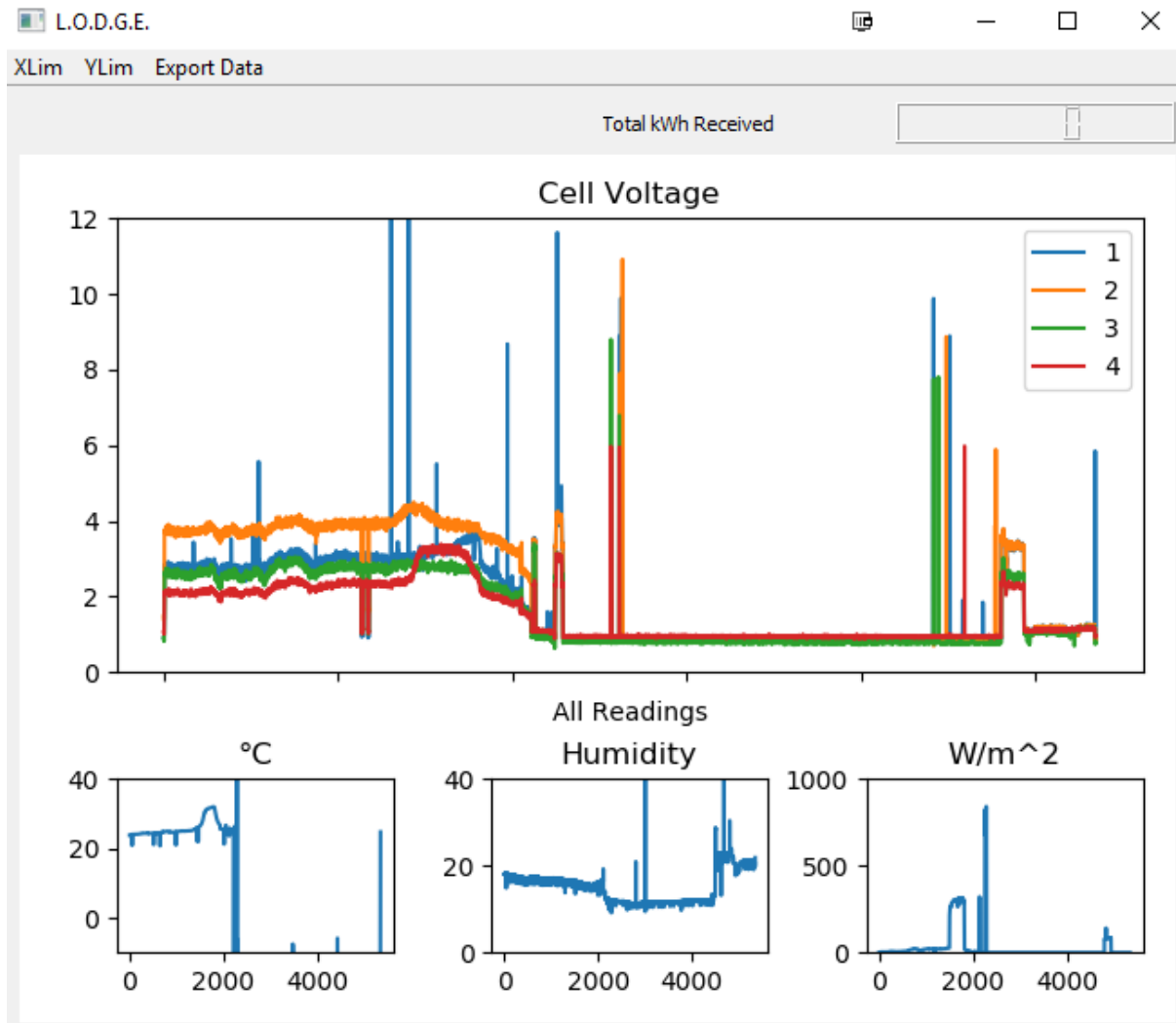# L.O.D.G.E.

