#### Dev Shah

#### WEEK 12:

**Date:**4/1/22  
**Total hours:** 6  
**Description of design efforts:**  
This week I was successfully able to write and read from the accelerometer. The images below (Image 12.1 and Image 12.2) show the various accelerometer readings in the X, Y, and Z axes as 16-bit int values. 16-bit ints have a maximum value of 65536. An increase to this value for a certain axis depicts the device accelerating on that axis.  
The problem that I was experiencing appeared to be a wiring issue. The power provided from the microcontroller to the rest of the breadboard was mistakenly using the RESET pin instead of the 3V pin. As prototyping continued, the microcontroller and other parts were used on different breadboards. This explains why I was only able to write to the accelerometer when attempting to write to it and read from it, like in Image 11.1 above. The accelerometer was only being powered when the program initially started, so it would be unable to continuously provide data back to the microcontroller.  
I am now reviewing how to configure the accelerometer to detect a free fall. This device already has a free fall detection register built-in, so I am looking at how it should be set and what other registers are needed for the detection to work correctly.

A screenshot of a computer

Description automatically generated with medium confidence

Image 12.1

Text

Description automatically generated

Image 12.2