RWorksheet_lastname#3a.Rmd

me

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1. There is a built-in vector LETTERS contains the uppercase letters of the alphabet and letters which contains the lowercase letters of the alphabet.

```
LETTERS <- c("A", "B", "C", "D", "E", "F", "G", "H", "I", "J", "K", "L", "M", "N", "O", "P", "Q", "R",
```

a. You need to produce a vector that contains the first 11 letters.

```
first11Letters <- LETTERS[1:11]
first11Letters
```

```
##  [1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K"
```

b. Produce a vector that contains the odd numbered letters.

```
odd <- LETTERS[seq(1, 26, 2)]
odd
```

```
##  [1] "A" "C" "E" "G" "I" "K" "M" "O" "Q" "S" "U" "W" "Y"
```

c. Produce a vector that contains the vowels

```
vowels <- LETTERS[c(1,5,9,15,21)]
vowels
```

```
## [1] "A" "E" "I" "O" "U"
```

```
letters <- c("a", "b", "c", "d", "e", "f", "g", "h", "i", "j", "k", "l", "m", "n", "o", "p", "q", "r",
```

Based on the above vector letters: d. Produce a vector that contains the last 5 lowercase letters.

```
last5Letters <- letters[c(22,23,24,25,26)]
last5Letters
```

```
## [1] "v" "w" "x" "y" "z"
```

e. Produce a vector that contains letters between 15 to 24 letters in lowercase.

```
between15to24 <- letters[c(15:24)]
between15to24
```

```
##  [1] "o" "p" "q" "r" "s" "t" "u" "v" "w" "x"
```

2. Create a vector(not a dataframe) with the average temperatures in April for Tugue- garao City, Manila, Iloilo City, Tacloban, Samal Island, and Davao City. The average

temperatures in Celcius are 42, 39, 34, 34, 30, and 27 degrees.

```
avgtemp <- c(42, 39, 34, 34, 30, 27)

avgtemp
```

```
## [1] 42 39 34 34 30 27
```

a. What is the R code and its result for creating a character vector for the city/town of Tuguegarao City, Manila, Iloilo City, Tacloban,Samal Island, and Davao City? Name the object as city. The names should follow the same order as in the instruction.

```
city <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")

print(city)
```

```
## [1] "Tuguegarao City" "Manila"          "Iloilo City"     "Tacloban"
## [5] "Samal Island"    "Davao City"
```

b. The average temperatures in Celcius are 42, 39, 34, 34, 30, and 27 degrees. Name the object as temp. Write the R code and its output. Numbers should also follow what is in the instruction.

```
temp <- c(42, 39, 34, 34, 30, 27)

temp
```

```
## [1] 42 39 34 34 30 27
```

c. Create a dataframe to combine the city and the temp by using 'data.frame(). What the R code and its result?

```
df <- data.frame(city, temp)
df
```

```
##              city temp
## 1 Tuguegarao City   42
## 2          Manila   39
## 3     Iloilo City   34
## 4        Tacloban   34
## 5    Samal Island   30
## 6      Davao City   27
```

d. Associate the dataframe you have created in 2.(c) by naming the columns using the names() function. Change the column names by using names() function as City and Temperature. What is the R code and its result?

```
names(df) <- c("City", "Temperature")
df
```

```
##              City Temperature
## 1 Tuguegarao City          42
## 2          Manila          39
## 3     Iloilo City          34
## 4        Tacloban          34
## 5    Samal Island          30
## 6      Davao City          27
```

e. Print the structure by using str() function. Describe the output.

```
str(df)
```

```
## 'data.frame':    6 obs. of  2 variables:
##  $ City       : chr  "Tuguegarao City" "Manila" "Iloilo City" "Tacloban" ...
##  $ Temperature: num  42 39 34 34 30 27
```

f. From the answer in d, what is the content of row 3 and row 4 What is its R code and its output?

```
df[3:4,]
```

```
##          City Temperature
## 3 Iloilo City          34
## 4    Tacloban          34
```

g. From the answer in d, display the city with highest temperature and the city with the lowest temperature. What is its R code and its output?

```r
max_temp_city <- df[which.max(df$Temperature), "City"]
print(paste("City with highest temperature:", max_temp_city))
```

```
## [1] "City with highest temperature: Tuguegarao City"
```

```r
min_temp_city <- df[which.min(df$Temperature), "City"]
print(paste("City with lowest temperature:", min_temp_city))
```

```
## [1] "City with lowest temperature: Davao City"
```