#— #date: “2023-10-04” #—

#{r setup, include=FALSE} #knitr::opts_chunk$set(echo = TRUE) #

R Markdown

#This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

#When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

#“‘

Including Plots

#You can also embed plots, for example:

#{r pressure, echo=FALSE} #plot(pressure) #

#Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

UpperLetters<- LETTERS [1:26] UpperLetters

LowerLetters<- letters [1:26] LowerLetters

#a. First_11 <- LETTERS [1:11] First_11 #b. OddLetters <- UpperLetters [c(TRUE, FALSE)] OddLetters #c. VowelLetters <- LETTERS [c(1,5,9,15,21)] VowelLetters #d. LastLetters <- letters [c(22,23,24,25,26)] LastLetters #e. BetLetters <- letters [15:24] BetLetters

#2. #a. city <- c(“Tuguegarao City”, “Manila”, “Iloilo City”, “Tacloban”, “Samal Island”, “Davao City”) city #b. temp <- c(42,39,34,34,30,27) temp #c. data <- data.frame(city, temp) data #d. names(data) <- c(“City”, “Temperature”) data #e. str(df) #The output function (x, df1, df2, ncp, # log = FALSE)

#f. data [c(3, 4),] #data [c(3, 4),] # City Temperature #3 Iloilo City 34 #4 Tacloban 34

#g. max_temp_city <- data[which.max(data$Temperature), "City"] $min_temp_city <- -data[which.min(data$Temperature), “City”] max_temp_city min_temp_city #max_temp_city #[1] “Tuguegarao City” #> min_temp_city #[1] “Davao City”

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

#a. What will be the R code for the #2 question and its result?

matrix(c(1:8, 11:14), ncol=4, nrow=3,)

#matrix(c(1:8, 11:14), ncol=4, nrow=3,) # [,1] [,2] [,3] [,4] #[1,] 1 4 7 12 #[2,] 2 5 8 13 #[3,] 3 6 11 14

#———————————————————————————— #b. Multiply the matrix by two. What is its R code and its result?

2 * matrix(c(1:8, 11:14), ncol=4, nrow=3)

#2 * matrix(c(1:8, 11:14), ncol=4, nrow=3) # [,1] [,2] [,3] [,4] #[1,] 2 8 14 24 #[2,] 4 10 16 26 #[3,] 6 12 22 28

#———————————————————————————— #c. What is the content of row 2? What is its R code?

matrix(c(1:8, 11:14), ncol=4, nrow=3)[2,] #matrix(c(1:8, 11:14), ncol=4, nrow=3)[2,] #[1] 2 5 8 13

#———————————————————————————— #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 is its output?

matrix(c(1:8, 11:14), nrow = 3, ncol = 4)[1:2, 3:4] #matrix(c(1:8, 11:14), nrow = 3, ncol = 4)[1:2, 3:4] # [,1] [,2] #[1,] 7 12 #[2,] 8 13

#——

#e. What is the R code is you want to display only the columns in 2 and 3, row 3? What is its output? matrix(c(1:8, 11:14), nrow = 3, ncol = 4)[3, 2:3] #[1] 6 11 #——

#f. What is the R code is you want to display only the columns 4? What is its output? matrix(c(1:8, 11:14), nrow = 3, ncol = 4)[, 4] #[1] 12 13 14

#—— #g. Name the rows as isa, dalawa, tatlo and columns as uno, dos, tres, quatro for the matrix that was created in b. What is its R code and corresponding output? mat <- 2* matrix(c(1:8, 11:14), nrow = 3, ncol = 4) rownames(mat) <- c("isa", "dalawa", "tatlo") colnames(mat) <- c("uno", "dos", "tres", "quatro") mat

#mat <- 2* matrix(c(1:8, 11:14), nrow = 3, ncol = 4) #rownames(mat) <- c("isa", "dalawa", "tatlo") #colnames(mat) <- c("uno", "dos", "tres", "quatro") #mat

#—— # h. From the original matrix you have created in a, reshape the matrix by assigning a new dimension with dim(). New dimensions should have 2 columns and 6 rows. What will be the R code and its output? newmat <- matrix(c(1:8, 11:14), nrow = 3, ncol = 4) dim(newmat) <- c(6, 2) newmat # [,1] [,2] #[1,] 1 7 #[2,] 2 8 #[3,] 3 11 #[4,] 4 12 #[5,] 5 13 #[6,] 6 14

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

#a.Create an array for the above numeric values. Each values will be repeated twice #What will be the R code if you are to create a three-dimensional array with 4 columns and #2 rows. What will be its output?

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

ArrayVal <- array (c (1:3, 6:9, 0, 3:5, 1), c (2,4,3)) ArrayVal # [,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.How many dimensions do your array have? dim(ArrayVal) #[1] 2 4 3

#—— #c.Name the rows as lowercase letters and columns as uppercase letters starting from #the A. The array names should be "1st-Dimensional Array", "2nd-Dimensional Array", and #"3rd-Dimensional Array". What will be the R codes and its output?

data <- c(1:3, 6:9, 0, 3:5, 1) ArrayVal <- array(data, dim = c(2, 4, 3))

dimnames(ArrayVal) <- list(c("a", "b"), c("A", "B", "C", "D"), c("1st-Dimensional Array", "2nd-Dimensional Array", "3rd-Dimensional Array"))

ArrayVal

#, , 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

#---