Rworksheet_loredo#3b.Rmd

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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.

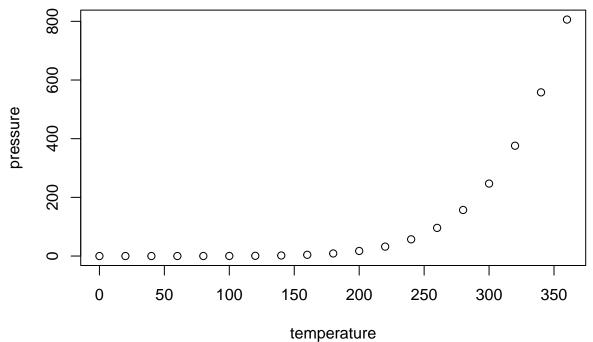
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

summary(cars)

```
##
        speed
                         dist
##
    Min.
           : 4.0
                    Min.
                            :
                               2.00
##
    1st Qu.:12.0
                    1st Qu.: 26.00
##
    Median:15.0
                    Median: 36.00
            :15.4
                            : 42.98
##
    Mean
                    Mean
##
    3rd Qu.:19.0
                    3rd Qu.: 56.00
##
    Max.
            :25.0
                    Max.
                            :120.00
```

Including Plots

You can also embed plots, for example:



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

- #1. Create a data frame data <- data.frame(ShoeSize = shoe_size, Height = height, Gender= gender)
- #a. Describe the data. summary(data)
- #b. Create a subset by males and females with their corresponding shoe size and height. #What its result? Show the R scripts.

males <- data[dataGender == "M", c("Gender", "ShoeSize", "Height")] females <- data[dataGender == "F", c("Gender", "ShoeSize", "Height")]

males females

#c. Find the mean of shoe size and height of the respondents. Write the R scripts and it result. mean shoe size <- mean(dataShoeSize)mean_height < -mean(dataHeight)

mean shoe size mean height

- #d. Is there a relationship between shoe size and height? Why? #No, Both shoe size and height can change over a person's lifetime. correlation <- cor(dataShoeSize, dataHeight) correlation
- #2. Create a character vector of months months <- c("March", "April", "January", "November", "January", "September", "October", "September", "November", "August", "January", "November", "November", "February", "May", "August", "July", "December", "August", "August", "September", "November", "February", "April") factor_months_vector <- factor(months) print(factor_months_vector) levels(factor_months_vector) #3 summary # character vector #for numerical analysis summary(months) # the factor # for categorical analysis summary(factor_months_vector)
- #4 Create a vector and factor direction_vector <- c("north", "east", "west") frequency_vector <- c(1, 4, 3) factor_data <- factor(direction_vector, levels = c("east", "west", "north"), c(1, 4, 3)) print(factor_data)
- #5 A Import the excel library(readr) import_march <- read_csv("import_march.csv")
- #5 B.View the dataset head(import march)
- #6 Full Search num <- readline(prompt= "Enter number from 1 to 50:") paste("Your entered number is", num) if(num == 50) { paste("The number you selected is beyond the range of 1 to 50") } else if (num <= 50){ paste("TRUE") } else { paste(num) } #7 Change minimum <- function (price) { bill <- price%/% 50 paste("The minimum number of bills:", bill) } snackprice <- 250 minimum(snackprice)
- #8 A. Create a dataframe name <- 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) mathgrades <- data.frame(name, grade1, grade2, grade3, grade4) print(mathgrades)
- #8 B. the average score of students whose average math score over 90 points during the semester. mathgrades <- data.frame(name = 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)) print(mathgrades) mathgrades $average < -(mathgrades grade1 + mathgrades grade2 + mathgrades grade3 + mathgrades grade4)/4top < -mathgrades[mathgrades average >= 90,] top if (nrow(top) > 0) { paste(topname, "saverage gradethis semesteris", topaverage) } else { paste("No students have an average math score over 90.") }$
- #8 C. the average score was less than 80 out of 4 tests. test1 <- sum(mathgrades)rade1)/nrow(mathgrades)test1test2 < $-sum(mathgrades \text{grade2}) / \text{nrow}(\text{mathgrades}) \text{test2} \text{ test3} <- \text{sum}(\text{mathgrade3}) / \text{nrow}(\text{mathgrades}) \text{test3} \text{ test4} < \\ -sum(mathgrades \text{grade4}) / \text{nrow}(\text{mathgrades}) \text{ test4} \text{ if (test1} < 80) { paste("The 1st test was difficult") } \text{ else if (test2} < 80) { paste("The 2nd test was difficult") } \text{ else if (test3} < 80) { paste("The 3rd test was difficult") } \text{ else if (test4} < 80) { paste("The 4th test was difficult") } \text{ else { paste("No test had an average grade less than 80") }}$

#8 D.students whose highest score for a semester exceeds 90 points. # annie scores if (mathgrades[1,2] > mathgrades[1,3] && mathgrades[1,2] > mathgrades[1,4] && mathgrades[1,2] > mathgrades[1,5]) { annie <- mathgrades[1,2] } else if (mathgrades[1,3] > mathgrades[1,4] && mathgrades[1,3] > mathgrades[1,5]) { annie <- mathgrades[1,3] } else if (mathgrades[1,4] > mathgrades[1,5] && mathgrades[1,2] > mathgrades[1,5]) { annie <- mathgrades[1,4] } else { annie <- mathgrades[1,5] }

thea scores

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

steve scores

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

hanna scores

```
if (mathgrades[4,2] > mathgrades[4,3] && mathgrades[4,2] > mathgrades[4,4] && mathgrades[4,2] > mathgrades[4,5]) { hanna <- mathgrades[4,2] } else if (mathgrades[4,3] > mathgrades[4,4] && mathgrades[4,3] > mathgrades[4,5]) { hanna <- mathgrades[4,3] } else if (mathgrades[4,4] > mathgrades[4,5] && mathgrades[4,2] > mathgrades[4,5]) { hanna <- mathgrades[4,4] } else { hanna <- mathgrades[4,5] } mathgrades$highest <- c(annie, thea, steve, hanna) abovegradeof90 <- mathgrades[mathgrades$highest >= 90,] if (nrow(abovegradeof90) > 0) { paste(abovegradeof90name, "'shighestgradethissemesteris", abovegradeof90highest) } else { paste("No students have an average math score over 90.") }
```