Microprocessor HW5  **Ding Qin**

**Dennis Your**

In this homework assignment, we worked on converting an analog input taken in through a photo-resistor into a digital output, which went through a speaker. To start we first looked at the example code called ADC\_Poll. We identified how the conversion process worked and modified it to output a TA0\_BIT. In the ADC\_handler, the variable latest\_result contains the result of the conversion. Since the original frequency after the conversion was too low, we multiplied this value by 15 and set it equal to TA0CCR0. This will produce a more audible tone.

In the circuit, to receive an input, we set up one end of the photo-resistor to connect to pin 1.4 and the other end to go to VCC. Then we put a resistor in parallel to the photo-resistor, which was connected to ground. To hear the output, we set the direction of pin 1.1 to be the output and connected that to one end of the speaker. The other end of the speaker went to ground.

To test out the circuit, we shined a light on the photo-resistor. As it got brighter the frequency got lower and as it got darker the frequency got higher.