



UTP  
UNIVERSITI TEKNOLOGI PETRONAS

TEB2164

Introduction to Data Science

Lab Assignment

30 September 2022

Student Name	Student ID	Department
MUHAMMAD FALIKH FARHAN BIN MOHD RUSLI	20000947	Information Technology

## **Coding**

```
#QUESTION1
```

```
#retrieve weight from user in kilograms
```

```
weight <- readline(prompt="Enter weight(kg): ")#step1
```

```
weight <- as.numeric(weight)#step2
```

```
#retrieve height from user in meters (for example, 1.75)
```

```
height <- readline(prompt="Enter height(m): ")#step3
```

```
height <- as.numeric(height)#step4
```

```
#Calculate BMI
```

```
BMI <- (weight)/(height^2)#step5
```

```
#Display BMI result
```

```
print(paste("BMI:", BMI)) #step6
```

```
cat(paste(" Underweight:", BMI<=18.4, "\n",
```

```
    "Normal:", 18.5<=BMI && BMI<=24.9, "\n",
```

```
    "Overweight:", 25.0<=BMI && BMI<=39.9, "\n",
```

```
    "Obesity:", 40.0<=BMI)) #step7
```

## #QUESTION2

#retrieve string 1 from user

```
str1 <- readline(prompt="Enter string 1: ") #step1
```

```
x <- format(str1) #Changing the case to upper # step2
```

```
x1 <- toupper(str1) #Changing the case to upper # step3
```

#retrieve string 2 from user

```
str2 <- readline(prompt="Enter string 2: ") #step4
```

```
y <- format(str2) #Changing the case to upper #step5
```

```
y1 <- toupper(str2) #Changing the case to upper # step6
```

```
cat(paste("This program compare 2 strings. Both input are similar:", x1==y1)) #step7
```

## #QUESTION3

#retrieve name

```
x <- readline(prompt="Enter name: ")#step1
```

```
name <- toupper(x)#step2
```

#retrieve phone number

```
y <- readline(prompt="Enter phone number: ")#step3
```

```
pnum1 <- substr(y, 1, 3) # Extract characters from 1st to 3rd position.#step4
```

```
pnum2 <- substr(y, 7, 10)# Extract characters from 7th to 10th position.#step5
```

#Display result

```
cat("Hi,",name,". A verification code has been sent to ", pnum1,"-xxx",pnum2) #step6
```

## Screenshots

### QUESTION 1

Coding:

```
1 #QUESTION1
2 #retrieve weight from user in kilograms
3 weight <- readline(prompt="Enter weight(kg): ")#step1
4 weight <- as.numeric(weight)#step2
5 #retrieve height from user in meters (for example, 1.75)
6 height <- readline(prompt="Enter height(m): ")#step3
7 height <- as.numeric(height)#step4
8 #Calculate BMI
9 BMI <- (weight)/(height^2)#step5
10 #Display BMI result
11 print(paste("BMI:", BMI)) #step6
12 cat(paste(" Underweight:", BMI<=18.4, "\n",
13           "Normal:", 18.5<=BMI && BMI<=24.9, "\n",
14           "Overweight:", 25.0<=BMI && BMI<=39.9, "\n",
15           "Obesity:", 40.0<=BMI)) #step7
16
```

Output:

```
> #QUESTION1
> #retrieve weight from user in kilograms
> weight <- readline(prompt="Enter weight(kg): ")#step1
Enter weight(kg): 75
> weight <- as.numeric(weight)#step2
> #retrieve height from user in meters (for example, 1.75)
> height <- readline(prompt="Enter height(m): ")#step3
Enter height(m): 1.75
> height <- as.numeric(height)#step4
> #Calculate BMI
> BMI <- (weight)/(height^2)#step5
> #Display BMI result
> print(paste("BMI:", BMI)) #step6
[1] "BMI: 24.4897959183673"
> cat(paste(" Underweight:", BMI<=18.4, "\n",
+           "Normal:", 18.5<=BMI && BMI<=24.9, "\n",
+           "Overweight:", 25.0<=BMI && BMI<=39.9, "\n",
+           "Obesity:", 40.0<=BMI)) #step7
Underweight: FALSE
Normal: TRUE
Overweight: FALSE
Obesity: FALSE
> |
```

