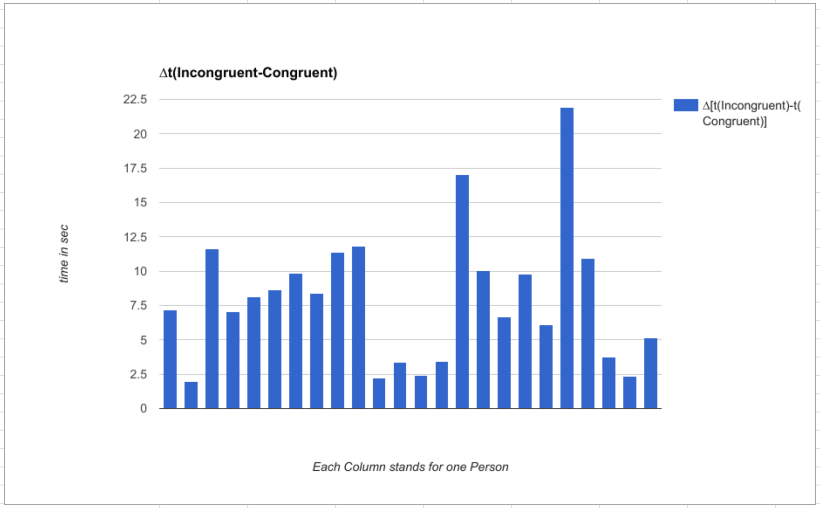
DataSet from : https://drive.google.com/file/d/0B9Yf01UaIbUgQXpYb2NhZ29yX1U/view

Data Set for the excecuted Stroop Test for one sample group with diffrent word conditions (Congruent,Incongruent)

Descriptive Statistics			Central Tendency		Measure of variability										
Congruent	Incongruent	Δ[t(Incongruent)-t(Congruent)]	mean[Δ(t(Incongruent)-t(Congruent))]=Δx	median[Δ(t(Incongruent)-t(Congruent))]	Calculation of the Samples Difference Standard Deviation s				Δx+s		Δx+2s		t-value	IQR		IQR(Q3-Q1)
time t in sec	time t in sec				(Δt-Δμ)^2	s^2(with the Becel Formula n-1)	s	2*s	Δx+s		Δx+2s		t= Δμ/(s/√n)	Quartile 1	Quartile 3	
12.079	19.278	7.199	7.965	7.667	0.586	23.667	**4.865**	9.730	12.830		17.694		8.021	3.646	10.259	6.613
16.791	18.741	1.95			36.178											
9.564	21.214	11.65			13.581											
8.63	15.687	7.057			0.824											
14.669	22.803	8.134			0.029											
12.238	20.878	8.64			0.456											
14.692	24.572	9.88			3.668											
8.987	17.394	8.407			0.196											
9.401	20.762	11.361			11.534											
14.48	26.282	11.802			14.724											
22.328	24.524	2.196			33.279											
15.298	18.644	3.346			21.333											
15.073	17.51	2.437			30.556											
16.929	20.33	3.401			20.828											
18.2	35.255	17.055			82.632											
12.13	22.158	10.028			4.257											
18.495	25.139	6.644			1.744											
10.639	20.429	9.79			3.331											
11.344	17.425	6.081			3.549											
12.369	34.288	21.919			194.720											
12.944	23.894	10.95			8.911											
14.233	17.96	3.727			17.959											
19.71	22.058	2.348			31.548											
16.004	21.157	5.153			7.906											

x(congruent)	x(incongruent)		Sample Standard Deviation (congruent)	Sample Standard Deviation (incongruent)
14.051	22.016		s(congruent)	s(incongruent)
7.965			3.559	4.797
		Variance:	12.669	23.012



Interpretation of the DataPlot referring to Question 4 of the Instructions:

The Plot shows the differences of the time participants needed to read out loud the ink of the displayed words between the incongruent and the congruent word condition:

1. Δ[t(Incongruent)-t(Congruent)]

It is recognized that all of the differences are positive which means the time for the incongruent word condition was always larger than for the congruent one.
The addition I ploted the mean of the diffrences Δx=7.965 sec. Moreover the sample standard deviation(s) was calculated and inserted in the chart. One the one hand we have the 1*s interval (green lines) and on the other hand the 2*s interval (yellow line). In this sample normal distribution about 75% of the values lie in the 1s interval and 95.8% lie in the 2*s interval. Only one difference is bigger than Δx+2s

1*s Interval: Δx-s≤Δ[t(Incongruent)-t(Congruent)]≤Δx+s

2*s Interval: Δx-2s≤Δ[t(Incongruent)-t(Congruent)]≤Δx+2s

Question number 5 t-statistic:

The t-value for this sample t-test with depending variables is: t= Δμ/(s/√n)= 8.021

Depending on our significance level Alpha we can reject or keep the Null Hypothesis:

For Alpha=0.05 and in my expectation of a one tale test the critical value for t is (referring to the Data Sheet/image) is t(critical)=1.714 (df=23) . So our t value is exceeding the critical value therefore the Null Hypothesis is rejected.
The confidence level is 95 % for this significance value

If we choose Alpha= 0.01 regarding a one taled test the critical value is t(critical)=2.500 (df=23)

So our t value is exceeding the critical value therefor we reject the Null Hypothesis and stay we the alternative one:
The confidence level is 99% for this significance value

This matches up with my expectation. The incongruent word condition influenced in the way that the time increased. The expected population mean for the incongruent word condition is in general (mean) about 8 sec longer that the time for the congruent condition population mean