LIWE OPV Data collection G.U.I. Environment

By Zachary Taylor

This is a G.U.I. (Graphical User Interface) created for the purpose of visualizing and managing the data being collected and broadcast by a Linux and Microcontroller based system for the environmental stress testing of OPV (Organic Photovoltaic) cells, or more simply organic solar panels.

This automatically syncs with the data broadcast to a private Google Drive account every 5 seconds, organizes and then visualizes it in 4 separate graphs.

LODGE allows the user to change X lim and Y lim variables on all graphs and provides a function to export the data in a variety of ways to better suit the users needs.

Contents

Installation:

This is 'home-made' program that does not have 3rd party Publisher access with Windows 10.
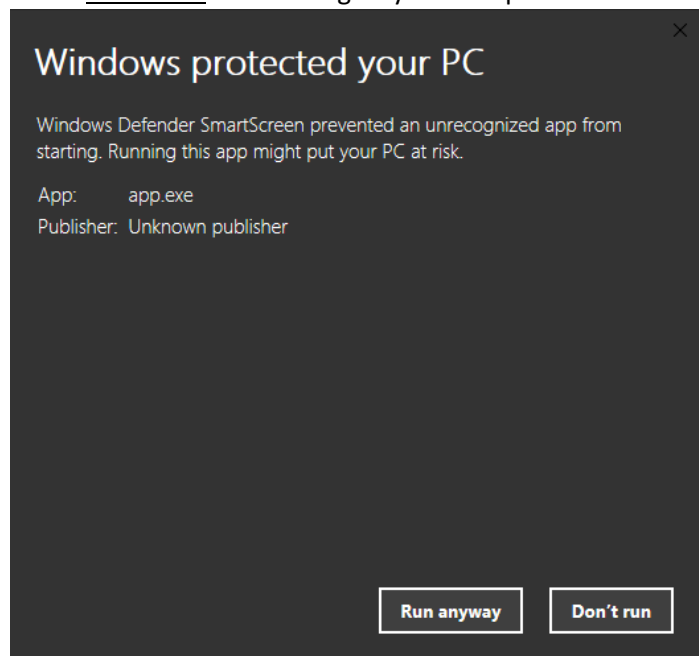
 SO WARNINGS WILL APPEAR.

Upon first run it will warn you:

(this image name says app.py, but will say LODGE.py on your screen)

