Code and Outputs

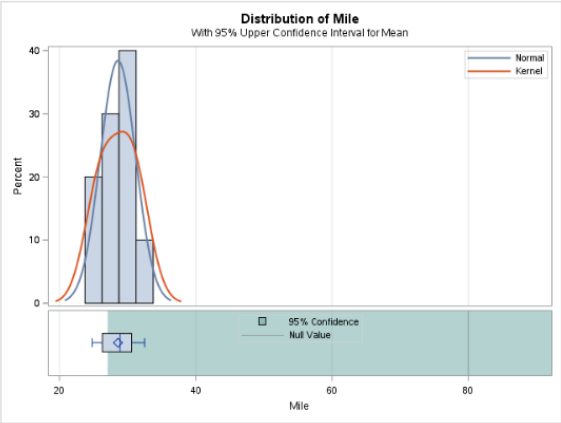
```
1  DATA MILE;
2  INPUT Mile 1-4;
3  DATALINES;
4  26.6
5  30.4
6  32.5
7  26.3
8  31.0
9  25.9
10 29.7
11 24.8
12 30.6
13 28.1
14 RUN;
15
16
17 ods graphics on;
18
19 PROC TTEST H0=80 PLOTS(SHOH0) SIDES = U ;
20 VAR Mile;
21 RUN;
22
23  ods graphics off;
```

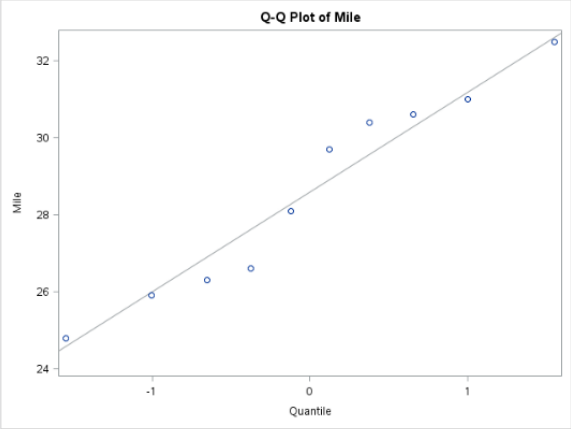
The TTEST Procedure
Variable: Mile

N	Mean	Std Dev	Std Err	Minimum	Maximum
10	28.5900	2.5968	0.8212	24.8000	32.5000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
28.5900	27.0847	Infty	2.5968	1.7862	4.7407

DF	t Value	Pr > t
9	-62.61	1.0000





2

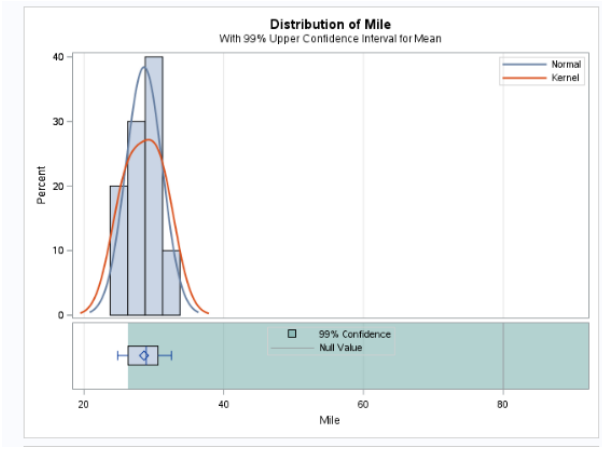
```
1  DATA MILE;
2  INPUT Mile 1-4;
3  DATALINES;
4  26.6
5  30.4
6  32.5
7  26.3
8  31.0
9  25.9
10 29.7
11 24.8
12 30.6
13 28.1
14 RUN;
15
16
17 ods graphics on;
18
19 PROC TTEST H0=80 PLOTS(SHOH0) SIDES = U ALHPA=0.01;
20 VAR Mile;
21 RUN;
22
23  ods graphics off;
```

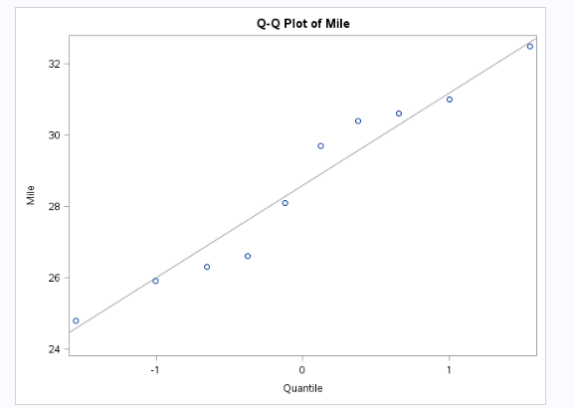
The TTEST Procedure
Variable: Mile

N	Mean	Std Dev	Std Err	Minimum	Maximum
10	28.5900	2.5968	0.8212	24.8000	32.5000

Mean	99% CL Mean		Std Dev	99% CL Std Dev	
28.5900	26.2731	Infty	2.5968	1.6040	5.9144

DF	t Value	Pr > t
9	-62.61	1.0000





Statement of the null and alternate hypothesis

1. H0: mean < 30

   Ha : mean > = 30

2. H0: mean < 30

   Ha : mean > = 30

Statement of conclusion both as “reject or fail to reject the null hypothesis” and as a verbal statement explaining the meaning of that conclusion in this context

1. fail to reject the null hypothesis since the p-value is 1 > alpha = 0.5
   Based on the result, I am 95% confident that the mean value of miles is less than 30

2. fail to reject the null hypothesis since the p-value is 1 > alpha = 0.01
   Based on the result, I am 99% confident that the mean value of miles is less than 30

Support for your conclusion, drawn from the SAS output

1. From the result, the 95% confident mean is 27.0847 which supports the value is less than 30.
2. From the result, the 99% confident mean is 26.2731 which supports the value is less than 30.

Answer the question: Did the change in alpha change the conclusion of the hypothesis test?

No, it did not change the conclusion of the hypothesis test in this case.

1. (26.81, 30.37) 95% confident that the mean of mile is between 26.81 and 32.5

2. (26.99, 30.19) 99% confident that the mean of mile is between 26.99 and 30.19.

The more percentage of confidence level requires wider confident interval.