

Lab 2 Report

Introduction

This lab has tasked us with writing/editing a program that interacts with the onboard LCD display. We are to make a program emulating the game “Snake”, where we will be required to add many different functionalities such as reversing movement, increase/decreasing speed, and growing/shrinking the snake’s size. The method of inputting commands to the board will be a combination of external and internal buttons; some will be on a breadboard and one will be on the board itself.

Microcontroller Concept

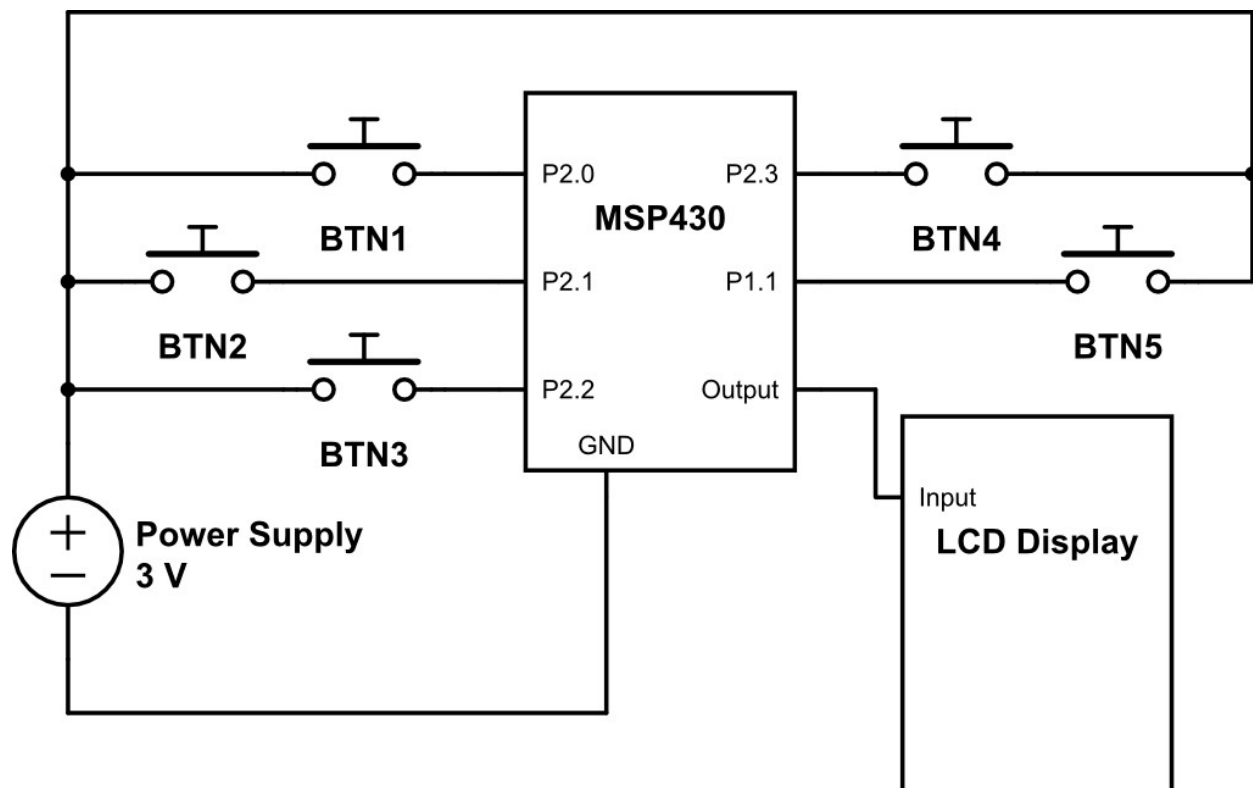
Microcontroller on-chip peripherals used:

- LCD Display (A1-A6)
- Button 1.1

We used the LCD Display in order to visualize the snake, the focus of the game. We only used the outer rim of the numeric display because we only needed the snake to follow a simple loop around the LCD Display.

