Lab Number and Title: Lab 5 – Displaying Symbols Using 7-segment LED

Student Name: Antonio Maldonado

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Purpose of Lab

The purpose of Lab 5 was to use a seven-segment LED to display four characters (0-9, A-Z) that the user inputs. Also, we were to program the code to where it displayed a ‘scrolling’ pattern for the characters.

Description of Solution(s)

The code for this program was rather tedious. There was a lot of functions code that you mainly need to write only once, then copy the code onto the other functions for each symbol and change up the calls to each different function for each symbol. I started my program by writing the code for just one symbol display and all the necessary functions which it called, then used that as an example for the rest of the symbol displays across the program.

Test Results

To test my program, I used simple four character inputs, and took note of whether or not the correct display occurred, for both just the display of the characters, and also for the scrolling display. For example, I used both numbers (1234), letters (TONY), and both (CS73). Once the display was correct, I knew the program was complete. As for bugs that I found when trying to compile my program, there was mostly a lot of syntax errors. However, there was a runtime error in which it didn’t read in my inputted values nor display the characters. The TAs helped me to find the issue and after a great deal of time spent trying to figure it out, we found that I had simply forgotten to pop the last register in the delay function and was causing everything to kind of fail.

Answers to Questions

*If the lab has questions on it, answer them here. Use one paragraph for each answer (the HTML <p> tag).*

 N/A

Discussion

In this lab, I learned a variety of things including setting values into specific ports and how to set and clear bits in I/O registers. Also, I feel we got a lot more practice with delays, calls to functions, and the push and pop instructions. Although this lab was a bit difficult and required more than a few hours of coding, I enjoyed it. The feeling of finally getting it to work was better since it took a few more hours than the previous labs.

Contribution to Team Work

This was a team work lab assignment, but unfortunately, I don’t have a lab partner so I had worked mostly on my own, although I did discuss with my classmates for certain things

References

*Document any sources you used in completing the lab, outside of the normal course material (website, textbook, manuals). Perhaps you found an algorithm on the web or some other insight somewhere else?*

N/A