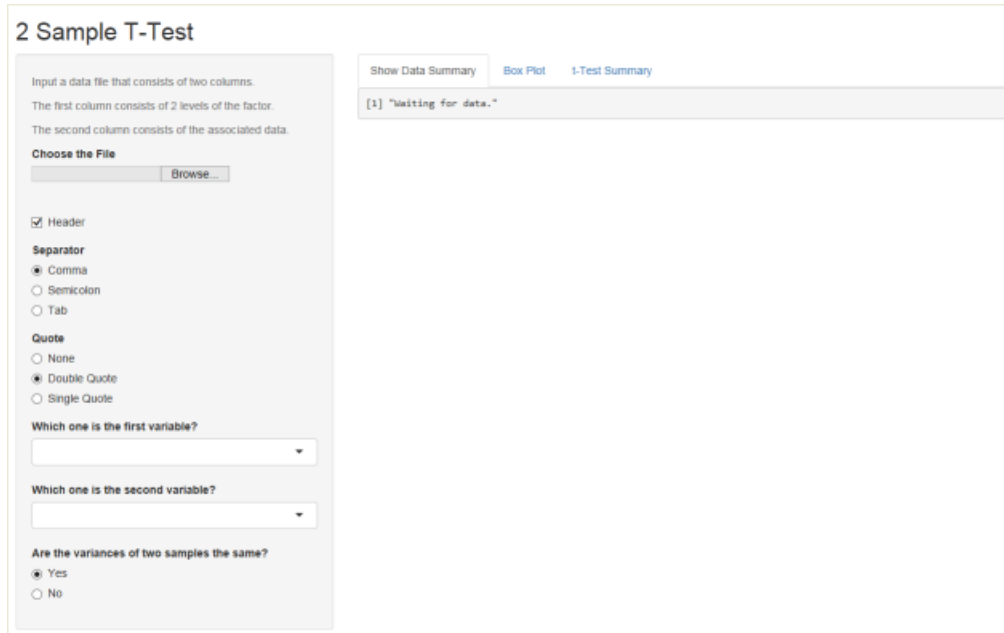


# 2TT User Guild

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*October 24, 2015*

This is a step-by-step user guide for 2TT - A Shiny App for 2-Sample t-Test. A sample data file is provided. User can use it and follow this guide to familiarize 2TT.



The screenshot shows the '2 Sample T-Test' Shiny app interface. On the left, there's a form with instructions: 'Input a data file that consists of two columns. The first column consists of 2 levels of the factor. The second column consists of the associated data.' Below this is a 'Choose the File' section with a 'Browse...' button. Further down are radio buttons for 'Header' (checked), 'Separator' (Comma selected, Semicolon and Tab unselected), and 'Quote' (Double Quote selected, None and Single Quote unselected). There are two dropdown menus for 'Which one is the first variable?' and 'Which one is the second variable?'. At the bottom is a radio button for 'Are the variances of two samples the same?' (Yes selected, No unselected). On the right, there are three tabs: 'Show Data Summary' (active), 'Box Plot', and 't-Test Summary'. Below the tabs is a message box showing '[1] \"Waiting for data.\"'

Fig. 1 Notice that under the “Show Data Summary” a message “[1] “Waiting for data.”. This indicates 2TT is waiting for user to load the data file.

Please notice that all user need to do are on the side panel. See Fig. 1.

## User Step-By-Step User Guide

### Step 0 - Data File Format

Download the provided sample file “2TT.csv”. User should open this file and inspect its format. This is the format user will use when creating data files in the future. The 2TT data file consists of only 2 columns. The first column contains the names of the factors. There can be more than 2 factors. The second column contains the numeric data associated with the factors.

### Step 1 - Load File into 2TT

Click **Browse...** under **Choose the File** to choose the data file to load.

### Step 2 - Data File Header

Check **Header** box if the data file has headers.

## Step 3 - Data File Column Separator

Click the radio button under **Separator** to specify how columns of the data file are separated.

## Step 4 - Data File Quote

Click the radio button under **Quote** to specify which type of quote (or if there's any) is used in the data file.

