B03901149 陳咸嘉
B03901060 林奕竹

Lab: I2C Raspberry Pi – Arduino

We have two different codes that achieve the same result in Raspberry Pi. One is i2c-pi-arduino.c, the other is PythonI2C which is a python script. With an Arduino Uno running its side code, on the Raspberry Pi side we will be prompted to input a number between 0 ~ 255, the input number will be sent to the Arduino Uno via I2C and Arduino will send a number equal to an increment of the original input we have given.

Example of what we saw on the Pi:
      Please enter a number 0 – 255: 18
      Sending 18
      Received 19
      Please enter a number 0 – 255:

Example of what we saw on the Arduino Serial Monitor
      data received: 18

Lab: ADXL345 Module

In this lab, we modified the c code and python code in the previous lab (I2C) to read the values from ADXL345 through I2C. The main change is to set the address to the ADXL345 address, which is 0x53, after the address is set we then select certain registers to specify the modes. For example, 0x2C is the Bandwidth Rate Register, 0x2D is the Power Control Register, and 0x31 is the Data Format Register. After the initial set-up, we then implement a function to convert the input bites to the correct format and print it on screen. The codes are adxl345.c and adxlPython.

Reference: https://github.com/ControlEverythingCommunity/ADXL345