Project 3 Reflection

*In this entry, discuss what you took away from this project. Did something not work the first time around? If it didn’t, mention what it was and how you fixed it.*

I took several things away from this project. One was that discussion of a problem with peers and teaching each other are surprisingly effective at solidifying one’s own knowledge. If you can get someone to discuss the problem with you, it is sometimes much easier to see the solution. This doesn’t work if the person you are talking to isn’t really interested in solving the problem. It can be hard to see at first when this is the case. I will be much better in the future at figuring this out as soon as possible.

Time and again we found problems with seemingly simple solutions but no easy solution in code and they sometimes required multiple iterations of design and implementation before they worked as expected. For example, interfacing with the uart asm file Chris provided looked very straightforward at first but we found it to be VERY difficult because of the dearth of explicit instruction on things like needing to initialize the stack. This is covered in one of the videos, but frankly, unless you know what you’re looking at and how it applies to the problem at hand, you can miss its importance. The other frustrating thing about that is that I took the code from the video and it worked, but I was never able to understand why it worked. This is a terrible place to be if you need to debug or adapt the code for some other purpose. I’m not fond of having to use a black box in an educational environment since the whole point in taking the class is to learn what things do, how they work, how to apply them to problems, etc.

This project was complicated and difficult. There were a lot of issues ended up in one of us finding a solution by accident or having to constantly ask for help from faculty. The reference material we needed to solve problems was not available or was very hard to find.

This project appears to really have been about how to approach a seemingly insurmountable problem. The most important takeaway from this is that the first stages of a project like this should be intensive design work that involves breaking down the problem into as small and as manageable pieces as possible so that each piece and be assigned to an owner and conquered without feeling the weight of the whole task.

*Having completed the program, is there anything you would have done differently? Did you find working in a team helpful for programming and understanding material?*

I would have done several thing differently. The first is that I would have created a flow chart immediately and then come in for help as often as possible to get help on how to further break it down into manageable pieces. I would also have made a much quicker assessment of each team member’s level of knowledge, abilities and motivations so that each person’s strengths could be better capitalized on. Because this wasn’t done well, a lot of time and resources were wasted.

Due to the harshness of the grading in this course (for example, we received a “D” for our testing document despite it being well past 70% complete) I would also have submitted every gradable item ahead of time to ensure we received full credit on the final product. I’m worried I won’t get full credit on this reflection despite the fact that I’ve included the explicit instructions and have addressed them directly and in detail.

Face to face meetings would have been much better spent using some remote communication device if it had the ability to share the computer screen. Next time we will do better research in this area. We could have used a much better way to flow chart the design as well and ended up working from photographs of flow charts written on a whiteboard.

Working in a team was good and bad. I learned a lot from David about PLP and programming design in general. I’d have missed his insights if I’d had to work on this alone. If I hadn’t been able to discuss the design, the code and figure things out with him, I wouldn’t have understood half of what I do now.

It was also good in a painful way because I ended up being not a very good leader, although I know why. This hurts but I’ll know what to do differently next time. For example, if we have team members who aren’t up to the challenge technically, I’ll be sure to assign them specific tasks based on their strengths rather than waiting and hoping they decide to contribute something.