RWorksheet_Elizalde#3a

Christian Alimace I. Elizalde

2024-09-30

USING VECTORS

```
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
```

```
##  [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.

```
first11 <- LETTERS[1:11]
first11
```

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

#b.

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

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

#c.

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

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

#d.

```
last5 <- tail(letters, 5)
last5
```

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

#e.

```
between15_24 <- letters[15:24]
```

#2. #a

```
city <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
```

#b

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

#c

```
CityTemp <- data.frame(city, temp)
CityTemp
```

```
##              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(CityTemp) <- c("City", "Temperature")
CityTemp
```

```
##              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(CityTemp)
```

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

#f.

```
CityTemp[3:4 ,]
```

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

#g.

```
CityTemp[1 ,]
```

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

```
CityTemp[6 ,]
```

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

USING MATRICES

#2. #a.

```r
matrix1 <- matrix(c(1,2,3,4,5,6,7,8,11,12,13,14), ncol = 4, nrow= 3)
matrix1
```

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

#b.

```r
multiplied <- matrix1 * 2
multiplied
```

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

#c.

```r
matrix1[, 2]
```

```
## [1] 4 5 6
```

#d.

```r
multiplied[1:2, 3:4]
```

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

#e.

```r
multiplied[3, 2:3]
```

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

#f

```r
multiplied[, 4]
```

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

#g.

```r
rownames(multiplied) <- c("isa","dalawa","tatlo")

colnames(multiplied) <- c("uno", "dos", "tres", "quatro")
multiplied
```

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

#h.

```r
dim(multiplied) <- c(6, 2)
multiplied
```

```
##      [,1] [,2]
## [1,]    2   14
```

```
## [2,]    4   16
## [3,]    6   22
## [4,]    8   24
## [5,]   10   26
## [6,]   12   28
```

USING ARRAYS

#3 #a.

```
array1 <- array(c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1), c(2,4,3))
array1
```

```
## , , 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. the array has 3 dimensions #c.

```
dimnames(array1) <- list(c("a", "b"), c("A", "B", "C", "D"), c("1st-Dimensional Array", "2nd-Dimensional
array1
```

```
## , , 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
```