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Final Project Proposal

For my final project I will implement both problem one and two on my PIC32. I will be attempting problem three but am unsure if I will commit to submitting this with my final submission.

Problem one seems like a simple implementation of a new interrupt which will trigger when a button is pressed. In the interrupt it would either increase or decrease the frequency by a specified amount. To do this we would simply take each note value and either increase it or decrease it. Using another button to decide between raising and lower, basically a logical TRUE or FALSE. True being increase and FALSE being decrease.

For problem two all we need to do is set an interrupt to set a flag when the binary value gets higher than or equal to our threshold. I do not think much code in lab 10 will need to be modified to implement this.

For problem three there are many ways to accomplish this. One way that I believe would work is to have the rotary encoder select each specific binary value one by one. For example, you turn the rotary encoder to either set bit 0 to one or zero, then press the button which will move to bit 1, rotate to set to one or zero and repeat. Then, once all binary values are set we press the button built into the rotary encoder which will store it on the SN74HC595 shift register. This may not be the best way to implement this solution, but I believe it is a viable method. Another viable option is to set multiple bits at a time, for example setting bits 0 through 3 and then pressing the button to set bits 4 through 7. That way we are not having to turn the dial so much to get our binary value. Theoretically with my first implementation you would only need to turn the rotary encoder eight times to make bits 0 through 7 all one (255). The only down side is that we’d practically have to completely recreate lab 6.