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Summary of Lab

We learned basic GPIO, register manipulation, use of timers/interrupts, basic ADC, and how to work in a fully embedded environment. We also learned how to program state machines, how to work with events, bit masks and bit manipulation. We learned how to implement a debouncing filter for the buttons, and got to know how to work with the OLED display a bit more.

Approach to Lab

I went section by section, file by file, which worked fine because each assignment was basically built up on the previous ones. Wouldn't approach it differently. One thing that came up was the OLED display not seeming to return the correct values; This was apparently a result of the OLED not clearing the entire display upon update. Easy to fix but boggled my mind for a bit.

Implementing the Lab

I think it went fine. I spent about 10 hours on it, with there being a lot of content. I liked the emphasis on lower level stuff. Didn't like how the LED state was ordered with the first LED routed starting from the MSB, it makes things confusing in my opinion. Hardest part was probably figuring out the debouncing filter and testing it (it looks like not much bouncing happens with these buttons, unfortunately).

The lab was fine, grading was fine, very worthwhile and I am sure people learned a lot. Lab manual and examples during class covered the material in enough detail, I suppose.

Also, it looks like some of the info in the lab manual wasn't updated? The last page included information about converting the raw ADC results to the voltage of the potentiometer, which wasn't included in the assignment. Most of the explanations in the lab manual were very clear, however.