RWorksheet_Arenal#3a.Rmd

Jo Carlo Arenal

2024-10-05

```
# 1
# a
first_11 <- LETTERS[1:11]
first_11
```

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

```
# b
odd_letters <- LETTERS[seq(1, length(LETTERS), by = 2)]
odd_letters
```

```
##  [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"
```

```
# d
last_5_lowercase <- letters[22:26]
last_5_lowercase
```

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

```
# e
letters_15_to_24 <- letters[15:24]
letters_15_to_24
```

```
##  [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
temperature_df <- data.frame(City = city, Temperature = temp)
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
```

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

```
str(temperature_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
row_3_4 <- temperature_df[3:4, ]
row_3_4
```

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

```
# g
highest_temp <- temperature_df[which.max(temperature_df$Temperature), ]
lowest_temp <- temperature_df[which.min(temperature_df$Temperature), ]
highest_temp
```

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

```
lowest_temp
```

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

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

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

```
# b
multiplied_matrix <- my_matrix * 2
```

```
multiplied_matrix
```

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

```
# c
row_2 <- my_matrix[2, ]
row_2
```

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

```
# d
subset_columns <- my_matrix[1:2, 3:4]
subset_columns
```

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

```
# e
row_3_subset <- my_matrix[3, 2:3]
row_3_subset
```

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

```
# f
column_4 <- my_matrix[, 4]
column_4
```

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

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

```
##        uno dos tres quatro
## isa      1   4    7     12
## dalawa   2   5    8     13
## tatlo    3   6   11     14
```

```
# h
reshaped_matrix <- matrix(my_matrix, nrow = 6, ncol = 2)
reshaped_matrix
```

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

```
# 4
# a
numeric_values <- c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1)
array_3d <- array(rep(numeric_values, 2), dim = c(2, 4, 3))
```

```
array_3d
```

```
## , , 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
dimensions <- dim(array_3d)
dimensions
```

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

```
# c
rownames(array_3d) <- letters[1:2]
colnames(array_3d) <- LETTERS[1:4]
dimnames(array_3d) <- list(c("1st-Dimensional Array", "2nd-Dimensional Array"), c("A", "B", "C", "D"))
array_3d
```

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