RWorksheet_Suero#4a

2023-10-25

#1 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

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,

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

household_data

#a. # The data shows a coloumn for shoe size,a coloumn for height and a coloumn for gender # With the corresponding values for each value. The data set has 28 data points with 3 Coloumns

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#b.

males <- household_data[household_data$Gender == "M",]$males$females <- -household_data[household_data$Gender == "F",] females

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#c. mean_shoe_size <- mean(df$Shoe_Size)$mean_height <- -mean(df$Height)

mean_shoe_size mean_height

#d. The relationship between the two factors lies in their direct proportionality, where a smaller height corresponds to a smaller shoe size.

#2 months_vector <- c("March","April","January","November","January", "September","October","September","November", "January","November","November","February","May","August", "July","December","August","August","September","Novem "April") factor_months_vector <- factor(months_vector) factor_months_vector

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#3 summary(months_vector) summary(factor_months_vector) #The summary for "months_vector" provides information about the dataset's size, data type, and its most common value.

#Conversely, in the summary of "factor_months_vector," you can see how often each month appears.

#These summaries serve different purposes, offering insights into dataset characteristics and the distribution of categorical values as needed.

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

newOrderdata <- factor(factorData,levels = c(“East”,“West”,“North”))

print(newOrderdata)

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5

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

#————

6

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

#error can’t knit when there is numeric #randomNum <- as.numeric(randomNum)

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

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

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#7

minimum_Bills <- function(price) {

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

minimum_Bills(90)

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#8 # 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)

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

grade

#8.b

math$Average <- -(math$Grade1 + math$Grade2 + math$Grade3 + math$Grade4) / 4

highScores <- math[math$Average > 90,] highScores

if (nrow(highScores) > 0) { paste(highScores$Name, "'s average grade this semester is", high scorers$Average) } else { paste(“No students have an average math score over 90.”) }

8.c

first_Test <- sum(math$Grade1) / nrow(math) first_Test

second_Test <- sum(math$Grade2) / nrow(math) second_Test

third_Test <- sum(math$Grade3) / nrow(math) third_Test

fourth_Test <- sum(math$Grade4) / nrow(math) fourth_Test

if (first_Test < 80) { paste("The 1st test was difficult.") } else if(second_Test < 80) { paste("The 2nd test was difficult.") } else if(third_Test < 80) { paste("The 3rd test was difficult.") } else if(fourth_Test < 80) { paste("The 4th test was difficult.") } else { paste("No test had an average score less than 80.") }

8.d

Annie scores in the semester

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 in the semester

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 in the semester

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 in the semester

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, "'shighestgradethissemesteris", above90HighestGrade) } else { paste("No students have an average math score over 90.") }

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