PLEASE click More Info which will give you the option to RUN ANYWAYS

INSTALLATION = 2 ACTIONS REQUIRED

Because LODGE needs access to the previously mentioned Google Drive, it requires the credentials to be placed in a previously agreed upon location so that it may do its job. This sadly could not be automated as it would require a level of authorization on the users computer that the author of this code was not comfortable automating as it could potentially lead to security risks.
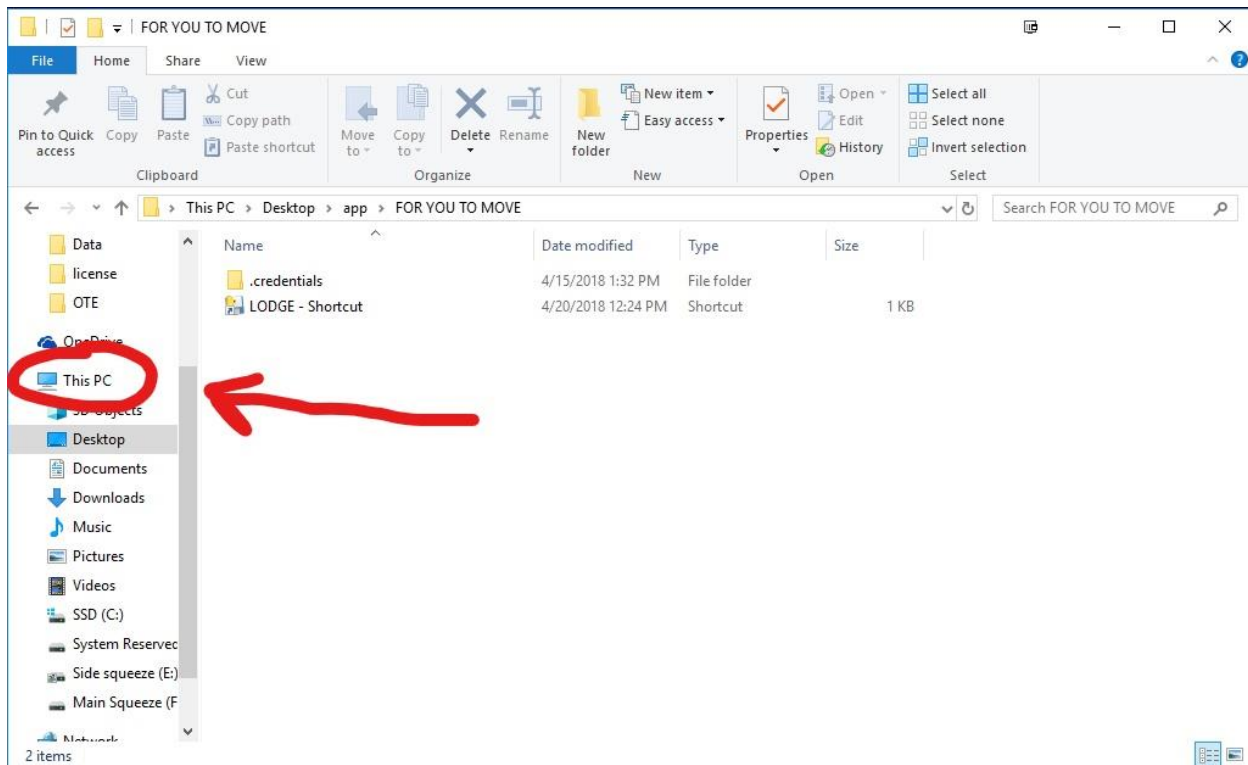
Therefore, the credentials have been included in the 'app' folder for the user to place accordingly.
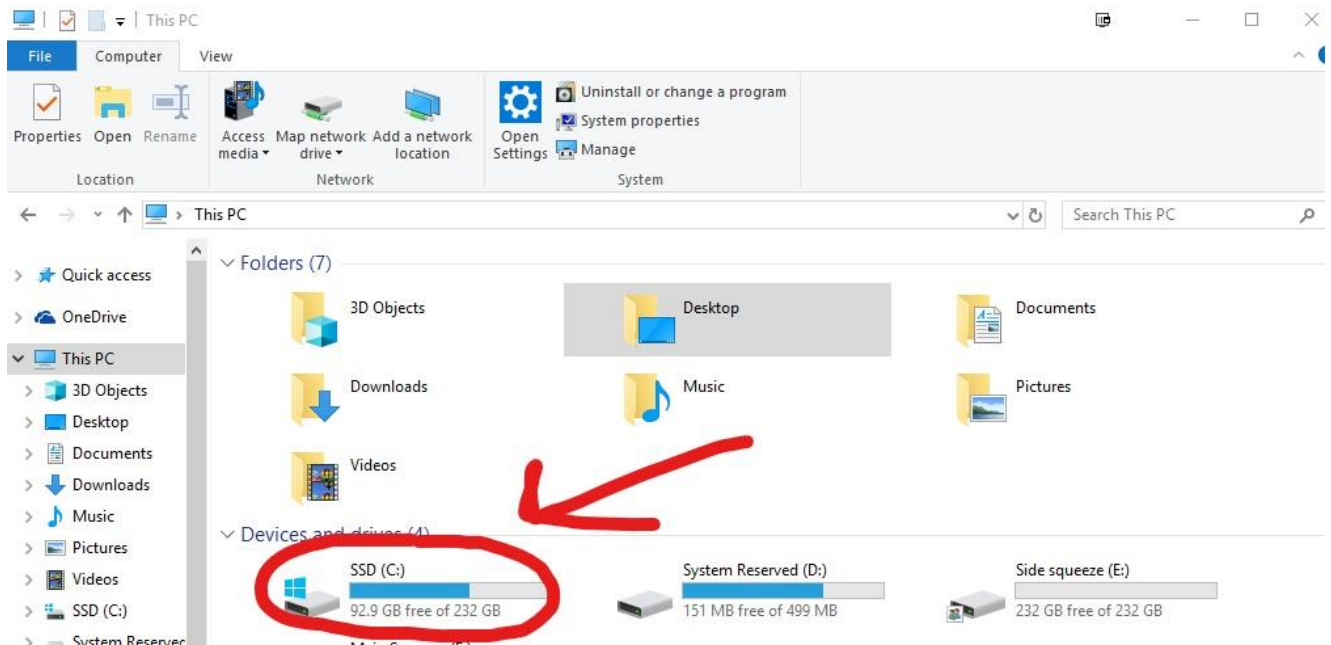
1st ACTION: Place Credentials

