Running head: MODULE 4 - CRITICAL THINKING - OPTION 2

Module 4 - Critical Thinking - Option 2

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install.packages("dplyr")

# Step 1: Load data

tScore\_before <- c(40, 62, 74, 22, 64, 65, 49, 49, 49)

tScore\_after <- c(68, 61, 64, 76, 90, 75, 66, 60, 63)

# Create a data frame

my\_data <- data.frame(

group = rep(c("Score Before", "Score After"), each = 9),

scores = c(tScore\_before, tScore\_after)

)

# Step 2: Print all data

print(my\_data)

# Step 3: Compute summary statistics by groups

library(dplyr)

group\_by(my\_data, group) %>%

summarise(

count = n(),

mean = mean(scores, na.rm = TRUE),

sd = sd(scores, na.rm = TRUE)

)

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# Step 4: Compute Unpaired Two Sample t-test

res <- t.test(tScore\_before, tScore\_after, var.equal = TRUE)

res

# Step 5: Compute independent t-test

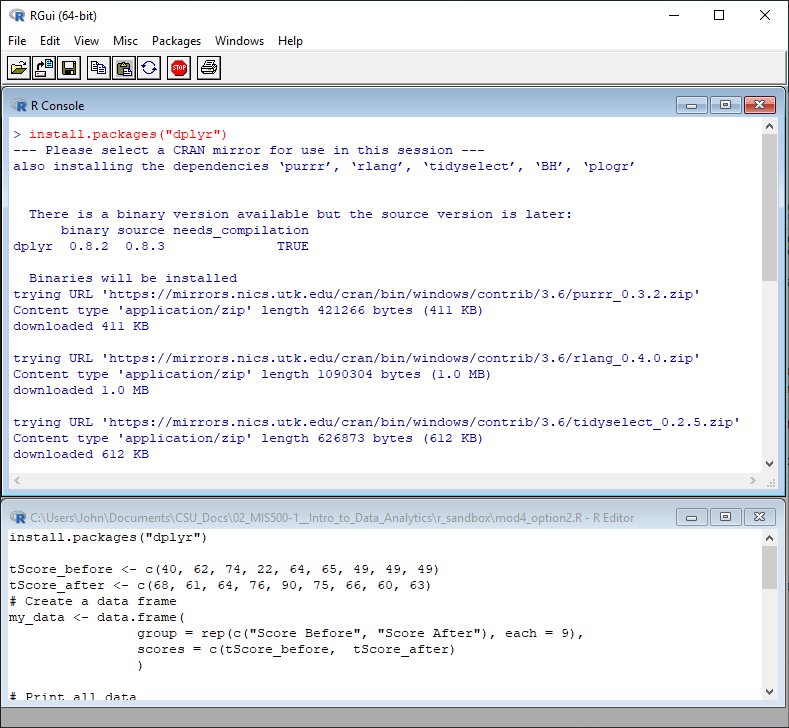
res <- t.test(scores ~ group, data = my\_data, var.equal = TRUE)

res

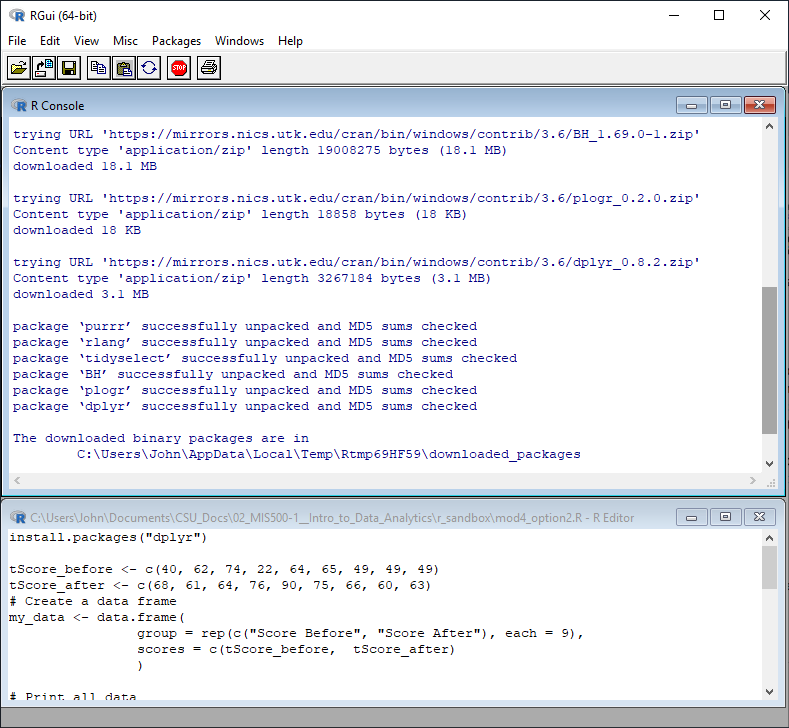
# Step 6: test whether the average "Score Before" is less than the average "Score After"

t.test(scores ~ group, data = my\_data, var.equal = TRUE, alternative = "less")