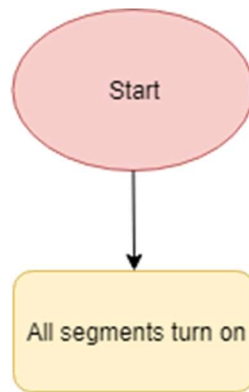
We used Button 1.1 in order to change the direction the snake moved on the LCD Display. We needed to use this button because we needed an extra button since our lab kit only had 4 buttons.

Hardware Design

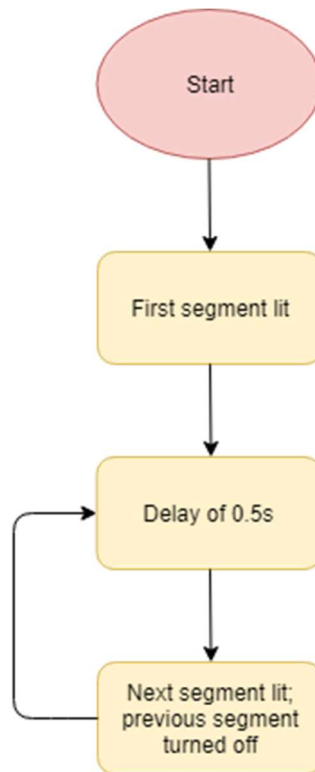


Software Design

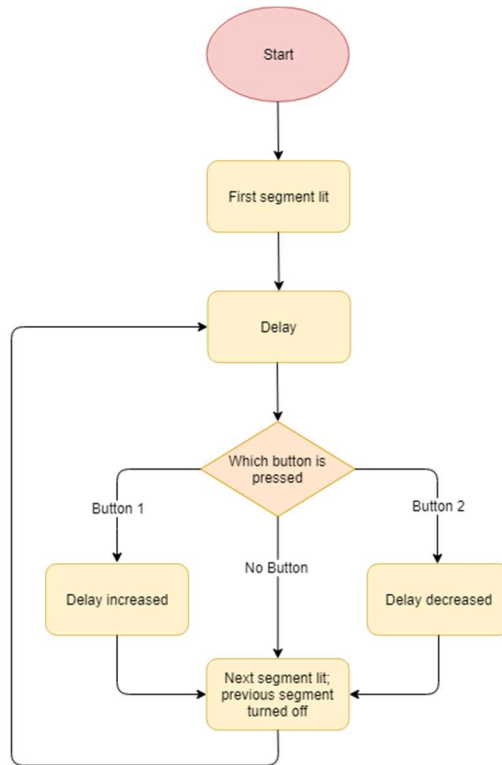
Exercise 2



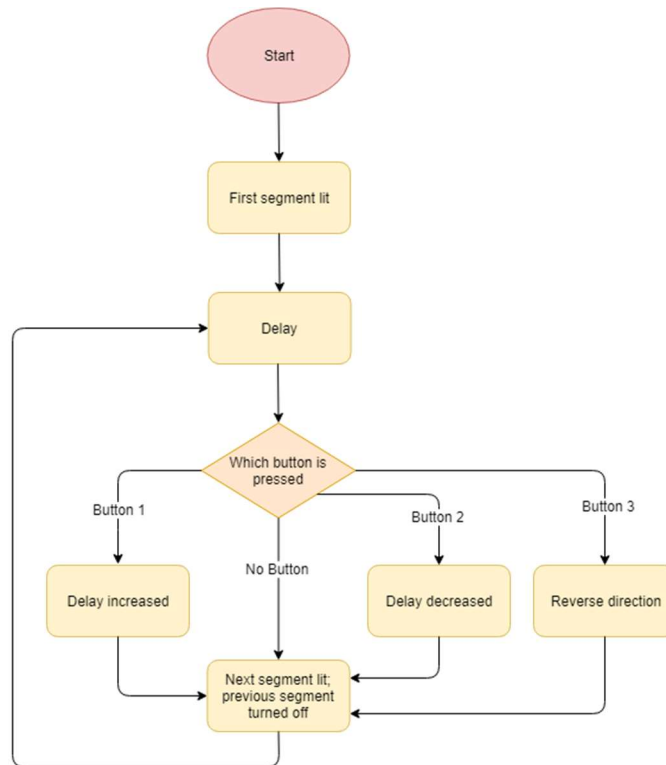
Exercise 3