In the 'app' folder there is a folder named 'FOR YOU TO MOVE', please open that and you will see the folder '.credentials'. There is no need to open this, simply MOVE it to your BASE USER FOLDER.
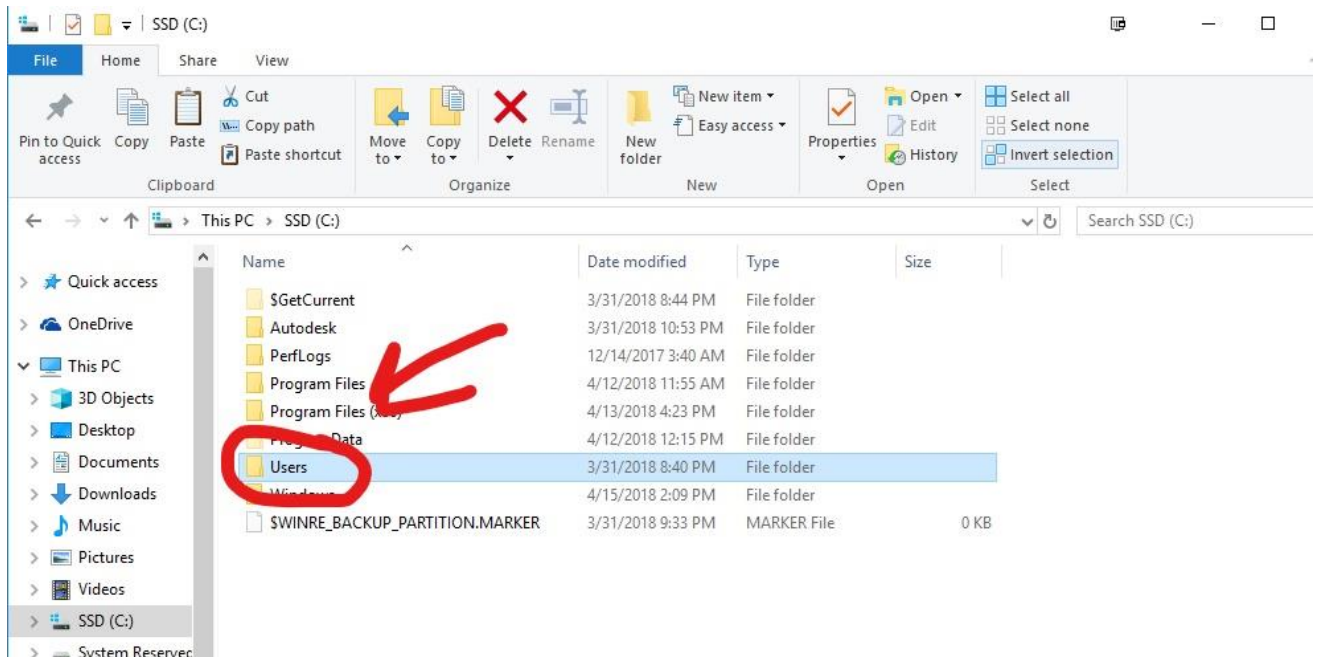
For example: C:\Users\'YOUR USER NAME'

