

RWorksheet_Animas#3a

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2024-09-30

#Problem 1

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

```
## [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"
```

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

```
## [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.

```
LETTERS[c(1:11)]
```

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

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

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

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

#c. Produce a vector that contains the vowels Based on the above vector letters:

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

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

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

```
letters[c(22:26)]
```

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

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

```
letters[c(15:24)]
```

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

#2

#a. What is the R code and its result for creating a character vector for the city/town of Tuguegarao City

```
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

```
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

```
city_temp_df <- data.frame(City, temp)
```

```
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.

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

```
city_temp_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(city_temp_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?

```
Content<-city_temp_df[3:4,]
Content
```

```
##           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.
max_temp <- max(city_temp_df$Temperature)
max_temp
```

```
## [1] 42
```

```
min_temp <- min(city_temp_df$Temperature)
min_temp
```

```
## [1] 27
```

```
#USING MATRIX
```

```
#2. Create a matrix of one to eight and eleven to fourteen with four columns and three rows.
```

```
#a. What will be the R code for the #2 question and its result?
```

```
matrix(c(1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14), nrow = 3, ncol = 4,)
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    1    4    7   12
## [2,]    2    5    8   13
## [3,]    3    6   11   14
```

```
#b. Multiply the matrix by two. What is its R code and its result?
```

```
matrix <- matrix(c(1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14), nrow = 3, ncol = 4,)
matrix_times_2 <- matrix * 2
matrix_times_2
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    2    8   14   24
## [2,]    4   10   16   26
## [3,]    6   12   22   28
```

```
#c. What is the content of row 2? What is its R code?
```

```
matrix_times_2[2,]
```

```
## [1]  4 10 16 26
```

```
#d. What will be the R code if you want to display the column 3 and column 4 in row 1 and row 2? What is the result?
matrix_times_2[c(1, 2), c(3, 4)]
```

```
##      [,1] [,2]
## [1,]   14   24
## [2,]   16   26
```

```
#e. What is the R code is you want to display only the columns in 2 and 3, row 3? What is its output?
matrix_times_2[3, c(2, 3)]
```

```
## [1] 12 22
```

```
#f. What is the R code is you want to display only the columns 4? What is its output?
matrix_times_2[,4]
```

```
## [1] 24 26 28
```

```
#g. Name the rows as isa, dalawa, tatlo and columns as uno, dos, tres, quatro for the matrix that was c
rownames(matrix_times_2) <- c("isa", "dalawa", "tatlo")
colnames(matrix_times_2) <- c("uno", "dos", "tres", "quatro")
matrix_times_2
```

```
##      uno dos tres quatro
## isa      2  8  14      24
## dalawa   4 10  16      26
## tatlo    6 12  22      28
```

```
#h. From the original matrix you have created in a, reshape the matrix by assigning a new dimension with
```

```
matrix <- matrix(c(1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14), nrow = 3, ncol = 4)
dim(matrix) <- c(6, 2)
matrix
```

```
##      [,1] [,2]
## [1,]    1    7
## [2,]    2    8
## [3,]    3   11
## [4,]    4   12
## [5,]    5   13
## [6,]    6   14
```

```
#3. An array contains 1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1
```

```
#a. Create an array for the above numeric values. Each values will be repeated twice What will be the R
```

```
NumArray <- array(rep(c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1), 2), c(2, 4, 3))
NumArray
```

```
## , , 1
##
##      [,1] [,2] [,3] [,4]
## [1,]    1    3    7    9
## [2,]    2    6    8    0
##
## , , 2
##
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    3    5    1    3
## [2,]    4    1    2    6
##
## , , 3
##
##      [,1] [,2] [,3] [,4]
## [1,]    7    9    3    5
## [2,]    8    0    4    1
```

#b. How many dimensions do your array have?

#The number of dimensions i created is 3 so that it can fit all the values.

#c. Name the rows as lowercase letters and columns as uppercase letters starting from the A. The array :

```
dimnames(NumArray)[[1]] <- c("a", "b")
dimnames(NumArray)[[2]] <- c("A", "B", "C", "D")
dimnames(NumArray)[[3]] <- c("1st-Dimensional Array", "2nd-Dimensional Array", "3rd-Dimensional Array")
NumArray
```

```
## , , 1st-Dimensional Array
##
##   A B C D
## a 1 3 7 9
## b 2 6 8 0
##
## , , 2nd-Dimensional Array
##
##   A B C D
## a 3 5 1 3
## b 4 1 2 6
##
## , , 3rd-Dimensional Array
##
##   A B C D
## a 7 9 3 5
## b 8 0 4 1
```