Currently only the baking program is working, I need to update some of the logic to get the Cal program up and running. I created a shortcut on the desktop to run the program.

Home Screen

When the program is launched you will be brought to the home screen, which contains a table with configuration info for all of the available devices. The location and port fields are used to update where the program can find the device. The location field for the LSC temperature controller, and for the oven corresponds to the GPIB port. The connect buttons are used to connect to the device. The button will update to show connect/disconnect status. The program has 3 tabs the first tab is the home screen, and the other two tabs are for the bake and calibration programs respectively.

Baking Program

The bake tab will initially bring you to the baking configuration screen, this screen is represented by the settings wheel on the left-hand side of the screen. The first entry field is used to configure how many wavelength/amplitude readings to average together for every reading. The next field configures how long to wait initially, in hours, before beginning the program. (Note: for all the fields relating to time a decimal number can be input, and an integer larger than the upper bound can be input into the field, for example 100 seconds would correspond to 1 minute and 40 seconds.) The next entry field will configure the initial time interval in seconds, which corresponds to the initial frequency the readings are taken at. The following entry corresponds to the length of time the initial frequency of readings will last, and it's in minutes. The following entry corresponds to the frequency the program will take readings at once the initial duration has ended, and it's in hours. The next field is for the file name to store the output at, this field is expecting to find a file name ending in .xlsx. If just the file name, and extension are input into the entry then the file will be created in the same directory as the program, C:\Users\phils\Documents\FbgUI, if you would prefer the file to be stored in a different location, the button to the right of the entry will open up a file locater to use to select a place for the file. The name field of the file selector should not contain a file extension, this will be put in for you automatically. (Note: the excel file named will not be created automatically, this is a place holder for where the file will be created once the create excel spreadsheet button is pressed.) The Start program button will begin the program, and as mentioned the create excel button will create the excel spreadsheet in the specified location (Note: the spreadsheet is not dynamic, thus it will capture the current state of the data, so any modifications to the spreadsheet should be done once all the data has been collected, because the next time create excel spreadsheet is pressed it will generate a brand new spreadsheet, this was a pitfall of python's excel writer library. Also, if create excel spreadsheet is run while the program is running, any new data will not be added to the excel spreadsheet, but It will be added to the next spreadsheet that is created using the create excel spreadsheet button.) Under the two buttons, are four labels corresponding to the four micron optic channels. The add button will add a new place to insert details for an FBG on the corresponding micron optic channel. Currently there is no delete button for the FBG entries, but all FBG's with their name entry blank are ignored. The number pickers are used to select the optical switch channel for the corresponding FBG, a channel of 0 doesn't use the optical switch. Only one channel can have number picker values differing from 0, since only 1 channel can be using the optical switch. When pressing the start button to start the program, the program will determine what devices are needed, and will connect the necessary devices if they are not currently connected, their status can be displayed on the home screen. The graph icon below the settings wheel on the left-hand side is used to navigate to the graph view for the program. The initial view for the graph is the 6 small subplots all together. (Note: the graphs will be empty if no data has been recorded in the file that is currently in the file name entry, once the program is started and the data collection process has begun, the graphs will be populated.) If you double click on any of the subplots the graph will zoom in for you, and double clicking on the zoomed in graph will return you to the screen of all 6 graphs. The bottom of the screen contains controls for navigating the graphs. The graphs will update in real-time, if you would like to zoom into a graph you must first press the pause button at the bottom of the graph to stop the graph from refreshing, when the graph refreshes it will zoom out. The play button will return the graphs to real-time.

Stopping/Starting

Once the start button is pressed the button will turn into a pause button, and allow you to stop the program from running. If you would like to resume the program, you can press start again however this will start the program again using the initial program delay, and initial reading interval. If you would like to start the program again using the primary interval, set both the initial program delay, and initial interval to 0. The data when the program is resumed will be appended to the file.

WARNINGS

Please make sure the configuration entries that are expecting numeric entries are given numeric entries, I am currently having trouble sanity checking the input, it won't crash the program but I am not catching the error so it will also not alert you that it has received invalid input. Due to having to wait 1.25 seconds between optical switch location switches, the program may report that it is not responding while it is taking the reading. If it says that please do not close the program, this is due to the program doing a lot of waiting while taking the readings, and it is not actually not responding, allow the spinning wheel to go away, and then continue to use the program. I have spent a lot of time looking into solving this problem, but I currently cannot fix it.

Program Window Notes

The program looks the best in full-screen mode, especially the graphing window, and thus I put the program into full-screen mode upon launching. To exit full-screen mode press the escape key, to toggle full-screen mode press F-11. Windows Key + D will bring you to the desktop, and alt + tab will allow you to toggle between other programs.