Submission Date	2018-09-11
Project Name	Air Quality Monitor
Student Name	Princess Hernandez
Project repository	https://princesshernandez.github.io/VOC_Sensor/
SensorEffector choice	CCS811/BME280 VOC sensor (0x5B)
The database will store	toxic and combustible gas level data retrieved from the device
The mobile device functionality will include	a series readings of Total Volatile Organic Compounds (TVOC) and equivalent carbon dioxide (eCO2), as well as the date the data is retrieved.
I will be collaborating with the following company/department	Arduino or Raspberry Pi, Prototype Lab, Aeroqual, SYFT Technologies, GasSensing
My group in the winter semester will include	Kenneth Chen
50 word problem statement	Volatile Organic Compounds (VOC) are carbon based chemicals that can be natural or man-made in the environment. Some are significantly hazardous to human health, and even the environment, when an extensive amount is present in the air due to odourless or colourless gas. When exposed to VOC, it can cause damage to major organs in the body such as lungs, stomach, nerves and brain.
100 words of background	The VOC sensor can detect hazardous compounds by photoionization. It uses ultraviolet light to ionize compounds in the air into positive and negative ions to determine any toxins present. The sensor can measure equivalent calculated carbon dioxide (eCO2) within the range of 400 to 8192 parts per million (ppm) and Total Volatile Organic Compound (TVOC) concentration within the range of 0 to 1187 parts per billion (ppb). Therefore, it is able to detect different types of toxic and
Current product APA citation	Miller, Dean. (2017, August 2). Adafruit CCS811 Air Quality Sensor Raspberry Pi Wiring & Test. *Adafruit* . Retrieved from: https://learn.adafruit.com/adafruit-ccs811-air-quality-sensor/raspberry-pi-wiring-test
Existing research IEEE paper APA citation	Fang, L., Ding, Z. & Li, Jinhai. (2010, April 19). Temperature and flow rate compensation for air auto-monitoring system based on multi-sensor data fusion. Retrieved from: https://ieeexplore.ieee.org/document/5451735/
Brief description of planned purchases	The Raspberry Pi will be used as a main component of the project. CCS811/BME280 VOC is a sensor that measures indoor air quality. QWIIC Shield for Raspberry Pi.
Solution description	VOCs can be found in everyday products such as cleaning supplies, paint, cosmetic products, fuel and many more. Both short and long term exposure to a high amount concentration of VOC can lead to human health deterioration. For example, in many workplaces, like the oil and gas industries, there may be a limited amount of ventilation and workers being exposed to such air can cause the company or industry a large amount of money for improper workplace environment. So, every level (low and high) of VOC concentration must be monitored.