

RWorksheet_Ahumada#3

2023-10-04

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"
```

```
# 1  
# LETTERS vector  
# a.  
first11 <- LETTERS[c(1:11)]  
first11
```

```
## [1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K"  
# b.  
lenLet <- length(LETTERS)  
oddNum <- LETTERS[seq(lenLet) %% 2 == 1]  
oddNum
```

```
## [1] "A" "C" "E" "G" "I" "K" "M" "O" "Q" "S" "U" "W" "Y"  
# c  
vowels <- LETTERS[c(1,5,9,15,21)]  
vowels
```

```
## [1] "A" "E" "I" "O" "U"  
#letters vector  
# d  
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"  
last5 <- letters[c(22:26)]  
last5
```

```
## [1] "v" "w" "x" "y" "z"  
# e  
fifto24 <- letters[c(15:24)]  
fifto24
```

```
## [1] "o" "p" "q" "r" "s" "t" "u" "v" "w" "x"  
# 2  
# a
```

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

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

```
# c
city_temp <- data.frame(city,temp)

city_temp
```

```
##           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
names(city_temp) <- c("City", "Temperature")
city_temp
```

```
##           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
```

```
str(city_temp)
```

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

```
#The city_temp object's structure was shown by the code.
#It presented the data frame's contents.
#It showed the data frame's executive summary.
```

```
# f
twoRows <- city_temp[3:4,]
```

```
# g
highest <- city_temp[which.max(city_temp$Temperature),]
highest
```

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

lowest <- city_temp[which.min(city_temp$Temperature),]
lowest
```

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

```
# USING MATRICES
```

```
# 2 a
```

```
matr <- matrix(c(1:8,11:14), nrow = 3, ncol = 4)
matr
```

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

```
# b
```

```
mulMatr <- matr * 2
mulMatr
```

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

```
# c
```

```
rowTwoooo <- mulMatr[2,]
rowTwoooo
```

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

```
# d
```

```
twoColsAndRows <- mulMatr[c(1,2),c(3,4)]
twoColsAndRows
```

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

```
# e
```

```
twoColsOneRow <- mulMatr[3,c(2,3)]
twoColsOneRow
```

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

```
# f
```

```
fourCol <- mulMatr[,4]
fourCol
```

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

```
# g
```

```
dimnames(mulMatr) <- list(c("isa", "dalawa", "tatlo"), c("uno", "dos", "tres", "quatro"))
```

```
mulMatr
```

```
##      uno dos tres quatro
## isa    2   8   14    24
## dalawa 4  10   16    26
```

```
## tatlo      6  12  22    28
```

```
# h
```

```
matr
```

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

```
dim(matr) <- c(6,2)
```

```
matr
```

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

```
# ARRAYS
```

```
# 3 a
```

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

```
rep_values <- rep(values, each = 2)
```

```
arr <- array(rep_values, dim = c(2,4,3))
```

```
arr
```

```
## , , 1
```

```
##
```

```
##      [,1] [,2] [,3] [,4]
```

```
## [1,]    1    2    3    6
```

```
## [2,]    1    2    3    6
```

```
##
```

```
## , , 2
```

```
##
```

```
##      [,1] [,2] [,3] [,4]
```

```
## [1,]    7    8    9    0
```

```
## [2,]    7    8    9    0
```

```
##
```

```
## , , 3
```

```
##
```

```
##      [,1] [,2] [,3] [,4]
```

```
## [1,]    3    4    5    1
```

```
## [2,]    3    4    5    1
```

```
# 3 b
```

```
# three dimensions
```

```
# 3 c
```

```
dimnames(arr) <- list(
```

```
  letters[1:2], # row names
```

```
LETTERS[1:4], # col names
c("1st-Dimensional Array", "2nd-Dimensional Array", "3rd-Dimensional Array") # dim names
)

arr
```

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