**Module4: Critical Thinking**

**Nagajaya Chilakala**

**Colorado State University – Global Campus**

**Jun 06, 2019**

**Dr. Isaac K.Gang**

**#Code for R Hypothesis Tests**

**install.packages("dplyr") # Install required packages**

**tScore\_before <- c(40, 62, 74, 22, 64, 65, 49, 49, 49) #Vector of scores before and after**

**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)**

**)**

**#Print all the data**

**print(my\_data)**

**#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)**

**)**

**# Compute Unpaired Two Sample t-test**

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

**res**

**# Compute independent t-test**

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

**res**

**#test whether the average score before score is less than the average after score, type this:**

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

**Screenshots of the Output: Shown the screenshots of the program output in Figure1, Figure2 and Figure3**

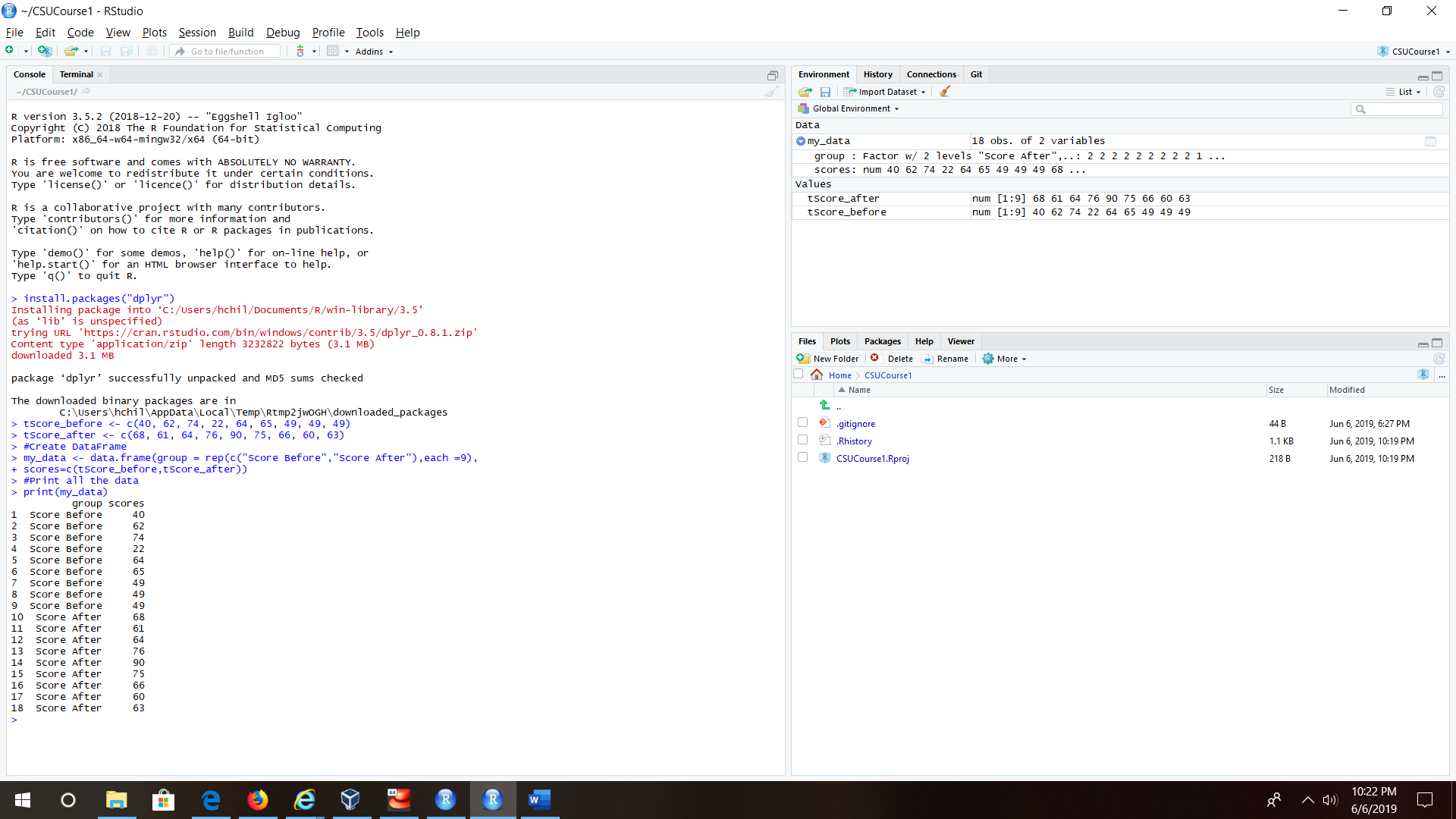


Figure1: Screenshot of Program output1

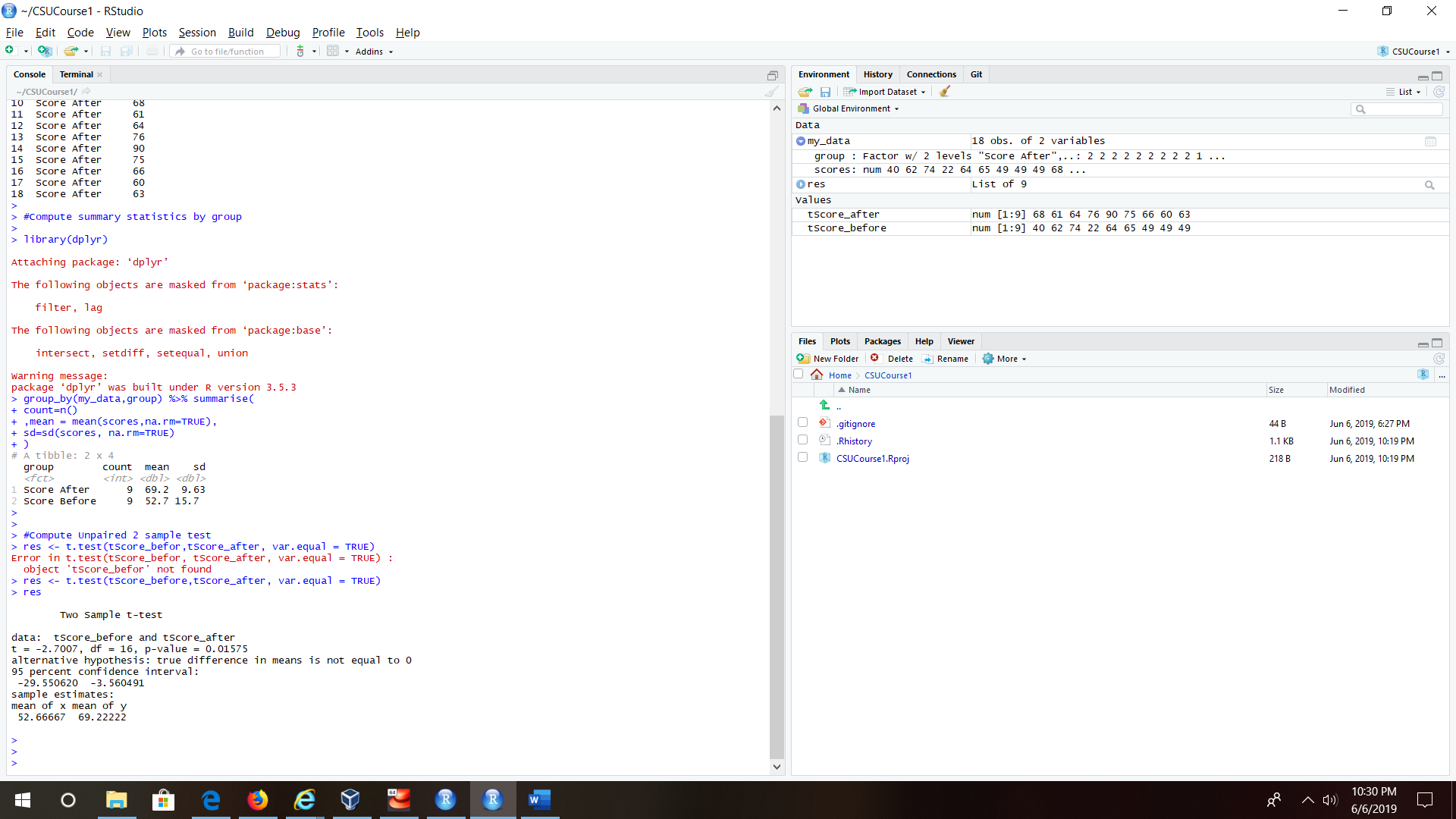


Figure2: Screenshot of Program Output 2

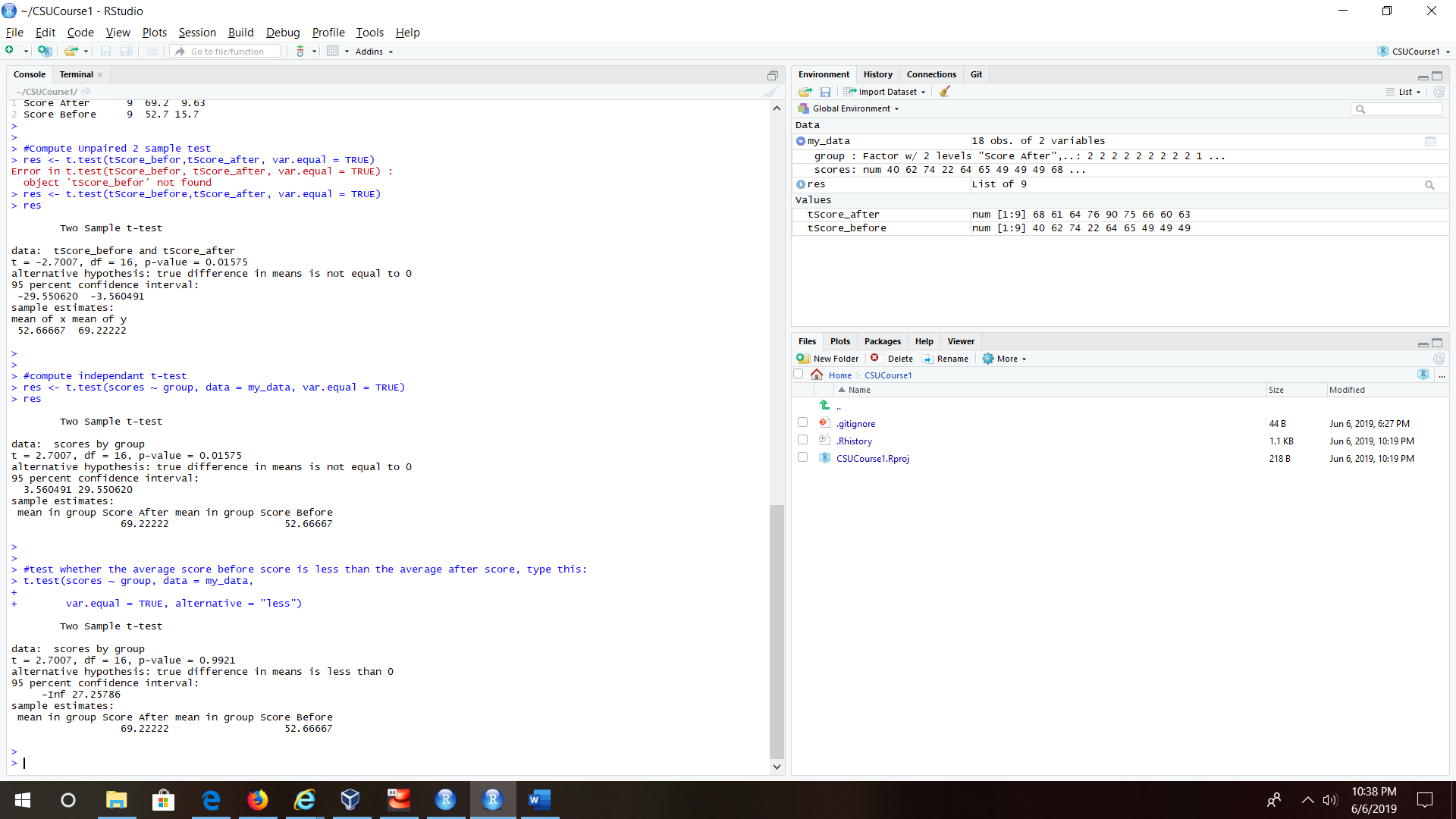


Figure3: Screenshot of Program output3