RWorksheet_Deocampo#4a.Rmd

2023-10-25

1

shoeSize <- c(6.5, 9.0, 8.5, 8.5, 10.5, 7.0, 9.5, 9.0, 13.0, 7.5, 10.5, 8.5, 12.0, 10.5, 13.0, 11.5, 8.5,5.0,10.0,6.5,7.5,8.5,10.5,8.5,10.5,11.0,9.0,13.0)

height <- c(66.0, 68.0, 64.5, 65.0, 70.0,64.0,70.0,71.0,72.0,64.0,74.5,67.0,71.0,71.0,77.0,72.0,59.0,62.0,72.0,66.0,64.0,67.0,73.0,69.0,

gender <- c("F", "F", "F", "F", "M", "F", "F", "F", "M", "F", "M" , "F", "M", "M", "M", "M", "F", "F", "M", "F", "F", "M", "M", "F", "M", "M", "M", "M")

householdData <- data.frame(ShoeSize = shoeSize, Height = height, Gender = gender)

householdData

1.a

In the data, there are three variables which are the shoe size, height, and gender. There are 28 observations

1.b

males <- householdData[householdData$Gender == "M",] males

females <- householdData[householdData$Gender == "F",] females

1.c

meanOfShoeSize <- mean(householdData$ShoeSize) meanOfShoeSize

meanOfHeight <- mean(householdData$Height) meanOfHeight

1.d

The relationship of the two is that the shoe size is directly proportional to the height. If the height is small, the shoe size is also small.

#————————-

2

months_vector <- c("March","April","January","November","January","September","October","September","November","Au

months_vector

factor_months_vector <- factor(months_vector)

factor_months_vector

————-

3

summary(months_vector) summary(factor_months_vector)

In the summary of months_vector, it shows the number of observations, class, and mode of the vector.

In the summary of factor_months_vector, it shows the frequency of each months.

Both are useful in different cases where the no. of observations, class, mode, or the frequency is needed.

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4

factor_data <- c(“East”, “West”, “North”) factor_frequency <- c(1,4,3)

new_order_data <- factor(factor_data,levels = c(“East”,“West”,“North”))

print(new_order_data)

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5

imported_table <- read.table(file = “/cloud/project/RWorksheet_Deocampo#4/import_march.csv”, header = TRUE, sep = “,”)

imported_table

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6

randomNum <- readline(prompt = “Enter number from 1 to 50:”)

#cant knit if there is as.numeric #randomNum <- as.numeric(randomNum)

paste(“The number you have chosen is”, randomNum)

if (randomNum > 50) { paste(“The number selected is beyond the range of 1 to 50”) } else if (randomNum == 20) { paste(“TRUE”) } else { paste(randomNum) }

7

minimumBills <- function(price) {

minBills <- price %/% 50 paste("The minimum no. of bills:", minBills) }

minimumBills(90)

8.a

names <- c("Annie", "Thea", "Steve", "Hanna") grade1 <- c(85,65,75,95) grade2 <- c(65,75,55,75) grade3 <- c(85,90,80,100) grade4 <- c(100,90,85,90)

mathScore <- data.frame(Name = names, Grade1 = grade1, Grade2 = grade2, Grade3 = grade3, Grade4 = grade4)

8.b

mathScore$Average <- -(mathScoreGrade1 + mathScoreGrade2 + mathScoreGrade3 + mathScore$Grade4) / 4

highscorers <- mathScore[mathScore$Average > 90,] highscorers

if (nrow(highscorers) > 0) { paste(highscorersName, "'saveragegradethissemesteris", high_scorersAverage) } else { paste("No students have an average math score over 90.") }

8.c

firstTest <- sum(mathScore$Grade1) / nrow(mathScore) firstTest

secondTest <- sum(mathScore$Grade2) / nrow(mathScore) secondTest

thirdTest <- sum(mathScore$Grade3) / nrow(mathScore) thirdTest

fourthTest <- sum(mathScore$Grade4) / nrow(mathScore) fourthTest

if (firstTest < 80) { paste("The 1st test was difficult.") } else if(secondTest < 80) { paste("The 2nd test was difficult.") } else if(thirdTest < 80) { paste("The 3rd test was difficult.") } else if(fourthTest < 80) { paste("The 4th test was difficult.") } else { paste("No test had an average score less than 80.") }

8.d

annie scores

if (mathScore[1,2] > mathScore[1,3] && mathScore[1,2] > mathScore[1,4] && mathScore[1,2] > mathScore[1,5]) { annieHighest <- mathScore[1,2] } else if (mathScore[1,3] > mathScore[1,4] && mathScore[1,3] > mathScore[1,5]) { annieHighest <- mathScore[1,3] } else if (mathScore[1,4] > mathScore[1,5] && mathScore[1,2] > mathScore[1,5]) { annieHighest <- mathScore[1,4] } else { annieHighest <- mathScore[1,5] }

thea scores

if (mathScore[2,2] > mathScore[2,3] && mathScore[2,2] > mathScore[2,4] && mathScore[2,2] > mathScore[2,5]) { theaHighest <- mathScore[2,2] } else if (mathScore[2,3] > mathScore[2,4] && mathScore[2,3] > mathScore[2,5]) { theaHighest <- mathScore[2,3] } else if (mathScore[2,4] > mathScore[2,5] && mathScore[2,2] > mathScore[2,5]) { theaHighest <- mathScore[2,4] } else { theaHighest <- mathScore[2,5] }

steve scores

if (mathScore[3,2] > mathScore[3,3] && mathScore[3,2] > mathScore[3,4] && mathScore[3,2] > mathScore[3,5]) { steveHighest <- mathScore[3,2] } else if (mathScore[3,3] > mathScore[3,4] && mathScore[3,3] > mathScore[3,5]) { steveHighest <- mathScore[2,3] } else if (mathScore[3,4] > mathScore[3,5] && mathScore[3,2] > mathScore[3,5]) { steveHighest <- mathScore[3,4] } else { steveHighest <- mathScore[3,5] }

hanna scores

if (mathScore[4,2] > mathScore[4,3] && mathScore[4,2] > mathScore[4,4] && mathScore[4,2] > mathScore[4,5]) { hannaHighest <- mathScore[4,2] } else if (mathScore[4,3] > mathScore[4,4] && mathScore[4,3] > mathScore[4,5]) { hannaHighest <- mathScore[2,3] } else if (mathScore[4,4] > mathScore[4,5] && mathScore[4,2] > mathScore[4,5]) { hannaHighest <- mathScore[4,4] } else { hannaHighest <- mathScore[4,5] }

mathScore$HighestGrades <- c(annieHighest, theaHighest, steveHighest, hannaHighest)

above90 <- mathScore[mathScore$HighestGrades > 90,] above90

if (nrow(above90) > 0) { paste(above90$Name, "'s highest grade this semester is", above90HighestGrade) } else { paste("No students have an average math score over 90.") }

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