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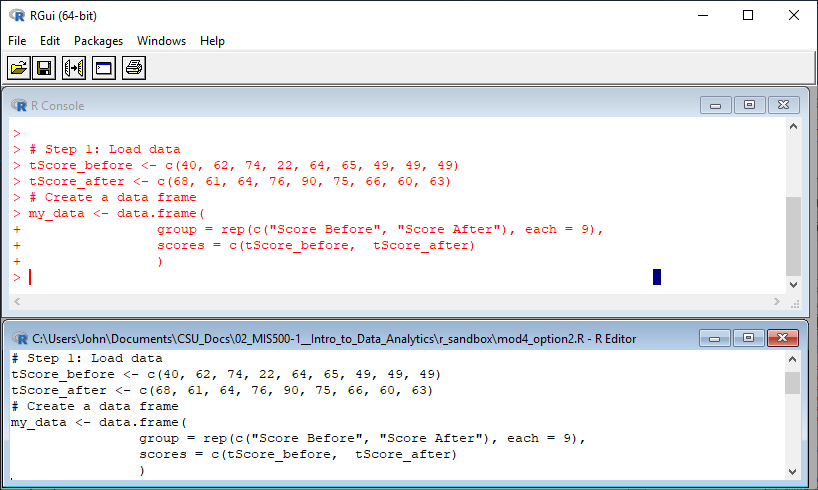


*Figure 1*. Installation of the “dplyr” package, part 1.

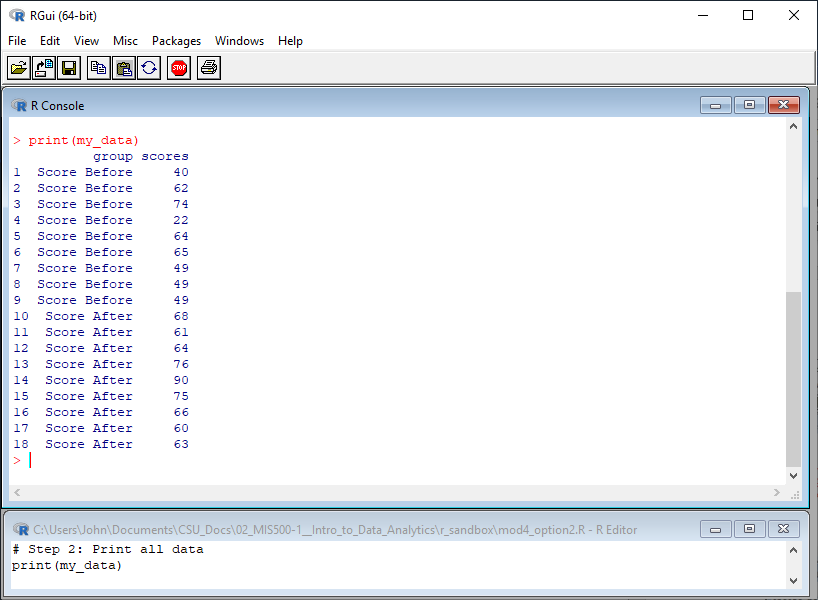


*Figure 2*. Installation of the “dplyr” package, part 2.

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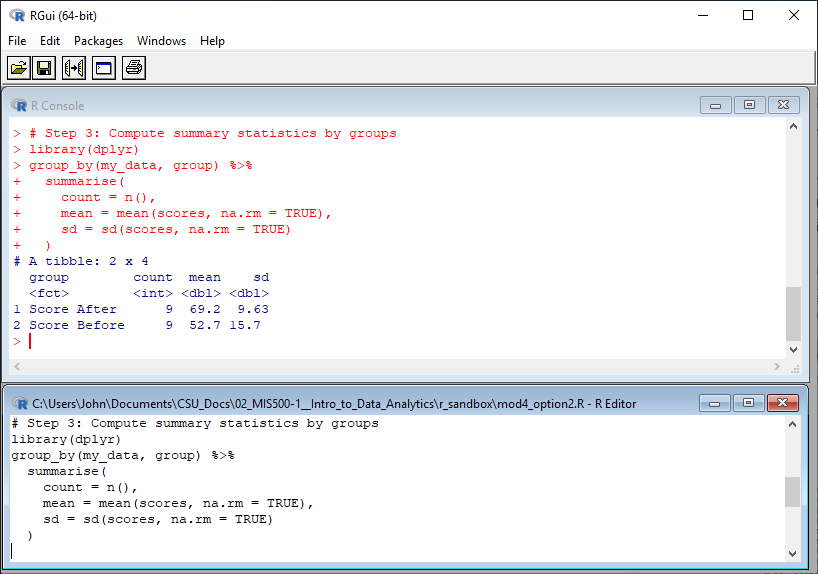


*Figure 3*. Step 1: Load data and create data frame.

