**Objective**

* Develop an understanding of the Analog to Digital Converters (ADC’s) and how to interpret the numbers from the Arduino analogRead() function.

**Part 1**

* I attached the potentiometer to my Arduino, then uploaded the prelab code to my Arduino. Then I used the potentiometer to adjust the voltage (1.5, 2.5, 3 volts) which was then printed out using the Serial monitor. This was verified by the instructor.
* See **Appendix A** for the code for this section of the Lab

**Part 2**

* I attached the AnaDisc’s analog lines (1+, 1-, 2+, 2-) to the Arduino using a breadboard. I then opened Waveforms and used the Scope app to view the voltage averages. Here I could observe the average for the original 5 volts we had been lost due to resistance or other factors by a little less than .4 volts. This let me observe that the voltage was ~4.6 Volts.
* I then recorded multiple values from the Arduino Serial Monitor, and the Scope from AnaDisc’s. I compare these in the table listed below:

|  |  |
| --- | --- |
| **Analog Discovery Voltage** | **Arduino Serial Monitor** |
| 1.39 V | 1.50 V |
| 2.31 V | 2.50 V |
| 2.78 V | 3.00 V |

**Part 3**

* I attached a jumper to 3v3 and REF ports on my Arduino. This enabled me to use the analogReference() function and attain greater accuracy with my measurements.

|  |  |
| --- | --- |
| **Analog Discovery Voltage** | **Arduino Serial Monitor** |
| 1.51 V | 1.50 V |
| 2.52 V | 2.50 V |
| 3.02 V | 3.00 V |

**Questions**