Your BASE USER FOLDER can be found by clicking on 'This PC' on the left hand side of your finder window
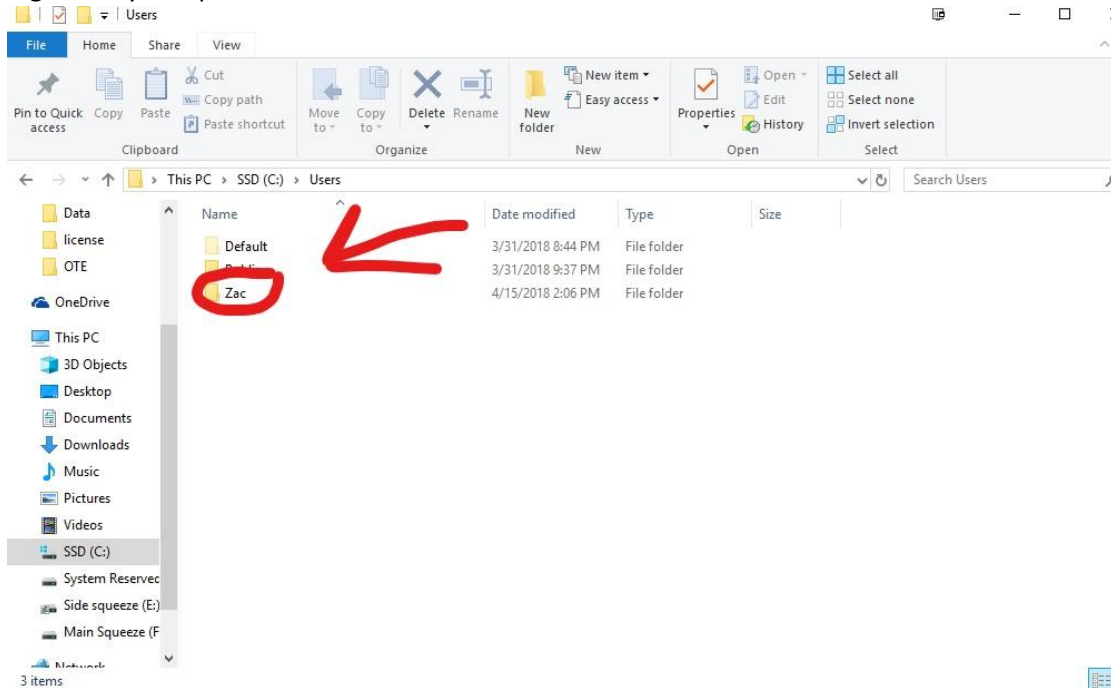

