Work Completed

During this week, I finished adding complete functionality to the secondary infusion screens. This included getting all the necessary variables placed into the while loop that contains the variables as seen below.

Once all of the variables were added to the while loop, their local variables were used in the case structures to allow the program to function correctly. The screenshots for the secondary infusion tabs are shown below.

Figure 1: Top while loop that contains all necessary variables.
Within state 6 (Primary Infusion in Operation) I added a comparator to check to see if there is a secondary rate and volume that has been input. If both values are equal to zero then the select function will send the user to the completed infusion screen. If they are not equal to zero then the user automatically will be sent to the secondary infusion screen to start their second infusion. A similar set up was used to check if the volumes to be infused are equal to zero. In this case the infusion will not occur and the user will be sent to an error screen and then diverted back to the volume to be infused screen to change their input. Screenshots of these select functions are shown below.
After leaving the lab and thinking about the select function tree, I've determined that the select functions used to send the user to the error screens are going to need to be placed higher in the tree. Since the user will be pressing a button to leave the while loop in each case structure, the bottom of the tree which sends the user to the error screen will actually be overridden by the OK BACK or HOME buttons.

The end of the week I came into the lab and spent a little time with Hassam getting the stepper motor controller to function. He has found a few VIs that offer single axis control along with the overall measurement and automation functions that give complete control over the motor. Our stepper motor spins but the threaded portion doesn't. The rotational motion is used to either retract or extend the bolt that exits the end of the stepper motor. The simplest VI only moves the stepper motor to an absolute position that is determined when the driver is initialized. We will need to look further into the actual rotational speed of the motor because this is what is translated directly to infusion pump rate with the FLO-GARD 6200.

Future Work

As stated before, the select function trees will need to be debugged so that the error screens don't get overridden by other inputs. The timing for the program will also need to be played with to not take more than one input from the user and "jump" screens. The rest of the error screens need to be added along with the functions which will determine when an error has occurred in the occlusion, air, open door, and low battery sensors. The next big step is to get the motor bread boarded so that the complete integration can occur with LabVIEW®.
Project Review

The LabVIEW® program is getting to the point where it’s as complete as it can be without the integration occurring. The stepper motor is slowly coming along and hopefully soon we will have the complete knowledge to integrate the motor with our LabVIEW® program. The service manual wasn’t available through Baxter but Jennifer is working on tracking one down. If we can’t get one, we may need to completely scrap that idea and move to making our own waveforms and functions to use the motor.

Hours Worked:
12 hours