ASSIGNMENT 5

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## Student Survey

1. As a data science intern with newly learned knowledge in skills in statistical correlation and R programming, you will analyze the results of a survey recently given to college students. You learn that the research question being investigated is: “Is there a significant relationship between the amount of time spent reading and the time spent watching television?” You are also interested if there are other significant relationships that can be discovered? The survey data is located in this StudentSurvey.csv file.
   1. Use R to calculate the covariance of the Survey variables and provide an explanation of why you would use this calculation and what the results indicate.

### Survey Covariance Calculations

survey <- read.csv("assignments/assignment05/student-survey.csv")  
correlation\_read <- cor(survey$TimeReading, survey$Happiness,   
 use = "everything",   
 method = c("pearson", "kendall", "spearman"))  
correlation\_read

## [1] -0.4348663

correlation\_TV <- cor(survey$TimeTV, survey$Happiness,  
 use = "everything",   
 method = c("pearson", "kendall", "spearman"))  
correlation\_TV

## [1] 0.636556

gender\_zero <- survey[ which(survey$Gender == 0), ]  
gender\_one <- survey[ which(survey$Gender == 1), ]  
  
gender\_zero$Gender <- as.numeric(gender\_zero$Gender)  
  
correlation\_read\_zero <- cor(gender\_zero$TimeReading, gender\_zero$Happiness,   
 use = "everything",   
 method = c("pearson", "kendall", "spearman"))  
correlation\_read\_zero

## [1] -0.735294

correlation\_TV\_zero <- cor(gender\_zero$TimeTV, gender\_zero$Happiness,   
 use = "everything",   
 method = c("pearson", "kendall", "spearman"))  
correlation\_TV\_zero

## [1] 0.8723756

correlation\_read\_one <- cor(gender\_one$TimeReading, gender\_one$Happiness,   
 use = "everything",   
 method = c("pearson", "kendall", "spearman"))  
correlation\_read\_one

## [1] -0.1246403

correlation\_TV\_one <- cor(gender\_one$TimeTV, gender\_one$Happiness,   
 use = "everything",   
 method = c("pearson", "kendall", "spearman"))  
correlation\_TV\_one

## [1] 0.2354574