RWorksheet_Bansara#3a

Abdul Azim Bansara

2023-10-04

```
#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"
```

```
#Based on the above vector LETTERS:
#1a You need to produce a vector that contains the first 11 letters.
Letter11 <- LETTERS[1:11]
Letter11
```

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

```
#1b Produce a vector that contains the odd numbered letters.

Letterodd <- letters[seq(1,length(letters),by=2)]
Letterodd
```

```
##  [1] "a" "c" "e" "g" "i" "k" "m" "o" "q" "s" "u" "w" "y"
```

```
#1c Produce a vector that contains the vowels
LetterVowel <- LETTERS[c(1,5,9,15,21)]
LetterVowel
```

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

```
LetterVowel
```

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

```
#Based on the above vector letters:

#1d Produce a vector that contains the last 5 lowercase letters.
letterlast5 <- letters[22:26]
letterlast5
```

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

```
#1e Produce a vector that contains letters between 15 to 24 letters in lowercase.

letters15_24 <- letters[15:24]
letters15_24
```

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

```r
#2 Create a vector(not a dataframe) with the average temperatures in April for Tuguegarao City, Manila,

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

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

```r
#2a
Cityvec <- c("Tuguegarao City", "Manila","Iloilo City","Tacloban","Samal Island","Davao City")
Cityvec
```

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

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

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

```r
#2c
Cityscape <- data.frame(Cityvec,temp)
Cityscape
```

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

```r
#2d
names(Cityscape) <- c("City","Temperature")


#2e
str(Cityscape)
```

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

```r
# it displayed the output with 6 obs. of 2 variables and the class of it.

#2f
row34 <- Cityscape[3:4,]
row34
```

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

```r
#2g
Hightemp <- Cityscape[which.max(Cityscape$Temperature),]
Hightemp
```

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

```r
Lowtemp <- Cityscape[which.min(Cityscape$Temperature),]
Lowtemp
```

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

```r
#USING MATRICES

#3 and a

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

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

```r
#3b
mtrix2 <- mtrix * 2
mtrix2
```

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

```r
#3c
mtrixrow2 <- mtrix[2,]
mtrixrow2
```

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

```r
#3d
mtrixcol34 <- mtrix2[c(1:2),c(3:4)]
mtrixcol34
```

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

```r
#3e
mtrixcolrow <- mtrix2[3, c(2:3)]
mtrixcolrow
```

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

```r
#3f
mtrixcol4 <- mtrix2[,4]
mtrixcol4
```

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

```r
#3g
dimnames(mtrix2) <- list(c("isa","dalawa","tatlo"),c("uno","dos","tres","quatro"))


#3h
mtrix
```

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

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

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

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

```
#USING ARRAYS

#4 An array contains 1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1

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

```
## , , 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
```

```
#4b
dim(arraynum)
```

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

```
#4c
colnames(arraynum) <- c("A","B","C","D")
arraynum
```

```
## , , 1
##
##      A B C D
## [1,] 1 3 7 9
## [2,] 2 6 8 0
##
## , , 2
```

```
##
##      A B C D
## [1,] 3 5 1 3
## [2,] 4 1 2 6
##
## , , 3
##
##      A B C D
## [1,] 7 9 3 5
## [2,] 8 0 4 1
```

```
rownames(arraynum) <- c("a","b")
arraynum
```

```
## , , 1
##
##   A B C D
## a 1 3 7 9
## b 2 6 8 0
##
## , , 2
##
##   A B C D
## a 3 5 1 3
## b 4 1 2 6
##
## , , 3
##
##   A B C D
## a 7 9 3 5
## b 8 0 4 1
```

```
dimnames(arraynum)[[3]] <- c("1st-Dimensional Array","2nd-Dimensional Array","3rd-Dimensional Array")
```