M. SATHISH KUMAR
EDU19052

CONTINOUS ASSESSMENT - I

DATA SCIENCE WITH R PROGRAMMING

1.a) Creating a dataframe :

```
# vectors to create dataframe
Name = c('Jai', 'Princi', 'Gaurav', 'Anuj')
Height = c(5.1, 6.2, 5.1, 5.2)
Qualification = c('Msc', 'MA', 'msc', 'Msc')
Address = c('Delhi', 'Bangalore', 'chennai', 'Patna')
# Dataframe creation
df = data.frame(Name, Height, Qualification, Address)
print(df)
```

Output :

	Name	Height	Qualification	Address
1	Jai	5.1	Msc	Delhi
2	Princi	6.2	MA	Bangalore
3	Gaurav	5.1	Msc	~~Chenn~~ chennai
4	Anuj	5.2	Msc	Patna

b) Changing column name

changing column name "Address" to "location"

colnames(df)[which(names(df) == "Address")]

= "location"

column name changed successfully to "location"

Output:

	Name	Height	Qualification	location
1	Jai	5.1	M SC	Delhi
2	Pawri	6.2	MA	Bangalore
3	Gaurav	5.1	MSC	Chennai
4	Anuj	5.2	MSC	Patna

c) Structure of Dataframe:

Structure of Dataframe can be seen by str()

str(df)

Output:

data.frame : 4 obs of 4 variable

Name : Factor w/ 4 levels

Height : num 5.1 6.2 5.1 5.2

Qualification : Factor w/ 2 levels

Location : Factor w/ 4 levels

d) Mean, min, max values of integer column

```
# Using R inbuilt functions

mean (df $Height)
# It takes all the values in Height column and find mean

max (df $ Height)
# It takes all the values in Height and find max

min (df $ Height)
# It takes all values and find min
```

Output:

5.4

6.2

5.1

2. # Looping Over and printing elements of list

```
books = c('C', 'Python', 'R', 'AI')
Money = c(250, 280, 300)        # variables
Purchase = c(TRUE)
bookshop = list(books, Money, Purchase)  # Changing vectors to list
for (i in bookshop)                      # Iterating over
{
print(i)                                 # Printing all
}
```

Output:

"C" "PYTHON" "R" "AI"

250 280 300

TRUE

3. Printing alphabets in uppercase from n to z

~~letter <- LE~~

```
letters <- LETTERS [14:26] # Inbuilt function to convert capital letters
for (letter in letters){
    if (letter == "J") {  # Checking for condition
        next              # Bypassing by using next
    }
    print(letter)
}
```

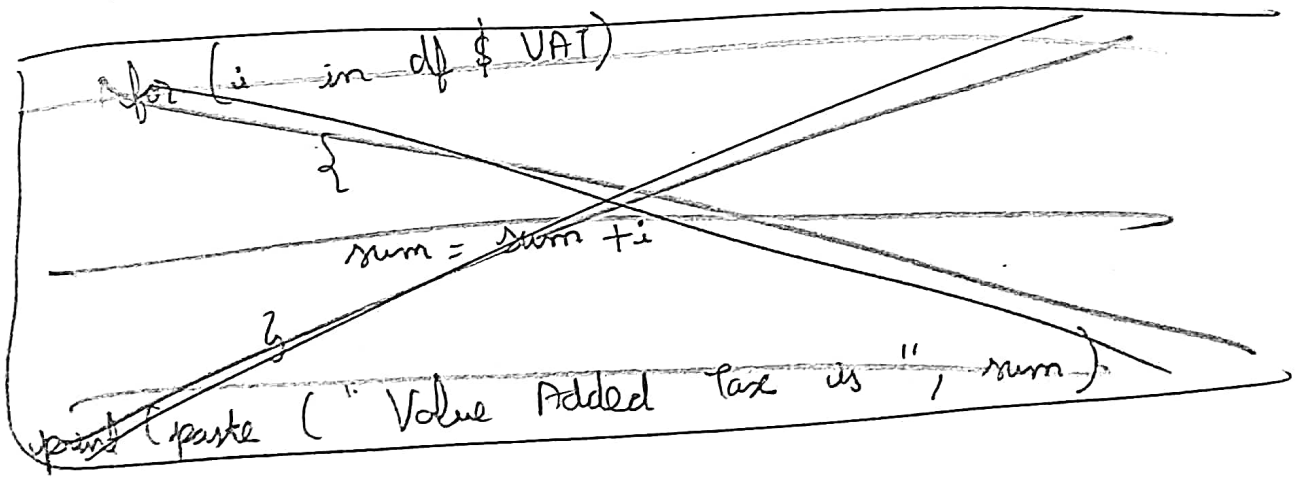
Output:

"N"
"O"
"P"
"Q"
"R"
"S"
"T"
"U"
"V"
"W"
"X"
"Y"
"Z"

4.) Compute VAT cost for given data

Taking 3 categories for sample Category 1, category 2, Category 3

```
categories = c("A", "B", "C")
Products = c("Books and Articles", "Vegetable, meat, beverage",
             "Tee-shirt, jean and pant")
VAT = c(5, 11, 19)
Price = c(50, 100, 200)
df = data.frame(categories, Products, VAT, Price)
print(df)
Sum = 0
```




```
vat A ← 0.05 * 50
vat B ← 0.11 * 100
vat C ← 0.19 * 200
cat("Vat A=", vat A, "Vat B=", vat B, "Vat C=", vat C)
```

Output:

cat A = 25 cat B = 50 cat C = 79

5.

```
SRET <- function (name, unique-id, coursename = "Machine
                  Learning", branch)  # Function to
                                        print output
{
print (paste ("Name:", name)
print (paste ("Unique ID:", unique-id)
print (paste ("Course Name:", coursename)
print (paste ("Branch: ", Branch)
}
name <- readline ("Enter Name: ")  # Getting input
id <- readline ("Enter Unique ID: ")
coursename <- readline ("Enter course Name: ")
Branch <- readline ["Enter branch: ")
details (name, id, , Branch)
```

Output:

Enter Name : Sathish
Enter Unique ID : 1298
Coursename : CS
Branch : Engineering

Name : Sathish Course Name : Machine Learning
Unique ID: 1298 Branch : Engineering