Participantes: Eduardo Padilla [padillae]  
 Sam Fenimore [fenimoress]

|  |  |  |
| --- | --- | --- |
| Date | Start Time | Description |
| 3/26/2017 | 1:00 PM | I spent about an hour and a half reading the datasheet on the DHT22 and the assignment description. Part of this time also includes setting up the skeleton for the project. |
| 3/26/2017 | 2:30 PM | I began thinking about how I may go about implementing this program. As all program do, they need some sort of initialization, so I began writing a function that did just that. I also had to look up a basic tutorial on how to wire the sensor to the Arduino. Understanding that we had to configure a port for output and then drive the line LOW to indicate a request to read AND THEN having to once more configure the pin for input-pullup mode made me wonder if I can implement my own pinMode, digitalRead, and digitalWrite functions. |
| 3/26/2017 | 3:15 PM | I began reading some forums on how to possibly implement pinMode, digitalRead, and digitalWrite in C. Some even had examples of these function, so I began implementing them myself. I tested each function on a simple LED circuit to make sure they all produced the intended results. I then refractured the function that initialized the sensor to use these new implemented functions. |
| 3/26/2017 | 6:45 PM | Soon after finishing the initial function, I realized that I had to eventually test the connection of the sensor. It figured down to two simple if statements that checked the digital signal of when the sensor indicates that it's ready to send data, but they I forgot that printing an error message to the terminal wasn't as easy as using printf(). So, I began developing functions that wrote to the terminal, not realizing I had already done this before. After a couple of minutes, I had refractured my old serial communications lab and imported it over into this lab. I tested the function I kept (serial\_open and serial\_write) then made a function that printed strings by utilizing serial\_write. Now, I was able to print messages. |
| 3/26/2017 | 7:45 PM | I began writing a function that read and stored the 40 bits sent from the sensor. I spent a few minutes trying to decide how I would go about doing that. I decided it would be easy to just store the bits in a byte array and "form" a single byte in a temporary variable. Understanding the rules of how we were receiving the bits based on when the sensor was driven HIGH was a bit complicated. After a while of messing with it, I realized that nothing else matter until the sensor went LOW to HIGH. Once it was HIGH i could determine if the bit was either logically 1 or 0 based on the time frames. Then I quickly tested it by printing out the bits to the terminal. |
| 3/26/2017 | 9:00 PM | After implementing a few functions, I realized I could "reuse" a lot of the variables I was creating, so I refractured my program once more to now include a few constants and fields some of which needed to be reset during some of the steps within functions if I was going to be using them as temporary variables. I eventually came up with a simple restore function that cleared my global array and my temporary variable. Within it, I concluded that I could simply add the 3 second time delay that was going to be needed between outputs. |
| 3/26/2017 | 10:00 PM | I saved myself the easiest function, that checked the 4 bytes of temp and humidity data against the checksum byte. This was fairly simple to implement. Within it, I decided it would more appropriate to go ahead and print the data if the checked passed. Being able to print the intended data was super easy since I had already stored my the necessary data in a field. What was surprisingly tedious was getting the format write, and forgetting that I needed to convert my temperature to Fahrenheit. I couldn't quite figure out how to print new lines, and after I while I found out that "\n" didn’t work as I'd expect it to in the terminal. The correct way to do it is using "\r." After realizing how messy the print code was, I moved them to new functions and just called the function instead. |
| 3/26/2017 | 11:30 PM | I spent the next 45 minutes or so cleaning some of my code up and adding some missing comments, and making sure my code worked on the terminal. All checked out!!! (: |

End Time: 12:15 PM