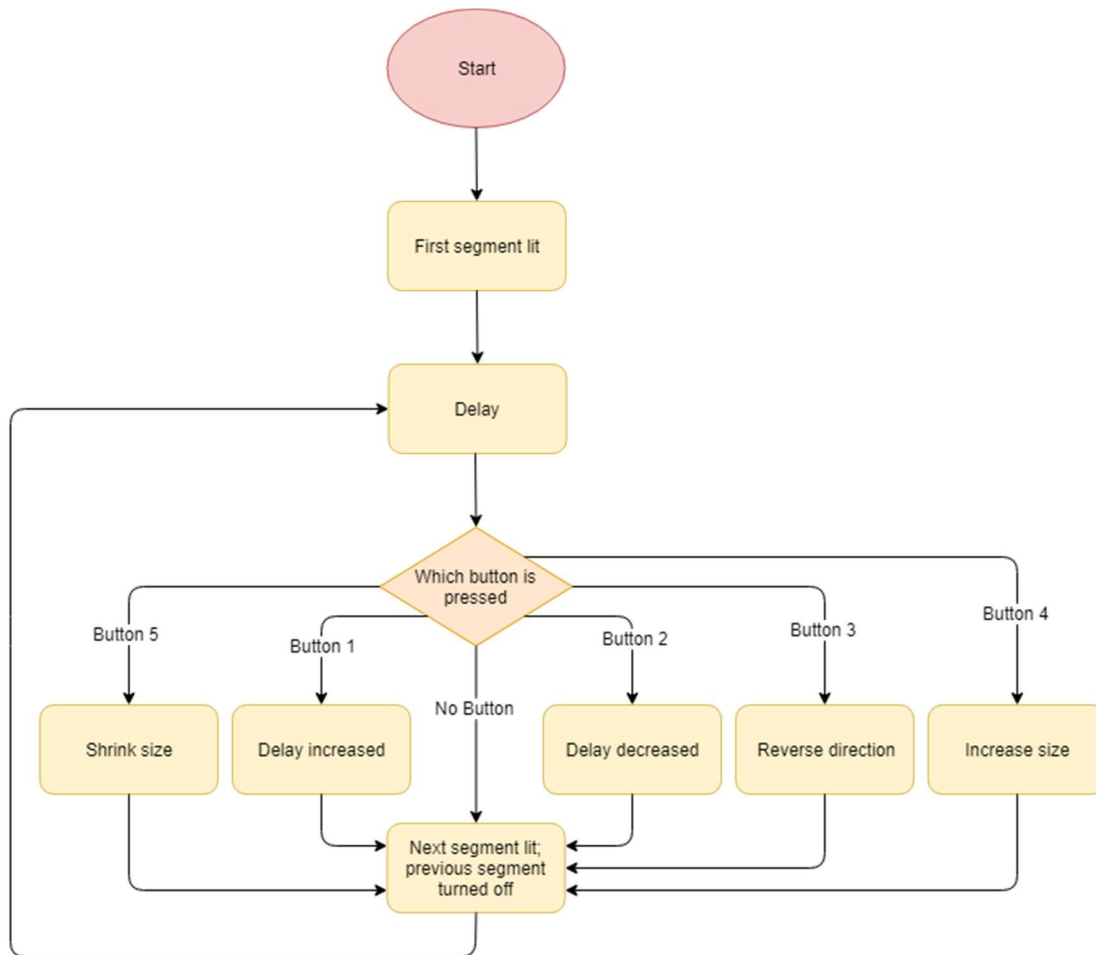
Exercise 4



Exercise 5



Exercise 6



Conclusion

My lab's outcome was a successful rendition of the game Snake on the MSP430. I had a few errors programming the different functionalities required by the lab, but all were ironed out. There were a few un-repeatable bugs that I could not pin down to one specific code segment, but they were rare. All desired functions are accounted for.