RWorksheet_Subosa#3.Rmd

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#1. LETTER Vector

```r
#a.) Produce a vector that contains the first eleven letters
eleven_l <- LETTERS[1:11]
print(eleven_l)
```

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

```r
#b.) Produce a vector that contains the odd numbered letters
odd_letters <- LETTERS[seq(1, 26, by = 2)]
print(odd_letters)
```

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

```r
#.c) Produce vectors that contains the vowels
vowels <- LETTERS[c(1, 5, 9, 15, 21)]
print(vowels)
```

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

```r
#d.) Produce a vector that contains the last 5 lowercase letters
last5letters <- letters[22:26]
print(last5letters)
```

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

```r
#e.) Produce a vector that contains letters between 15 to 24 letters in lowercase
lowercase <- letters[15:24]
print(lowercase)
```

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

#2. City Temperature

```r
#a.) Characters of the city
cities <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
print(cities)
```

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

```r
#b.) Vectors of the temperature
temp <- c(42, 39, 34, 34, 30, 27)
print(temp)
```

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

```r
#c.) Data frame to combine the city and the temp
citytemp <- data.frame(City = cities, Tempreture = temp)
print(citytemp)
```

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

```r
#d.) Rename the columns using names() function
names(citytemp) <- c("City", "Temperature")
print(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
```

```r
#e.) Print the structure using str()
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
#displays the output of citytemp
```

```r
#f.) What is the output of row 3 and row 4
(citytemp[3:4, ])
```

```
##          City Temperature
## 3 Iloilo City          34
## 4    Tacloban          34
#displays the observations in rows 3 and 4
```

```r
#g.) Display the city with highest temperature and the city with the lowest temperature.
(citytemp[which.max(citytemp$Temp), ])
```

```
##              City Temperature
## 1 Tuguegarao City          42
(citytemp[which.min(citytemp$Temp), ])
```

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

#3. Using Matrices #Create a matrix of one to eight and eleven to fourteen with four columns and three rows

```r
#a.) What will be the R code for the #2 question and its result?
matrix1 <- matrix(c(1:8, 11:14), nrow = 3, ncol = 4, byrow = TRUE)
print(matrix1)
```

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

#It displays the output has 3 rows and 4 columns with values from 1 to 8 and 11 to 14

#b.) Multiply the matrix by two. What is its R code and its result?
```
matrix_multiply <- matrix1 * 2
print(matrix_multiply)
```

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

#The output's values has been multiplied to 2

#c.) What is the content of row 2? What is its R code?
```
row_matrix <- matrix1[2, ]
print(row_matrix)
```

```
## [1] 5 6 7 8
```

#d.) What will be the R code if you want to display the column 3 and column 4 in row 1 and row 2? What
```
mtrx <- matrix1[1:2, 3:4]
print(mtrx)
```

```
##      [,1] [,2]
## [1,]    3    4
## [2,]    7    8
```

#e.) What is the R code is you want to display only the columns in 2 and 3, row 3? What is its output?
```
nmtrx <- matrix1[3, 2:3]
print(nmtrx)
```

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

#f.) What is the R code is you want to display only the columns 4? What is its output?
```
col4 <- matrix1[ , 4]
print(col4)
```

```
## [1]  4  8 14
```

#g.) Name the rows as isa, dalawa, tatlo and columns as uno, dos, tres, quatro for the matrix that was
```
rownames(matrix_multiply) <- c("isa", "dalawa", "tatlo")
colnames(matrix_multiply) <- c("uno", "dos", "tres", "quatro")
print(matrix_multiply)
```

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

#h.) New dimensions should have 2 columns and 6 rows
```
dim(matrix1) <- c(6, 2)
print(matrix1)
```

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

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

4. Using Arrays

```r
#a.) Create an array with the values repeated twice
values <- rep(c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1), 2)
# Create a three-dimensional array with 4 columns, 2 rows, and calculate the depth
array_1 <- array(values, dim = c(2, 4, 3))
print(array_1)
```

```
## , , 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
```

```r
#b.) How many dimensions do your array have?
dim(array_1)
```

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

```r
#c.) Assign row and column names
dimnames(array_1) <- list(c("a", "b"), c("A", "B", "C", "D"),
                          c("1st-Dimensional Array", "2nd-Dimensional Array", "3rd-Dimensional Array"))
print(array_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
```

4

```
## a 7 9 3 5
## b 8 0 4 1
```