**Report**

-Data Science HW2-



Date : 2021.09.29

Subject : Data Science

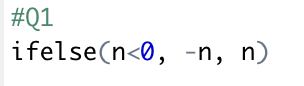
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Major : Mobile System Engineering

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1. Exercise 2 (Ch7)



2-a. Make “fibonacci(n)”

텍스트이(가) 표시된 사진

자동 생성된 설명

2-b. List 3 Applications of Fibonacci Sequence.

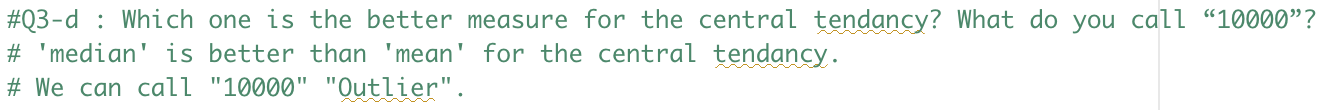
텍스트이(가) 표시된 사진

자동 생성된 설명

3. User Defined Function

텍스트이(가) 표시된 사진

자동 생성된 설명



4. [t-Test] Find an example of your interest comparing two groups of normal distribution. Run the t-Test by both R and Excel. Include the source code and the result(graphs), and REFERENCE if there is any.

<R>

텍스트이(가) 표시된 사진

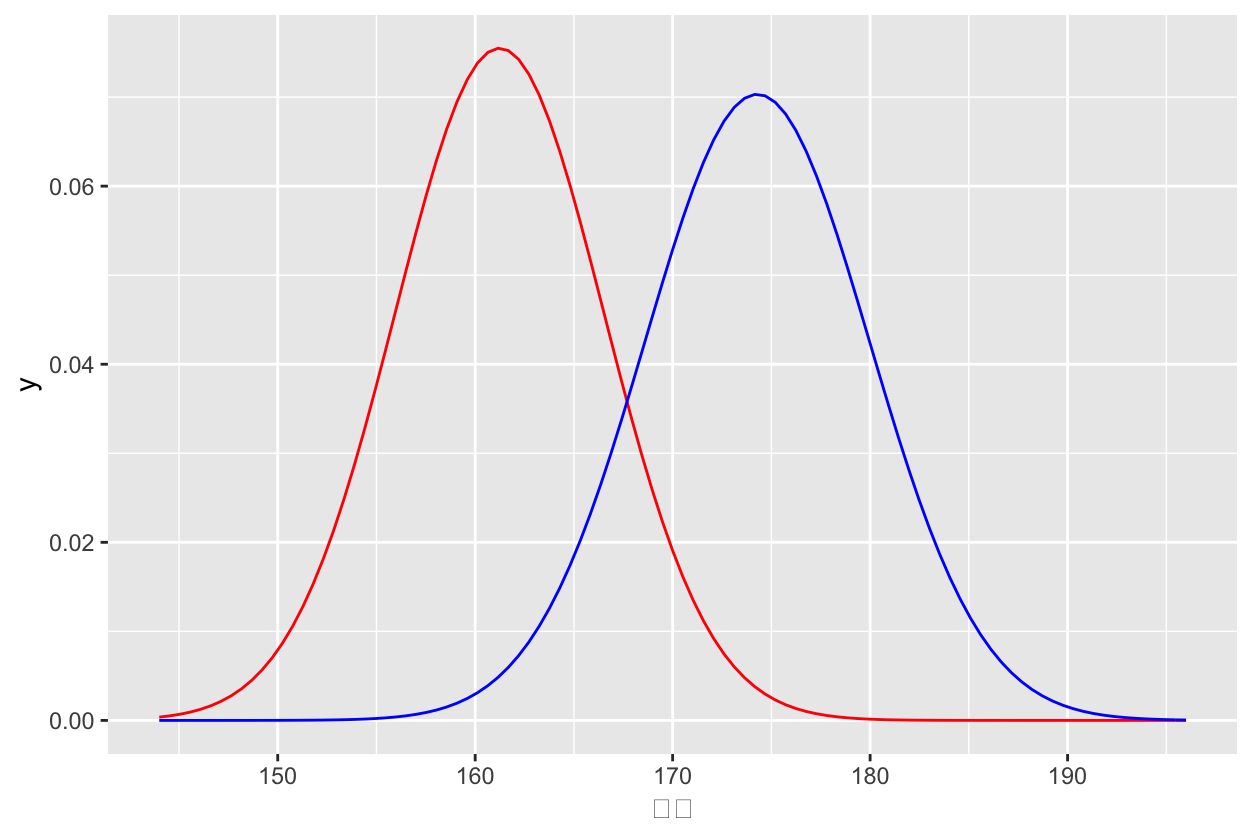
자동 생성된 설명

The data are about the height of high school seniors according to gender in 2016.

As a result of the equal variance test(f-test), the p-value is 0.1126, which is greater than 0.5, so this data is equal variance. Therefore, the equal variance assumption t-Test was performed. As a result, the p-value was less than 0.05. Therefore, the difference in height according to sex is significant.

