7 Segment Display

Michael Caruana

RBT173 – Introduction to Microcontrollers

Matthew Prater – Professor

The 7 Segment Display is what some people call a digital number for the lack of a better word. At least that’s what I called it for many years. And up until this class I didn’t know one had to program the numbers into the display.

I did this project entirely in Tinkercad because the dipswitch is the best switch to use, and I don’t physically have any dipswitches. Following the instructor and then following the instructions afterwards I came up with the following in Tinkercad. The project shows the wires connected to the ports 7 thru 13 in different colors and a ground wire. Then on the other side the dipswitch is connected to ports 2 thru 5. I used all green wires for the dipswitch, mostly for contrast. The switches are connected from one end to the ports and then the other end is set to ground on the Arduino.

The switches start in the 1 position and when switched to the 0 position they will trigger code that will run and display a corresponding number. The switches are setup exponentially from right to left(Figure 1). Number 4 is the ones column, number 3 is the two’s column, number 2 is the four’s column and number 1 is the eight’s column. So, flipping number 4 and number 3 will display 3, since one plus two is three. Flipping the switches in such a way that will display the numbers 0 thru 9 is a matter of addition. For the number 1 to display, merely flip the number 4 switch to the up or 0 position. I have added one additional letter to display. When all of the switches are in the up or 0 position it will display a capital letter A. This was just for fun.

Link to the video: <https://youtu.be/-P3l8_0S-10> – 7 Segment Display

List of components:

1 Arduino UNO board

1 Dip Switch

1 7 Segment Display

1 220 Ohm Resistor

Wires to connect

1

2

3

4



Binary 1^1

Binary 1^2

Binary 1^4

Binary 1^8

Figure 1: