One-Sample t-Test Report: Body Temperature vs 98.6°F

First off, we examine the metadata and other info about the dataset and try to understand each variable, the type and length of the varaibles

The CONTENTS Procedure

Data Set Name	STAT1.NORMTEMP	*Observations*	130
Member Type	DATA	*Variables*	4
Engine	V9	*Indexes*	0
Created	01/13/2026 04:02:43	*Observation Length*	32
Last Modified	01/13/2026 04:02:43	*Deleted Observations*	0
Protection		*Compressed*	NO
Data Set Type		*Sorted*	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	131072
Number of Data Set Pages	1
First Data Page	1
Max Obs per Page	4078
Obs in First Data Page	130
Number of Data Set Repairs	0
Filename	/home/u64046684/EST142/data/normtemp.sas7bdat
Release Created	9.0401M8
Host Created	Linux
Inode Number	15035392453
Access Permission	rw-r--r--
Owner Name	u64046684
File Size	256KB
File Size (bytes)	262144

Alphabetic List of Variables and Attributes

#	*Variable*	*Type*	*Len*
2	BodyTemp	Num	8
3	Gender	Char	6
4	HeartRate	Num	8
1	ID	Num	8

Testing Whether the Mean Body Temperature=98.6

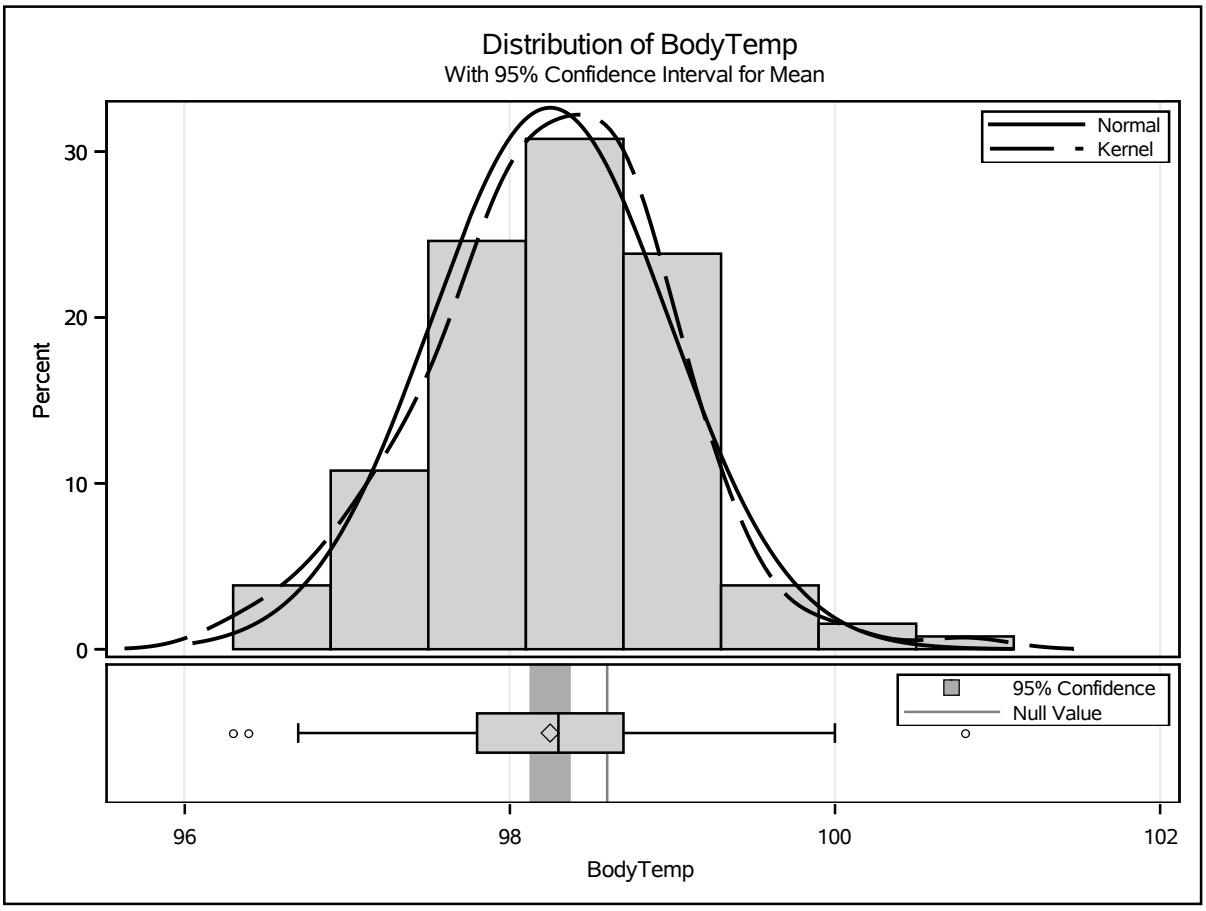
The TTEST Procedure

Variable: BodyTemp

N	Mean	Std Dev	Std Err	Minimum	Maximum
130	98.2492	0.7332	0.0643	96.3000	100.8

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
98.2492	98.1220	98.3765	0.7332	0.6536	0.8350

