Rworksheet_Aurelio#3a

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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.

```
alphabet <- LETTERS
alphabet
```

```
##  [1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K" "L" "M" "N" "O" "P" "Q" "R" "S"
## [20] "T" "U" "V" "W" "X" "Y" "Z"
```

```
alphabet_small <- letters
alphabet_small
```

```
##  [1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l" "m" "n" "o" "p" "q" "r" "s"
## [20] "t" "u" "v" "w" "x" "y" "z"
```

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

```
alphapet <- LETTERS
alphapet[1.11]
```

```
## [1] "A"
```

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

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

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

c. Produce a vector that contains the vowels

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

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

d. Produce a vector that contains the last 5 lowercase letters.

```
alphabet <- letters
last_fivelower <- tail (alphabet, 5)
last_fivelower
```

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

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

```
lower_alphabet <- letters
lower_alphabet [15:24]
```

```
##  [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

```
cities <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
temp <- c(42, 39, 34, 34, 30, 27)
cities
```

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

```
temp
```

```
## [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.

```
cities <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "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.

```
temperature <- c(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?

```
cities <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
temp <- c(42, 39, 34, 34, 30, 27)
frame = data.frame(cities,temp)
frame
```

```
##            cities 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 usingthe names() function. Change the column names by using names() function as City and Temperature. What is the R code and its result?

```
cities <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
temp <- c(42, 39, 34, 34, 30, 27)
frame = data.frame(cities,temp)
names (frame) <- c("City", "Temperature")
frame
```

```
##              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.

```
cities <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
temp <- c(42, 39, 34, 34, 30, 27)
frame = data.frame(cities,temp)
names (frame) <- c("City", "Temperature")
frame
```

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

```
str (frame)
```

```
## '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?

```
cities <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
temp <- c(42, 39, 34, 34, 30, 27)
frame = data.frame(cities,temp)
names (frame) <- c("City", "Temperature")
frame[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?

```
maximum <- max(frame$Temperature)
minimum <- min(frame$Temperature)

frame[frame$Temperature == maximum,]
```

```
##              City Temperature
## 1 Tuguegarao City          42
```

```
frame[frame$Temperature == minimum,]
```

```
##         City Temperature
## 6 Davao City          27
```