# Worksheet #3a

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2025-10-13

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

```
LETTERS[1:11]
```

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

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

```
LETTERS[seq(1, 26, 2)]
```

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

c. Produce a vector that contains the vowels

```
LETTERS[LETTERS %in% c("A", "E", "I", "O", "U")]
```

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

d. Vector that contains the last 5 lowercase letters

```
LETTERS[22:26]
```

```
## [1] "V" "W" "X" "Y" "Z"
```

e. Vector that contains letters between 15 to 24 (inclusive) in lowercase

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

##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")
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?

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

```
##              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?

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

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
```

Explanation: 'data.frame': 6 obs. of 2 variables: Your object df is a data frame with 6 observations (rows) and 2 variables (columns).

$ City : chr ... The first column named City is of type character vector (chr). It contains the city names as strings (like "Tuguegarao City", "Manila", etc.).

$ Temperature : num ... The second column named Temperature is of type numeric (num). It contains the average temperature values (42, 39, 34, etc.).

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