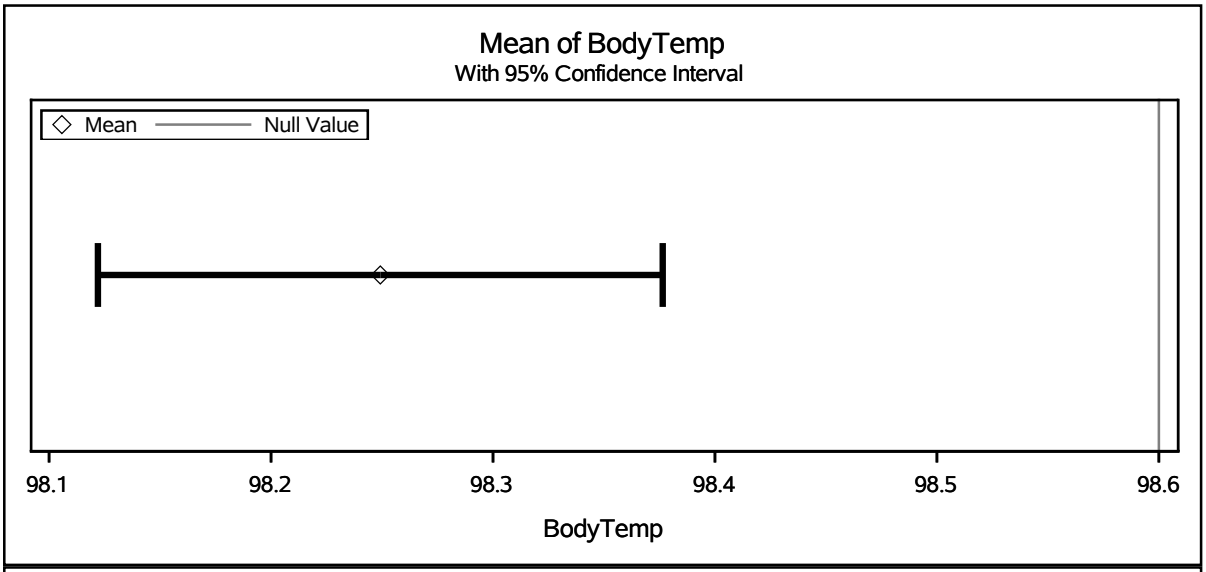
DF	t Value	Pr > |t|
129	-5.45	<.0001

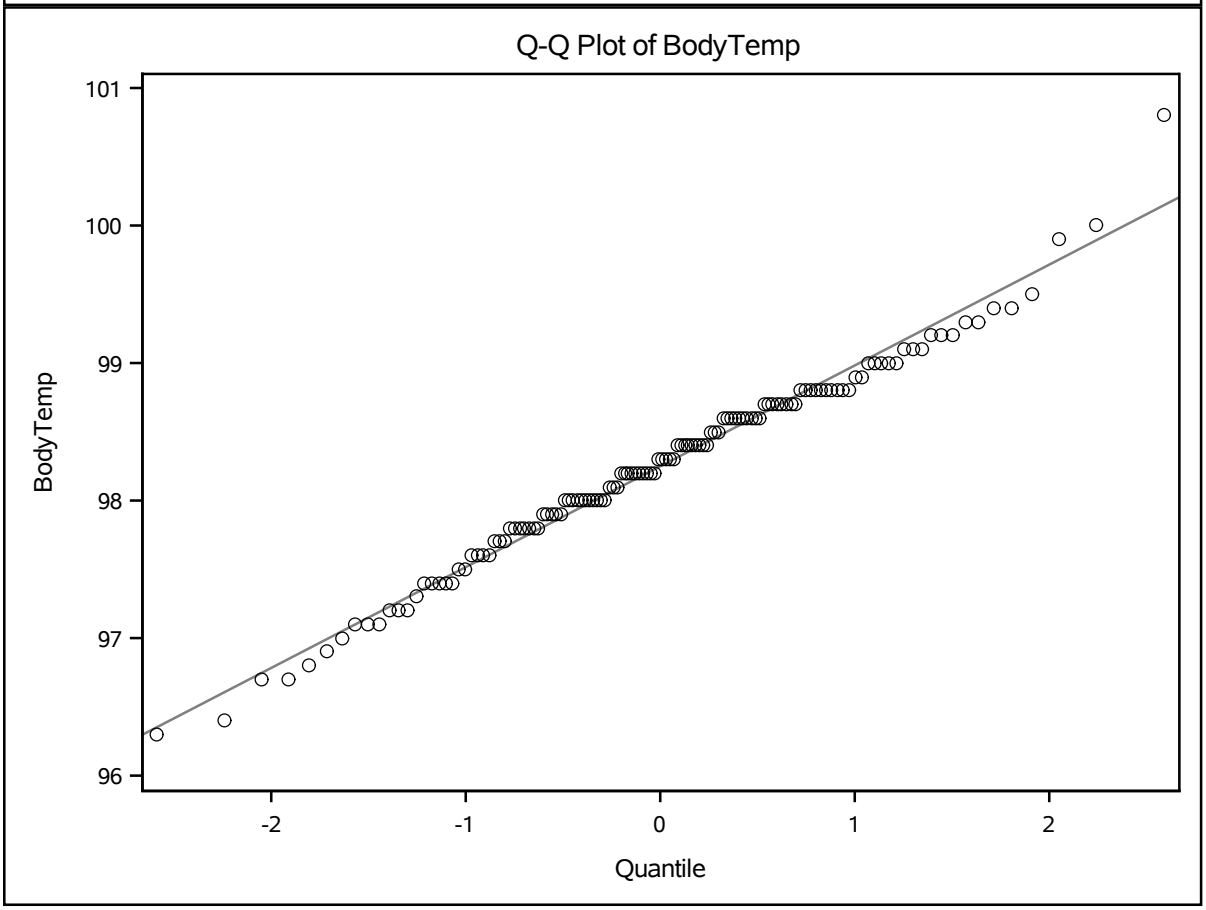


Testing Whether the Mean Body Temperature=98.6

The TTEST Procedure

Variable: BodyTemp





from the output of the procedure step statement, we first check the histogram distribution and the Q-Q plot of the variable 'bodytemp' to accertain if its normally distributed and from all indications, the distribution is bell shaped, no extreme skewness or abnomality. Also,the Q-Q plot shows that the points closely follow the reference line, Minor tail deviations are acceptable given the sample size (N = 130). Thus,Normality assumption is reasonbly statisfied.
Just by observation of the summary statistic, the smaple mean is 98.25°F but thats not enough to make our conclusion, we need statistical evidenceto decide if this difference is meaningful. The t statistic (-5.45), which is far from 0 and the P-value(0.0001) which is less than 0.05 actually gives enough statistical evidence to reject the null hypothesis and conclude that the sample mean is statistically different from the hypothesized mean of 98.6
The confidence interval (98.12°F, 98.38°F) futher confirms that the hypothesized mean 98.6 falls outside of the confidence interval. hence, we are 95 percent confident that the true population mean body temperature lies between 98.12°F and 98.38°F and 98.6 isnt in that range.