

Paired t-test

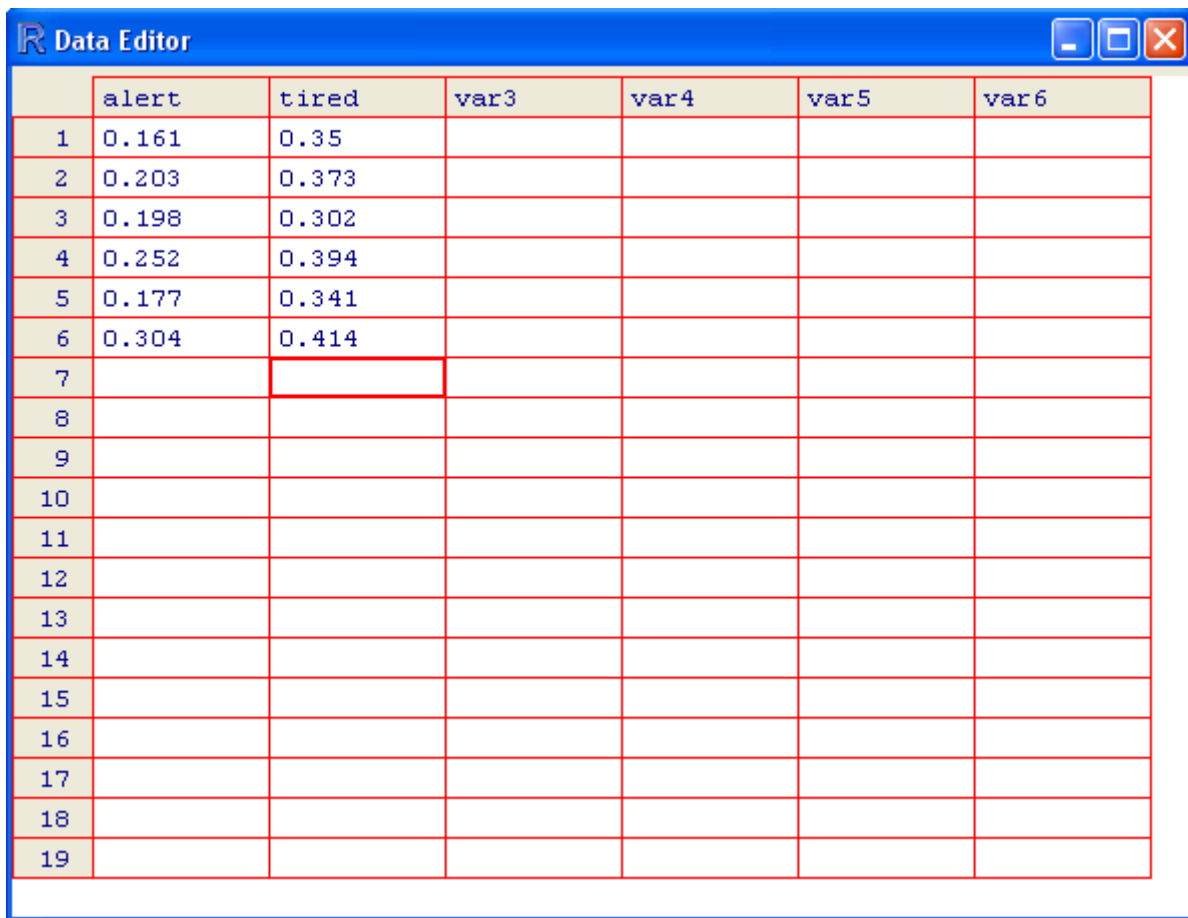
EXAMPLE: The reaction time in seconds of a group of people is tested while the person is fully rested, and again after a period of 48 hours without sleep.

