UNIVERSITI TEKNOLOGI PETRONAS

TEB2164

Introduction to Data Science

Lab Assignment

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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:

```
#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

```

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:

```
#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

```

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:

```
#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
```

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
>
```