"

[1] "Fizz"

[1] 7

[1] 8

[1] "Fizz"

[1] "Buzz"

[1] 11

[1] "Fizz"

[1] 13

[1] 14

[1] "FizzBuzz"

[1] 16

[1] 17

[1] "Fizz"

[1] 19

[1] "Buzz"

[1] "Fizz"

[1] 22

[1] 23

[1] "Fizz"

[1] "Buzz"

[1] 26

[1] "Fizz"

[1] 28

[1] 29

[1] "FizzBuzz"

[1] 31

[1] 32

[1] "Fizz"

[1] 34

[1] "Buzz"

[1] "Fizz"

[1] 37

[1] 38

[1] "Fizz"

[1] "Buzz"

[1] 41

[1] "Fizz"

[1] 43

[1] 44

[1] "FizzBuzz"

[1] 46

[1] 47

[1] "Fizz"

[1] 49

[1] "Buzz"

[1] "Fizz"

[1] 52

[1] 53

[1] "Fizz"

[1] "Buzz"

[1] 56

[1] "Fizz"

[1] 58

[1] 59

[1] "FizzBuzz"

[1] 61

[1] 62

[1] "Fizz"

[1] 64

[1] "Buzz"

[1] "Fizz"

[1] 67

[1] 68

[1] "Fizz"

[1] "Buzz"

[1] 71

[1] "Fizz"

[1] 73

[1] 74

[1] "FizzBuzz"

[1] 76

[1] 77

[1] "Fizz"

[1] 79

[1] "Buzz"

[1] "Fizz"

[1] 82

[1] 83

[1] "Fizz"

[1] "Buzz"

[1] 86

[1] "Fizz"

[1] 88

[1] 89

[1] "FizzBuzz"

[1] 91

[1] 92

[1] "Fizz"

[1] 94

[1] "Buzz"

[1] "Fizz"

[1] 97

[1] 98

[1] "Fizz"

[1] “Buzz"

8. 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)

OUTPUT:

[1] "First 10 letters in lower case:"

[1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j"

[1] "Last 10 letters in upper case:"

[1] "Q" "R" "S" "T" "U" "V" "W" "X" "Y" "Z"

[1] "Letters between 22nd to 24th letters in upper case:"

[1] "V" "W" “X"