Alert: .161, .203, .198, .252, .177, .304

Tired: .350, .373, .302, .394, .341, .414

Step 1:

Enter the data into the data editor. Put the first set of data (int this case, alert reactions) in one column, and the second set of data in another:

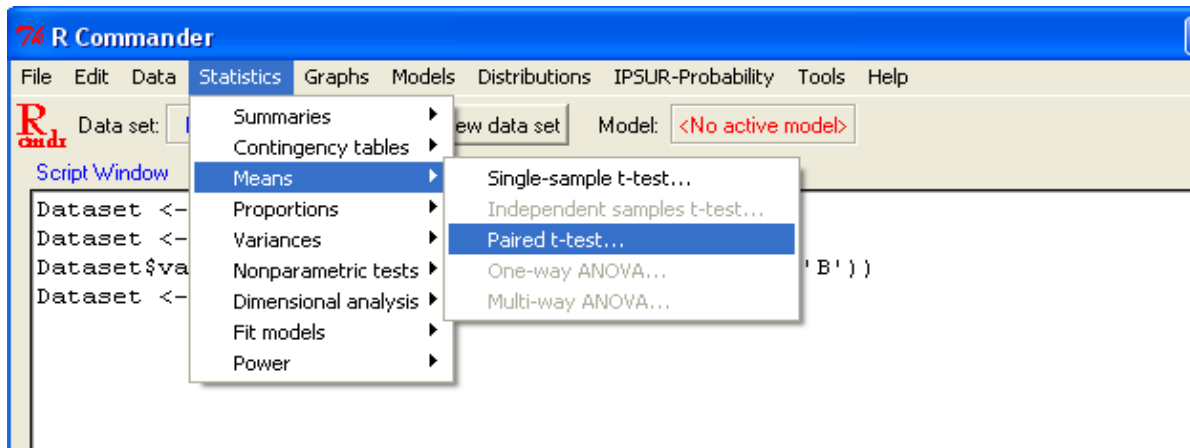


The screenshot shows the R Data Editor window with a data table. The table has 7 columns: 'alert', 'tired', 'var3', 'var4', 'var5', and 'var6'. The rows are numbered 1 through 19. The data for the first six rows is as follows:

	alert	tired	var3	var4	var5	var6
1	0.161	0.35				
2	0.203	0.373				
3	0.198	0.302				
4	0.252	0.394				
5	0.177	0.341				
6	0.304	0.414				
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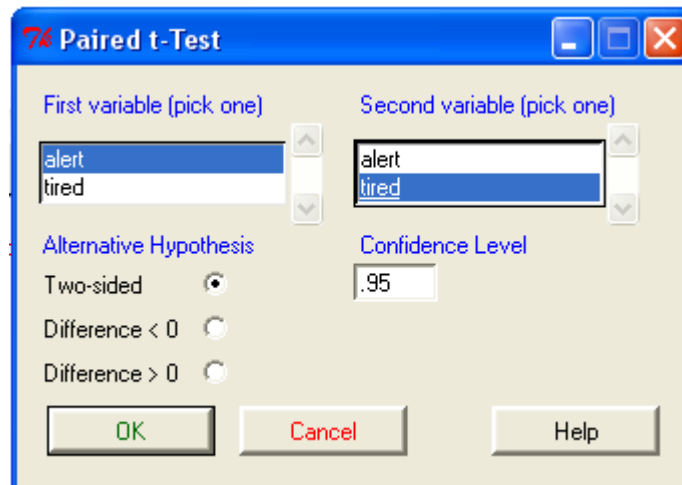
Step 2:

Click Statistics > Means > Paired t-test...



Step 3:

In the dialog box, select the first variable, and the second variable. Then enter the confidence level in the proper box. Hit OK.



Interpretation:

```
Paired t-test
data: Dataset$alert and Dataset$tired
t = -10.5149, df = 5, p-value = 0.0001343
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
-0.1823148 -0.1106852
sample estimates:
mean of the differences
-0.1465
```

The p-value is .00013

The 95% confidence interval is -.1823 to -.1107