Then click on your hard drive where the operating system is located, if you have more than one it should normally be labeled (C:)
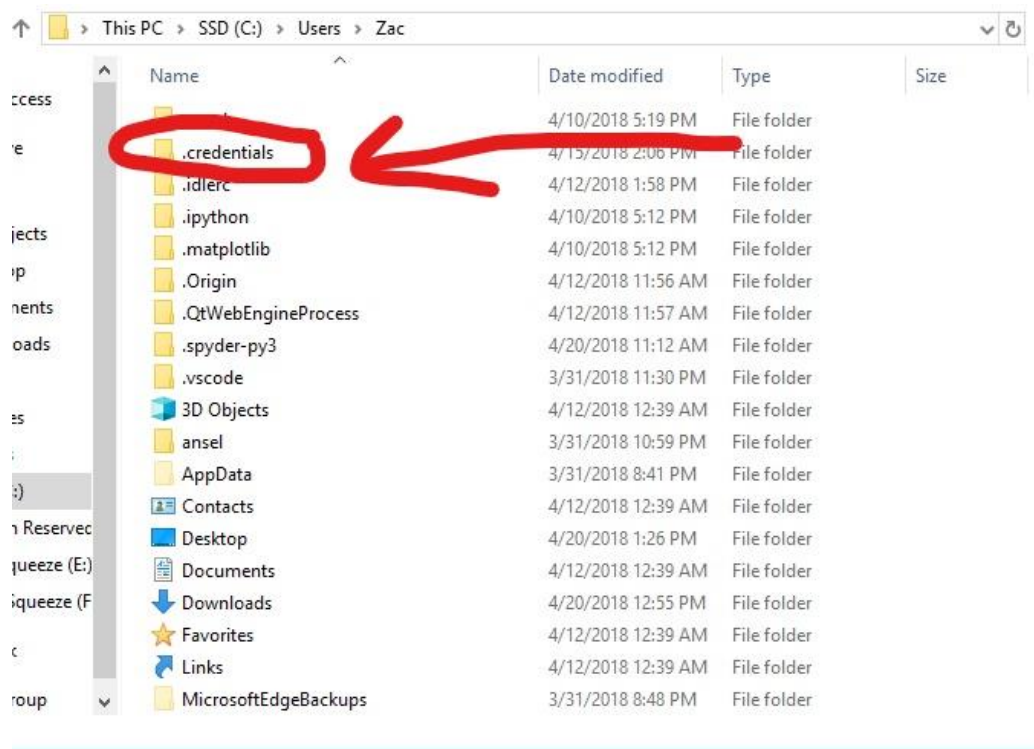
Then click on the USERS folder:

Once there, you will see your user folder. For example my name is Zac and so is the name of the user I log into my computer under.

Simply move the '.credentials' folder INTO your user folder. AND THAT'S IT! It should look something like this when you are finished

AND YOUR DONE!

2nd ACTION: Place on Start Menu OR Place LODGE Shortcut

The code requires that LODGE.exe stay within the folder 'app', however you can place that ANYWHERE you want on your computer. Easiest place normally is just store it in the DOCUMENTS folder.

In the same folder as before 'FOR YOU TO MOVE', you will find an already created SHORTCUT app for you to put on your desktop for easy access

OR

You can simply right-click the original LODGE exe file and choose PIN TO START to include it on your start menu for easy access.

