Critical Thinking 4 Option 2

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**Code and Outputs**

**# R Hypothesis Tests**

**install.packages("dplyr")**

**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(**

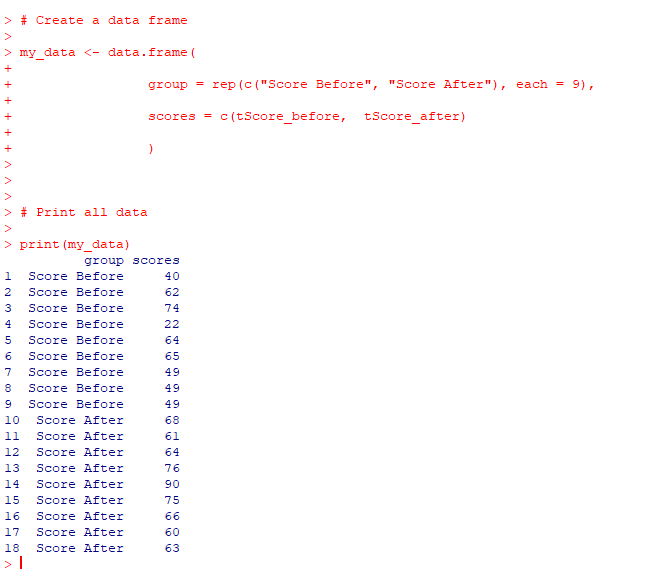
**group = rep(c("Score Before", "Score After"), each = 9),**

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

**)**

**# Print all data**

**print(my\_data)**

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**#Compute summary statistics by groups**

**library(dplyr)**

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

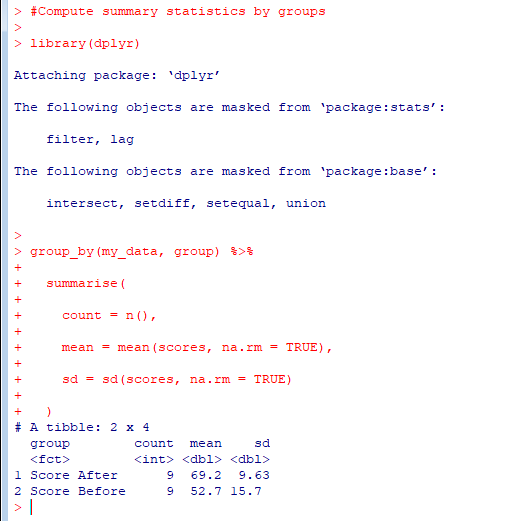
**summarise(**

**count = n(),**

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

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

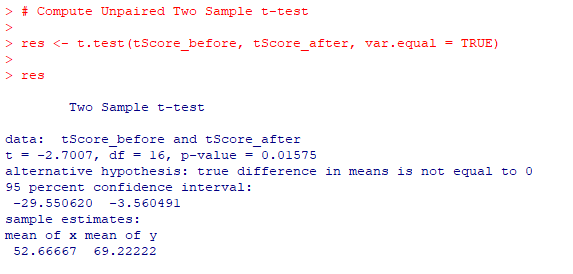
**)**

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

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

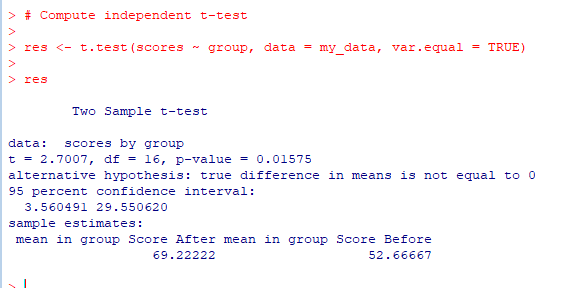
**res**

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**# Compute independent t-test**

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

**res**

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**#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")**