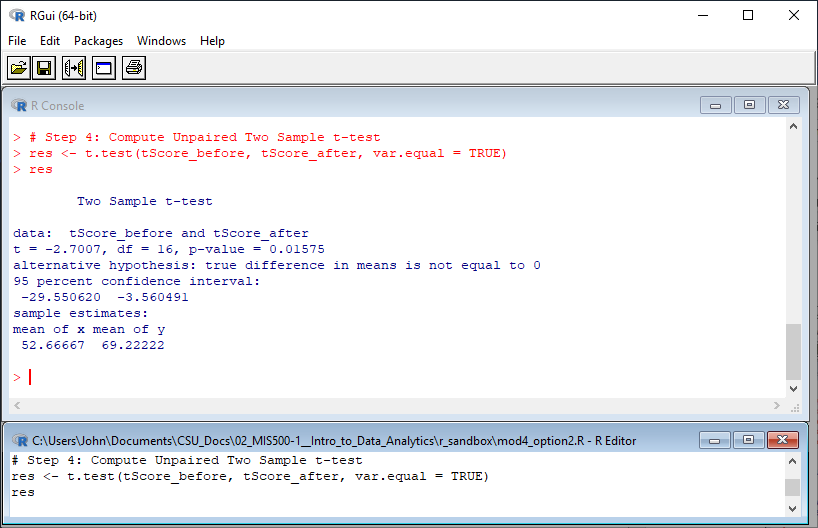


*Figure 4*. Step 2: Print all the data.

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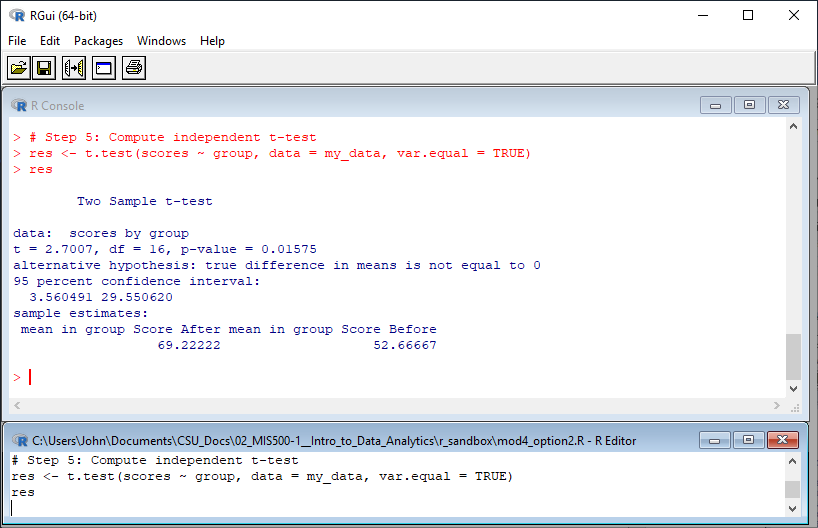


*Figure 5*. Step 3: Compute summary statistics by groups.

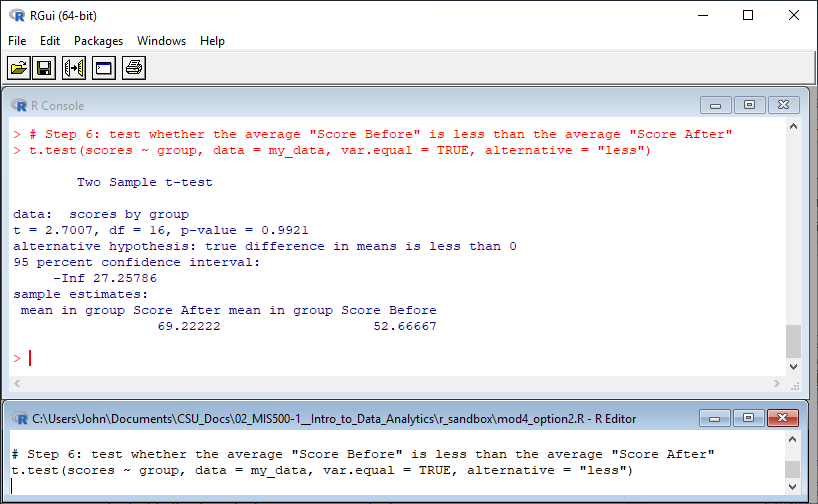


*Figure 6*. Step 4: Compute unpaired two sample t-test.

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*Figure 7*. Step 5: Compute independent t-test.



*Figure 8*. Step 6: Test whether the average “Score Before” is less than the average “Score After”.