AND YOUR DONE! That is everything required to use LODGE.
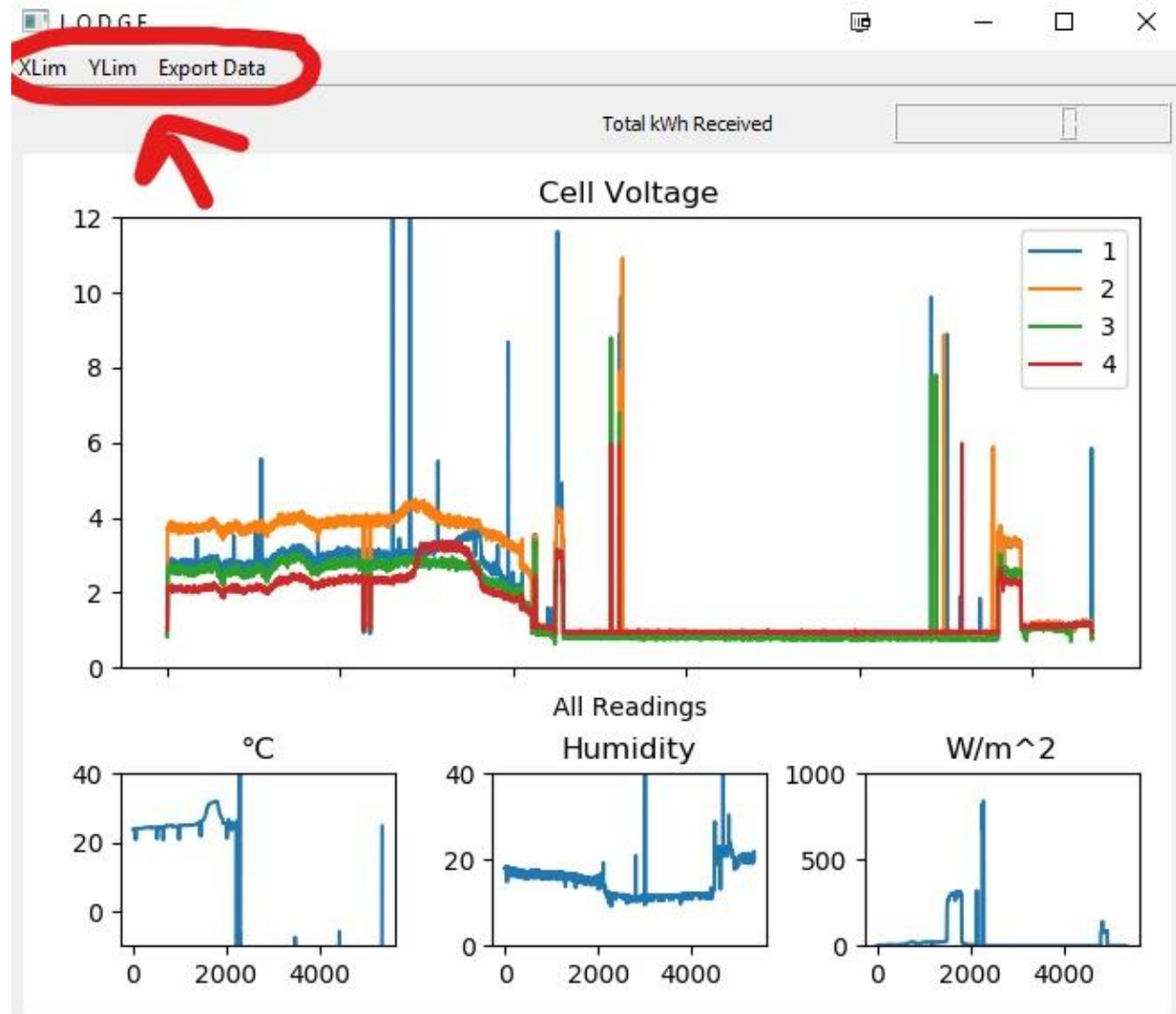
ENJOY!!!

How to use/various functions:

There are 3 additional functions aside from the standard autovisualization and updating.

-X Lim

-Y Lim

-Export

X Lim:

This is a simple menu function that allows you to choose the number of data points you would like to graph at any given time. Since the readings come in every hour, there are options for the last 24 or 1 day, 1 week, 1 month, all data, and a custom length of your choosing.

PLEASE NOTE: The graphs auto update every 5 SECONDS so if you click the menu option and it does not change immediately please wait for a maximum of 5 seconds and it will change. If it does not after this amount of time please refer to CONTACT INFO as I would love to hear from you and fix any problem you may have.
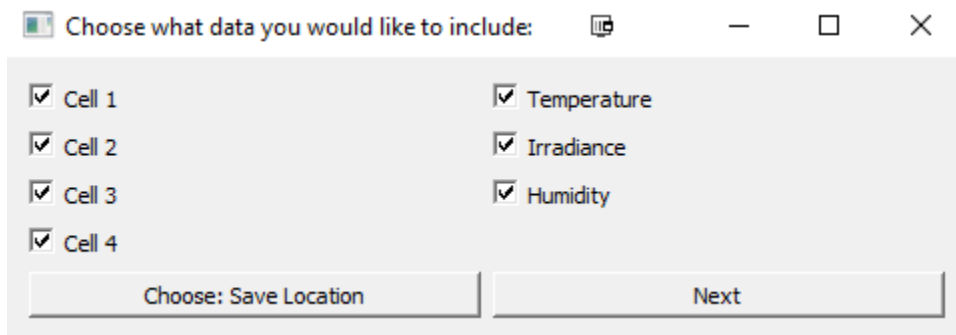
Y Lim:

This simple menu option allows you to change the Y Lim of each graph independently. It will ask you for the MIN and then the MAX.

