

RWorksheets_lauron#3a.Rmd

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```
#1
C_letters <- LETTERS[1:26]
C_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"

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

#small
s_letters <- letters[1:26]

s_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] "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 first 11 letters

first_eleven <- LETTERS[1:11]
first_eleven

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

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

#b odd vector

odd_num<-LETTERS[seq(1,26, by=2)]

odd_num

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

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

#c vowels
```

```

vowel_letters <- LETTERS[LETTERS%in% c("A","E","I","O","U")]
vowel_letters

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

#d last lowercase vector

last_five <- letters[22:26]
last_five

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

#e letter between 15 to 24
letterfift_twenny <- letters[15:24]
letterfift_twenny

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

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

#2b
temp <- c(42, 39, 34, 34, 30,27)
temp

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

#2c
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

```

```

#output
# city temp

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

#2d
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

```

```

#output

#City Temperature

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

#2e

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

# 'data.frame':  6 obs. of  2 variables:

# $ City      : chr  "Tuguegarao City" " Manila" "Iloilo City" "Tacloban" ...

```

```
# $ Temperature: num 42 39 34 34 30 27

# -it separates the two variables by their name and specify the types.

#2f

city_temp[3:4, ]
```

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

```
#output
```

```
#City Temperature
```

```
#3 Iloilo City           34
```

```
#4  Tacloban            34
```

```
#2g lowest and highest temp
```

```
highest_temp_city <- city_temp[which.max(city_temp$Temperature), ]
highest_temp_city
```

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

```
#highest temp
```

```
# 1 Tuguegarao City       42
```

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

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

```
#Lowest City Temperature
```

```
# 6 Davao City           27
```

```
#Matrices
```

```
#2a
```

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

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

```
#output
```

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

```
#[1,]   1   4   7  12
```

```
#[2,] 2 5 8 13
#[3,] 3 6 11 14
```

#2b

```
matrix_two <- matrix_one * 2
matrix_two
```

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

#output

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

#2c

```
matrix_r <- matrix_one[2, ]
matrix_r
```

```
## [1] 2 5 8 13
```

```
#[1] 2 8
```

#2d

```
matrix_one[1:2, 3:4]
```

```
##      [,1] [,2]
## [1,] 7 12
## [2,] 8 13
```

```
#[,1] [,2]
#[1,] 7 12
#[2,] 8 13
```

#2e

```
matrix_one[3, 2:3]
```

```
## [1] 6 11
```

```
#[1] 6 11
```

#2f

```
matrix_one[, 4]
```

```
## [1] 12 13 14
```

```
#[1] 12 13 14
```

#2g

```
rownames(matrix_two) <- c("isa", "dalawa", "tatlo")
colnames(matrix_two) <- c("uno", "dos", "tres", "quatro")
```

```
print(matrix_two)
```

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

```
#output
```

```
#uno dos tres quatro
```

```
#isa      2   8   14    24
```

```
#dalawa    4  10   16    26
```

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

```
#2h
```

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

```
matrix_one
```

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

```
# [,1] [,2]
```

```
# [1,]    1    7
```

```
# [2,]    2    8
```

```
# [3,]    3   11
```

```
# [4,]    4   12
```

```
# [5,]    5   13
```

```
# [6,]    6   14
```

```
#Array
```

```
#3a
```

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

```
values_repeated <- rep(values, 2)
```

```
array_one <- array(values_repeated, dim = c(2, 4, 3))
```

```
array_one
```

```
## , , 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
```

```
#output
```

```
#, , 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
```

```
#3b
```

```
length(dim(array_one))
```

```
## [1] 3
```

```
#[1] 3
```

```
#3c
```

```
dimnames(array_one) <- list(letters[1:2],LETTERS[1:4],c("1st-Dimensional Array", "2nd-Dimensional Array", "3rd-Dimensional Array"))
array_one
```

```
## , , 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
```

```
#, , 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
```