RWorksheet_asenjo#3a

Samuel Asenjo

2024-09-30

VECTORS 1.

```
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.

```
f11 <- LETTERS[1:11]
f11
```

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

b.

```
od <- LETTERS[seq(1, length(LETTERS), 2)]
od
```

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

c.

```
vowels <- c("A", "E", "I", "O", "U")
vowels
```

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

```
v <- LETTERS [LETTERS %in% vowels]
v
```

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

d.

```
l5 <- letters[22:26]
l5
```

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

e.

```
ll5 <- letters[15:24]
ll5
```

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

2. a.

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

b.

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

c.

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

```
##             city temp
## 1 Tugegarao City   42
## 2         Manila   39
## 3    Iloilo City   34
## 4       Tacloban   34
## 5   Samal Island   30
## 6     Davao City   27
```

d.

```
names(avgtemp) <- c("City", "Temp")
avgtemp
```

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

e.

```
s <- str(avgtemp)
```

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

```
s
```

```
## NULL
```

f. The content of row 3 and 4 are Iloilo City with 34 celsius and Tacloban with 34 celsius.

```
avgtemp[3,]
```

```
##          City Temp
## 3 Iloilo City   34
```

```
avgtemp[4,]
```

```
##       City Temp
## 4 Tacloban   34
```

g.

```
ht <- avgtemp[1,]
ht
```

```
##             City Temp
```

```
## 1 Tugegarao City   42
```

```
lt <- avgtemp[6,]
lt
```

```
##         City Temp
## 6 Davao City   27
```

MATRICES 2. a.

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

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

b.

```
m2 <- m * 2
m2
```

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

c.

```
r2 <- m2[2,]
r2
```

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

d.

```
m2[1:2, 3:4]
```

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

e.

```
m2[3, 2:3]
```

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

f.

```
m2[,4]
```

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

g.

```
rownames(m2) <- c("isa", "dalawa", "tatlo")
colnames(m2) <- c("uno", "dos", "tres", "quatro")
m2
```

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

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

h.

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

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

ARRAYS 3. a.

```
v <- c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1)
vr<- rep(v, each = 2)
a <- array(vr, dim = c(2, 4, length(vr)/(2*4)))
a
```

```
## , , 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
```

b. It has 3 dimensions

```
dim(a)
```

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

c.

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

```
## , , 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
```