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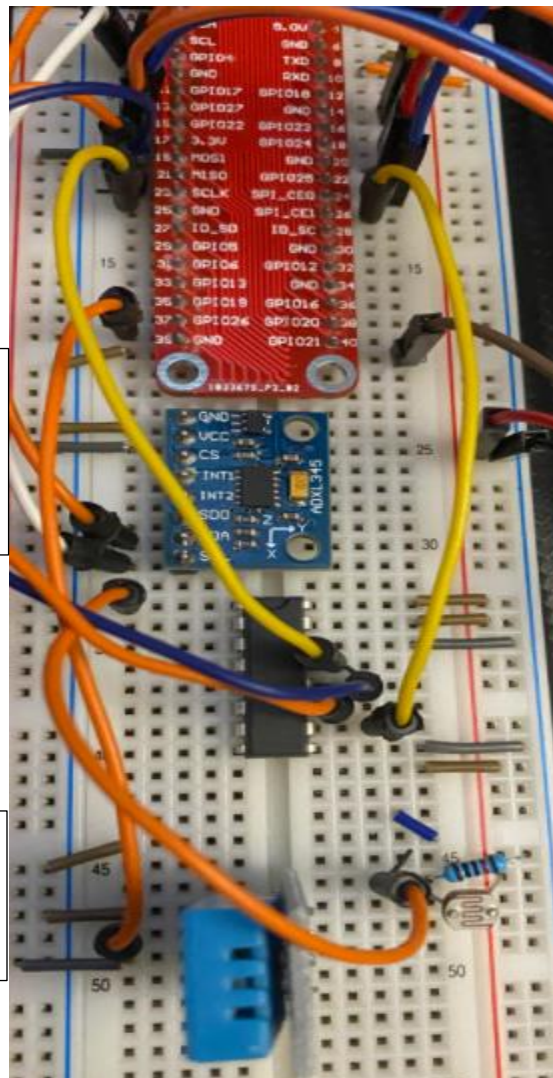
ECE-350-001

12.14.2020

### Final Lab: Mission Impossible Security System

**Description:** The purpose of this lab is to create a security system that reports whether it is night or day and the humidity/temperature every hour. The system must also be able to detect motion in the room using a PIR and the system will be able to tell if the bust moved with the extremely sensitive ADXL345. Should someone be authorized in the room their will be a 4-digit code that will need to be inserted.

### Breadboard:



#### ADXL345

GND = GND (Pin 39)  
VCC = 3.3V (Pin 17)  
SDA = SDA (Pin 3)  
SCL = SCL (Pin 5)

#### DHT-11

GND = GND (Pin 39)  
VCC = 3.3V (Pin 17)  
Output = GPIO26 (Pin 37)

#### MCP3008

VDD = 5V (Pin 4)  
VREF = 5V (Pin 4)  
AGND = GND (Pin 6)  
CLK = SCLK (Pin 23)  
DOUT = MISO (Pin 21)  
DIN = MOSI (Pin 19)  
CS = SPI\_CE0 (Pin 24)  
DGND = DGND (Pin 6)  
CH0 = Input from Photoresistor

#### Photoresistor

5V is connected to the Photoresistor connected in series with 10k resistor that is connected to ground. Orange wire is the output from the circuit which is the input for CH0.

## Breadboard (continued):



### PIR

GND = GND (Pin 6)  
VCC = 5V (Pin 4)  
Output = GPIO21 (Pin 40)

### MCP3008

Purple = GPIO17 (Pin 11)  
Yellow = GPIO18 (Pin 12)  
Blue = GPIO27 (Pin 13)  
Orange = GPIO22 (Pin 15)  
Green = GPIO23 (Pin 16)  
Red = GPIO24 (Pin 18)  
Blue = GPIO25 (Pin 22)  
Orange = GPIO4 (Pin 7)