

Submission Date	2019-09-10
Project Name	Greenhouse System Scale Model
Student Names	Ryan McAdie, Daniel Bujold, and Aiden Waadallah
Project repository	https://github.com/McAdieCENG/CENGProject
Sensors Effectors choices	BME280 For Temp and Humidity, EK1940 Soil Moisture Sensor
The database will store	Temperature, Humidity, Soil Moisture Levels
The mobile device functionality will include	The mobile application will display temp, humidity and soil moisture levels when the user logs in. They will also be given the option to access a camera to take a picture to post on social media
I will be collaborating with the following company/department	I will be collaborating with Humber Arboretum
My group in the winter semester will include	Myself (Ryan McAdie), Daniel Bujold
50 word problem statement	The real life problem being solved by this project is that Humber arboretum and several other nurseries don't have a proper system to measure temperature, humidity and soil moisture levels. This monitoring system will help them to keep track of everything related to the health of the habitat.
100 words of background	Humber Arboretum needs a system to measure and display, in real-time, the appearance, temperature, humidity, and soil moisture of the plants in its nursery. Through an app, employees can view these measurements online. It will be connected to the firebase database through the internet. Firebase server will hold all the levels measured by the sensors and will send it to the mobile application. The mobile application will display those levels on the screen when the user's login. There is an additional camera option in the app which will allow users to click the picture and share it on social media.
Current product APA citation	(n.d.). Monnit Remote Monitoring Systems for Greenhouse Monitoring. Retrieved from https://www.monnit.com/solutions/greenhouse-monitoring Labbate, E. (2018, March 19). Greenhouse Sensor Systems for Real Time Monitoring and Control Greenhouse Automation Systems. Retrieved from https://www.climatecontrol.com/blog/greenhouse-sensor-systems/
Existing research IEEE paper APA citation	An IoT-Based Traceability System for Greenhouse Seedling Crops G. Ramirez-González (2018). . IEEE Access, 6, 67528-67535. https://ieeexplore.ieee.org/document/8502066
Brief description of planned purchases	A Raspberry Pi, a BME280 sensor, an EK1940 sensor and possibly a camera that we can hook up to the RPi to take remote photos
Solution description	To build a device capable of reading temperature, humidity and soil moisture to be used in plant nurseries. Along with a constructed mobile application that can be used to access a database to show users real-time information regarding temp, humidity and soil moisture