## Step 5 - Specify Factors to Run 2-Sample t-Test

In the input box under **Which one is the first variable?**, click the downward triangle to open the pull-down manu. Select the first factor from it.

After that, in the input box under **Which one is the second variable?**, click the downward triangle to open the pull-down manu. Select the second factor from it.

## Step 6 - Variances Assumption

Click the radio button under **Are the variances of two samples the same?** to specify your assumption.

At this moment 2TT should look lie the following figure:

2 Sample T-Test

Input a data file that consists of two columns.  
The first column consists of 2 levels of the factor.  
The second column consists of the associated data.

Choose the CSV File  
C:\Users\13360\Desktop\ Browse...  
Upload complete

☒ Header

Separator  
☒ Comma  
☐ Semicolon  
☐ Tab

Quote  
☐ None  
☒ Double Quote  
☐ Single Quote

Which one is the first variable?  
v1

Which one is the second variable?  
v1

Are the variances of two samples the same?  
☒ Yes  
☐ No

Show Data Table Box Plot t-Test Summary

v1	X, 6, 543651542
v1:40	Min. : -10.7092
v2:50	1st Qu.: -6.3788
v3:50	Median : -2.8995
	Mean : 0.7112
	3rd Qu.: 8.8171
	Max. : 26.2389

Fig. 2 Notice that under the “Show Data Summary” a brief summary of the data file is shown.

## Step 7 - Visual Comparison - Box Plot

Click **Box Plot** tab to see the box plot result (Fig. 3).

## 2 Sample T-Test

Input a data file that consists of two columns.  
The first column consists of 2 levels of the factor.  
The second column consists of the associated data.

### Choose the CSV File

C:\Users\13360\Desktop\ Browse...

Upload complete

☒ Header

### Separator

☒ Comma

☐ Semicolon

☐ Tab

### Quote

☐ None

☒ Double Quote

☐ Single Quote

Which one is the first variable?

v1

Which one is the second variable?

v3

v1

v2

v3

Show Data Summary

Box Plot

t-Test Summary

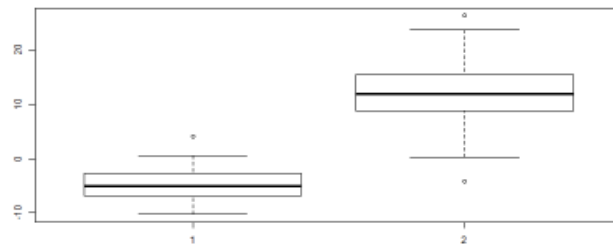


Fig. 3 2TT presents a visual comparison for the two samples to user inside the “Box Plot”.

## Step 8 - More Detail of t-Test Result

Click **t-Test Summary** tab to see the detail summary of the 2-sample t-Test (Fig. 4).

## 2 Sample T-Test

Input a data file that consists of two columns.  
The first column consists of 2 levels of the factor.  
The second column consists of the associated data.

### Choose the CSV File

C:\Users\13360\Desktop\ Browse...

Upload complete

☒ Header

### Separator

☒ Comma

☐ Semicolon

☐ Tab

### Quote

☐ None

☒ Double Quote

☐ Single Quote

Which one is the first variable?

v1

Which one is the second variable?

v3

v1

v2

v3

Show Data Summary

Box Plot

t-Test Summary

### Two Sample t-test

data: v1 and v2  
 $t = -17.679$ ,  $df = 97$ ,  $p\text{-value} < 2.2e-16$   
alternative hypothesis: true difference in means is not equal to 0  
98 percent confidence interval:  
-18.24993 -15.11559  
sample estimates:  
mean of x mean of y  
-4.720223 11.962537

Fig. 4 2TT gives user more detail of the t-Test result in the “t-Test Summary” tab.

## Final Note

If you follow the **Step-By-Step User Guild** up to this point, then you should be very familiar to how it works now. Users are encouraged to start utalize 2TT with their own data file, following the same format of the sample file. Any suggestion or question? Please feel free to contact our technical support at [techsupport@2TT.com](mailto:techsupport@2TT.com).