텍스트이(가) 표시된 사진

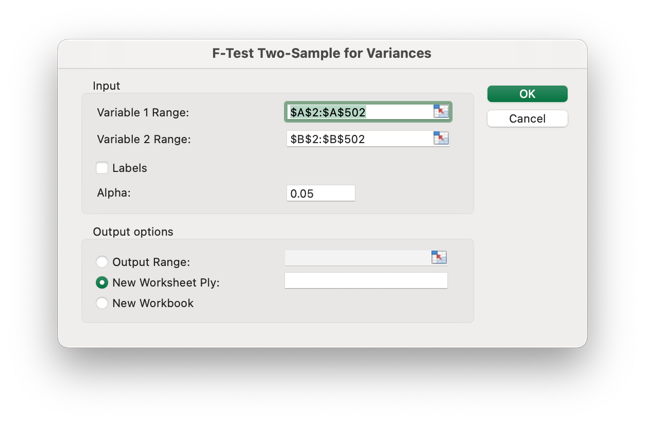
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The graph above is a graph showing the data of each man and woman. The red graph represents the height of a woman, and the blue graph represents the height of a man.

<Excel>

텍스트이(가) 표시된 사진

자동 생성된 설명

Before starting the t-test, the equal variance test(f-test) should be performed first.

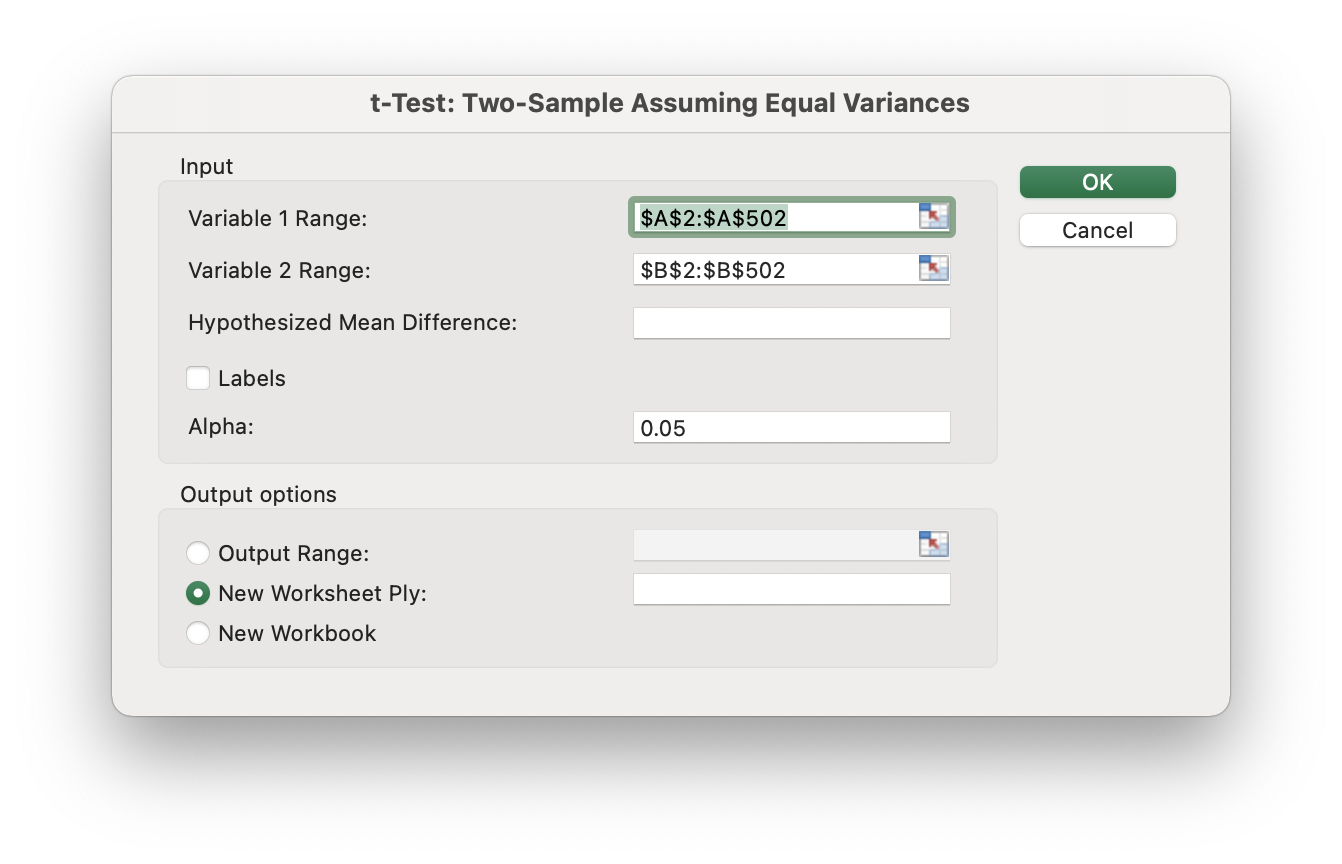
테이블이(가) 표시된 사진

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As a result of the f-test, the one-tail test p-value was 0.05630761. So, the real p-value is 0.05630761\*2.

if p-value is greater than 0.05, it is “Equal Variances”, while if it is smaller than 0.05, it is “Unequal Variances”. My p-value is larger than 0.05, so it is “Equal Variances”.

텍스트이(가) 표시된 사진

자동 생성된 설명

Therefore, I selected ‘t-Test: Two-Sample Assuming Equal Variances”.

테이블이(가) 표시된 사진

자동 생성된 설명

The p-value is 4.35E-194, which is smaller than 0.05, therefore the difference in height according to sex is significant.



REFERENCE

공공데이터포털 - 교육부\_학생건강검사 키rawdata\_2016\_20190927.csv

(Only high school seniors' data were extracted separately.)