Worksheet3 RMarkdown

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2023-10-04

```
1.
```

```
## [1] 1
#a.
LETTERS[1:11]
```

```
##  [1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K"
#b.
LETTERS[c(1,3,5,7,9,11,13,15,17,19,21)]
```

```
##  [1] "A" "C" "E" "G" "I" "K" "M" "O" "Q" "S" "U"
#c.
LETTERS[c(1,5,9,15,21)]
```

```
## [1] "A" "E" "I" "O" "U"
#d.
letters[22:26]
```

```
## [1] "v" "w" "x" "y" "z"
#e.
letters[c(15:24)]
```

```
##  [1] "o" "p" "q" "r" "s" "t" "u" "v" "w" "x"
2.
```

```
## [1] 2
#a.
city <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban","Samal Island", "Davao City")
```

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

```
#c.
combined <- data.frame(city, temp)
combined
```

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

```r
#d.
names(combined)[names(combined) == "city"] <- "City"
names(combined)[names(combined) == "temp"] <- "Temperature"
combined
```

```
##              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. The structure shows it is a dataframe with 6 observations (rows) of 2 variables (columns)
str(combined)
```

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

```r
#f.
combined[c(3,4),]
```

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

```r
#g.
combined[c(1,6),]
```

```
##              City Temperature
## 1 Tuguegarao City          42
## 6      Davao City          27
```

```r
2.
```

```
## [1] 2
```

```r
#a.
matrix1 <- matrix(c(1:8, 11:14), nrow = 3, ncol = 4)
matrix1
```

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

```r
matrix2 <- matrix1 * 2
matrix2
```

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

```r
row_2 <- matrix1[2, ]
row_2
```

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

```r
subset_matrix <- matrix1[1:2, 3:4]
subset_matrix
```

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

```r
row_3_subset <- matrix1[3, 2:3]
row_3_subset
```

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

```r
column_4 <- matrix1[, 4]
column_4
```

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

```r
rownames(matrix1) <- c("isa", "dalawa", "tatlo")
colnames(matrix1) <- c("uno", "dos", "tres", "quatro")
matrix1
```

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

```r
reshaped_matrix <- matrix1
dim(reshaped_matrix) <- c(6, 2)
reshaped_matrix
```

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

```r
3.
```

```
## [1] 3
```

```r
#a.
values <- c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1, 1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1)

array1 <- array(values, dim = 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 three dimensions: rows, columns, and the third dimension created in part (a).

```
row_names <- letters[1:2]
col_names <- LETTERS[1:4]
dimnames(array1) <- list(row_names, col_names, c("1st-Dimensional Array", "2nd-Dimensional Array", "3rd-
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
```