Installation

<u>Temperature, Altitude, and Humidity Sensor:</u>

        For our system, we will be using an Adafruit BME280 for reading temperature, altitude, and humidity values. We will need to download the necessary libraries to run the sensor. Installing the BME280 Library

1. On the Jetson Nano, you will need to open up a terminal.
2. In the terminal, type to download the library onto the Jetson Nano:
   ```
   $ pip3 install adafruit-circuitpython-bme280
   ```
3. To update the library for any bug fixes, use this in the terminal:
   ```
   $ pip3 install adafruit-circuitpython-bme280
   ```
4. Library for the sensor should be installed. To check installation, use in the terminal:
   ```
   $ pip3 list
   ```

Configuration and Use

<u>Temperature, Altitude, and Humidity Sensor:</u>

        For the BME280 Sensor, we will be using four pins of the Jetson Nano: 3.3V (pin1), GND (pin9), I2C_2_SDA (pin3), and I2C_2_SCL (pin5). On the sensor, we will be using Vin, GND, SDI, and SCK respectively. The other connectors of the sensor will be not connected to anything.

Maintenance:

<u>Temperature, Altitude, and Humidity Sensor:</u>

        For maintenance on the BME280, we recommend that if removed from the system you ground yourself by touching a metal object, this is to prevent ESD harming any part of the sensor or system. The operating temperature for the device is from -40^0C to 85^0C and should not surpass the limits if you would like better accuracy.

Troubleshooting Operations:

Temperature, Altitude, and Humidity Sensor:
If you are unable to get values read from the sensor:

      Ensure that the pins of the BME280 sensor are connected to the right pins of the Jetson Nano. Refer to the figure below for extra guidance.

Connection	Function	Jetson Nano 40-Pin Header		Function	Connection
Temperature/ Humidity Sensor Vin (Red Wire)	3.3V	1	2	5V	x
Temperature/ Humidity Sensor SDI (Blue Wire)	I2C_2_SDA	3	4	5V	x
Temperature/ Humidity Sensor SCK (Green Wire)	I2C_2_SCL	5	6	GND	GPS Sensor GND (Brown Wire)
x	---	7	8	UART_TX	GPS Sensor Rx (Orange Wire)
Temperature/ Humidity Sensor GND (Black Wire)	GND	9	10	UART_RX	GPS Sensor Tx (Yellow Wire)