## QUESTION 2

Coding:

```
17 #QUESTION2
18 #retrieve string 1 from user
19 str1 <- readline(prompt="Enter string 1: ") #step1
20 x <- format(str1) #Changing the case to upper # step2
21 x1 <- toupper(str1) #Changing the case to upper # step3
22 #retrieve string 2 from user
23 str2 <- readline(prompt="Enter string 2: ") #step4
24 y <- format(str2) #Changing the case to upper #step5
25 y1 <- toupper(str2) #Changing the case to upper # step6
26 cat(paste("This program compare 2 strings. Both input are similar:", x1==y1)) #step7
27
```

Output 1:

```
> #QUESTION2
> #retrieve string 1 from user
> str1 <- readline(prompt="Enter string 1: ") #step1
Enter string 1: test
> x <- format(str1) #Changing the case to upper # step2
> x1 <- toupper(str1) #Changing the case to upper # step3
> #retrieve string 2 from user
> str2 <- readline(prompt="Enter string 2: ") #step4
Enter string 2: exam
> y <- format(str2) #Changing the case to upper #step5
> y1 <- toupper(str2) #Changing the case to upper # step6
> cat(paste("This program compare 2 strings. Both input are similar:", x1==y1)) #step7
This program compare 2 strings. Both input are similar: FALSE
> |
```

Output 2:

```
> #QUESTION2
> #retrieve string 1 from user
> str1 <- readline(prompt="Enter string 1: ") #step1
Enter string 1: test
> x <- format(str1) #Changing the case to upper # step2
> x1 <- toupper(str1) #Changing the case to upper # step3
> #retrieve string 2 from user
> str2 <- readline(prompt="Enter string 2: ") #step4
Enter string 2: TEST
> y <- format(str2) #Changing the case to upper #step5
> y1 <- toupper(str2) #Changing the case to upper # step6
> cat(paste("This program compare 2 strings. Both input are similar:", x1==y1)) #step7
This program compare 2 strings. Both input are similar: TRUE
> |
```

### Output 3:

```
> #QUESTION2
> #retrieve string 1 from user
> str1 <- readline(prompt="Enter string 1: ") #step1
Enter string 1: Test
> x <- format(str1) #changing the case to upper # step2
> x1 <- toupper(str1) #Changing the case to upper # step3
> #retrieve string 2 from user
> str2 <- readline(prompt="Enter string 2: ") #step4
Enter string 2: TEST
> y <- format(str2) #Changing the case to upper #step5
> y1 <- toupper(str2) #Changing the case to upper # step6
> cat(paste("This program compare 2 strings. Both input are similar:", x1==y1)) #step7
This program compare 2 strings. Both input are similar: TRUE
> |
```

### QUESTION 3

Coding:

```
28 #QUESTION3
29 #retrieve name
30 x <- readline(prompt="Enter name: ")#step1
31 name <- toupper(x)#step2
32 #retrieve phone number
33 y <- readline(prompt="Enter phone number: ")#step3
34 pnum1 <- substr(y, 1, 3) # Extract characters from 1st to 3rd position.#step4
35 pnum2 <- substr(y, 7, 10)# Extract characters from 7th to 10th position.#step5
36 #Display result
37 cat("Hi,",name,". A verification code has been sent to ", pnum1,"-xxx",pnum2) #step6
```

Output:

```
> #QUESTION3
> #retrieve name
> x <- readline(prompt="Enter name: ")#step1
Enter name: falikh
> name <- toupper(x)#step2
> #retrieve phone number
> y <- readline(prompt="Enter phone number: ")#step3
Enter phone number: 0128791542
> pnum1 <- substr(y, 1, 3) # Extract characters from 1st to 3rd position.#step4
> pnum2 <- substr(y, 7, 10)# Extract characters from 7th to 10th position.#step5
> #Display result
> cat("Hi,",name,". A verification code has been sent to ", pnum1,"-xxx",pnum2) #step6
Hi, FALIKH . A verification code has been sent to 012 -xxx 1542
> |
```