**What is the True Normal Human Body Temperature?**

**Background**

The mean normal body temperature was held to be 37C or 98.6F for more than 120 years since it was first conceptualized and reported by Carl Wunderlich in a famous 1868 book. But, is this value statistically correct?

**Exercise**

Analyze a dataset of human body temperatures and employ the concepts of hypothesis testing, confidence intervals, and statistical significance to answer 6 main questions:

1. Is the distribution of body temperatures normal?
2. Is the sample size large? Are the observations independent?
3. Is the true population mean really 98.6 degrees F?
4. Draw a small sample of size 10 from the data and repeat both frequentist tests.
5. At what temperature should we consider someone's temperature to be "abnormal"?
6. Is there a significant difference between males and females in normal temperature?

Please use the for code review and for the details analysis

[What is the True Normal Human Body Temperature.ipynb](https://github.com/rivasjmr/Springboard/blob/master/What%20is%20the%20True%20Normal%20Human%20Body%20Temperature.ipynb" \t "_blank)

**Process**

The first step was doing anexploratory data analysis (**EDA**) to summarize the main characteristics, also using visual methods.

Used the bootstrap hypothesis test and frequentist statistical testing. Applied both the *t* and *z* statistics.

**Conclusion**

Thebody temperatures dataset has normal distribution, the histogram plot reassembled a bell curve and data size was larger 30 so the CLT holds true.

Appling both the *t* and *z* statistics provided similar results because of the size of the dataset.

Using a smaller data set of 10 records, **may produce inconclusive results*.*** Recommend using the larger dataset.

Key finding from the dataset are:

* True Population Mean is 98.6 F is False
* Temperature outside the range of 98.12F to 98.38F is abnormal
* There is a significant difference between males and females in normal temperature