GitHub

October 28, 2019

I just got back. I left the experiment running and when I returned 4 weeks later it had nicely run the whole time. Except that the main Arduino board fell out of its saddle and one of the input plugs pulled out. So the experiment ran and picked up one number out of 19, but only two of the pendulums were being recorded. I consider this ‘no big deal’.

My goal was to run the experiment for year and then stop and study the dat. Well, a year has passed; I am in the 13th month. I have not carefully calculated it, or looked at the databases, but this is about 2.5 million numbers. What does all this mean. I know that this may be a sucker bet. But would it not be cool to find something interesting. The numbers are to the millionth of a second. (actually, I look at the data and see that the numbers are all even. It is as if the time is rounded to the even number.

So, what next? This would be a cool problem for Artificial intelligence. It is perfect. Numbers and more numbers. Just give it to the program and see what happens.

Starting about 5 months ago, the Python quit sorting the numbers. The algorithm is: constraint one, constraint two, constraint three and finally “other”. The python started putting everything into the ‘other’ category (I think this is ‘column five’ in the Python and the sqlite3). The problem had to do with the data types. The Arduino started sending a Unicode value instead of an integer and the Python could not handle it. I moved everything from a Windows environment to a Linux environment and never really finished the transition.

My original thinking: look at a pendulum and see if there are variations on any level. Then look for the same irregularities on the other pendulums. If stuff can be seen across the three, then it must be significant.

Now, I am thinking that all the data should be combined. So, the new databases could be fine as they are. And the older platforms could be easily combined into this same flat file. The treatment of the data would be much easier.

How might this work. Using Python, pull the number out one week at a time (for example). Calculate the average and standard deviation and put this in a table for graphing. What do we see!. Or pull the numbers out one day at a time and do the same treatment. (this would only be about 400 values.)

Example: There is a small but statistically significant slowing of the pendulums in the winter. We would need to find some way to explain this. Batteries? Temperature? Spiders? (there are spiders in the laboratory area) One of the pendulums stopped? An outlier skewed the data. This would come from treatment of the data as one flat file. Just leave them as one list of numbers.

For review: the databases are all identical: columns are UNIX time stamp, constraint one, constraint two, constraint three, other, comments, comments two. So, the UNIX time stamp goes with every number. And actually, this time stamp is to the millions of a second, which might be important.