There is an option at the end which allows the user to go back to the default Y Lim options. Please note this will reset ALL the graph Y Lims.
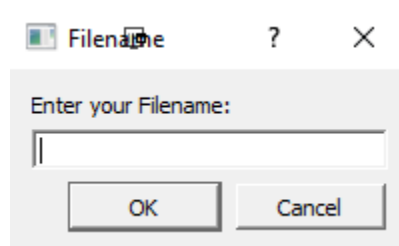
Export:

There is only one option here for the moment. It gives the user the ability to export the data being visualized in customized sections.

This checkbox pop-up menu will appear that gives the user the ability to choose what data they would like to include in the export. The default settings is ALL. PLEASE NOTE: The TIMESTAMP of each data point is AUTOMATICALLY included as Column 1

The user can choose the SAVE LOCATION they would like the data to appear, a location MUST be chosen, however if the user forgets they will be prompted before export to prevent errors.
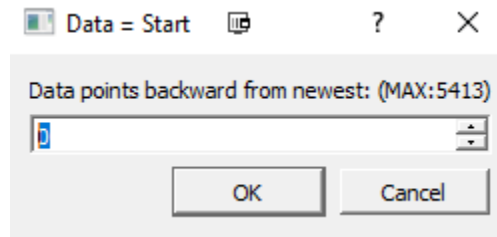
Clicking NEXT

Lets the user choose the name of the exported file, a name MUST be chosen, there is no default name.
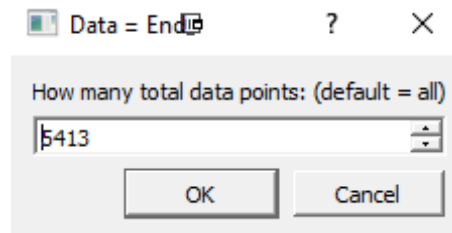
After choosing the name, the user will be prompted to choose the LENGTH of the data set they would like to export.

The number here is the number of data points BACKWARDS from the newest, it has been done this way as new data will always be coming in and simplification was required. It does provide the MAXIMUM data points available.

IF USER WANTS ALL DATA: simply type in the MAX number and it will export all data points.

Once chosen it will prompt the user to choose the TOTAL LENGTH of the data set (how many total data points), starting from the previously chosen Start point. It automatically defaults to ALL from that point. However if the user would like just a section they may choose less.

AND THAT'S IT! The data will now be in a TXT file that has been CSV'd (comma separated) for easy importing into programs such as Excel and R/RStudio.
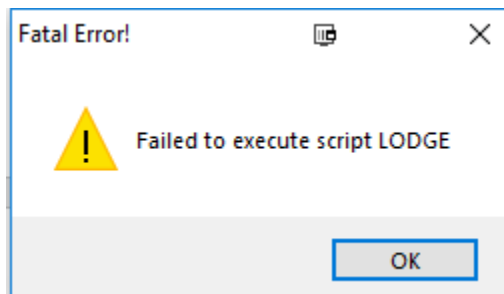
Known errors and issues:

EXPORT ISSUES:
A known issue is often the first export of the data does not export any data. THIS WILL ONLY HAPPEN THE FIRST TIME YOU TRY.

IF this happens simply repeat the export and it will work perfectly.

CLOSING PROGRAM FATAL ERROR:

When the program is closed this WARNING will appear. This is due to a threading timer that is still running. You can safely ignore it.

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Please do not hesistate to contact me with any questions! I will be happy to both hear from you and help in any way I can.

BR,

Zachary Taylor