IN PARTNERSHIP WITH PLYMOUTH UNIVERSITY

Name: Chamath M Badu
Student Reference Number: 10638127

Module Code: PUSL2008	Module Name: Introduction to Internet of Things
Coursework Title: IOT Project Proposal	
Deadline Date: 29/4/19	Member of staff responsible for coursework: Dr. Chandana Perera
Programme: BSc (Hons) Computer Security	

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Group work: please list all names of all participants formally associated with this work and state whether the work was undertaken alone or as part of a team. Please note you may be required to identify individual responsibility for component parts.

Mulugunage K Samaraweera - 10638202
Wanni G Priyashan – 10638232
Mithila Eashani Sapukotana - 10638120
Sachin Vinod Jayakody - 10638261

We confirm that we have read and understood the Plymouth University regulations relating to Assessment Offences and that we are aware of the possible penalties for any breach of these regulations. We confirm that this is the independent work of the group.

Signed on behalf of the group:

Individual assignment: ***I confirm that I have read and understood the Plymouth University regulations relating to Assessment Offences and that I am aware of the possible penalties for any breach of these regulations. I confirm that this is my own independent work.***

Signed:

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Content

1. Acknowledgement

In performing our assignment, we had to take the help and guideline of some respected persons who deserve our greatest gratitude. The completion of this assignment gives us much pleasure. We would like to show our gratitude to Dr. Chandana Perera .We would also like to expand our deepest gratitude to all those who have directly and indirectly helped us in completing the assignment.

Many people specially our classmates and team members itself, have made valuable comments and suggestions on this proposal which gave us an inspiration to improve our project.

2. Introduction to IOT

IOT is a concept that connects all the devices to the internet and let them communicate with each other over the internet. Embedded with electronics, Internet Connectivity and other forms of hardware (such as sensors), these devices can communicate and interact with others over the Internet, and they can be remotely monitored and controlled.

Our project is on an Air pollution monitoring system.

Inside NSBM premises, when considering about the canteens the safety is very low. We implemented this project to improve the safety of the university. This system is able to detect Humidity, Temperature and Air quality as well.

The air pollution monitoring system was designed to monitor and analyse air quality in real-time.

3. Objective

The general objective of an air quality monitoring system is to determine air quality in a region to assess its effects on human health.

Users can stay updated about possible hazards on their mobile devices at all times from anywhere even if they are away from their property

To detect fire or fire hazards promptly and reliably

To alert occupants to the dangers

- This system will be making an alert if the following conditions come for a dangerous point.
    - Temperature incensement above 40 C
    - Air quality becomes impure

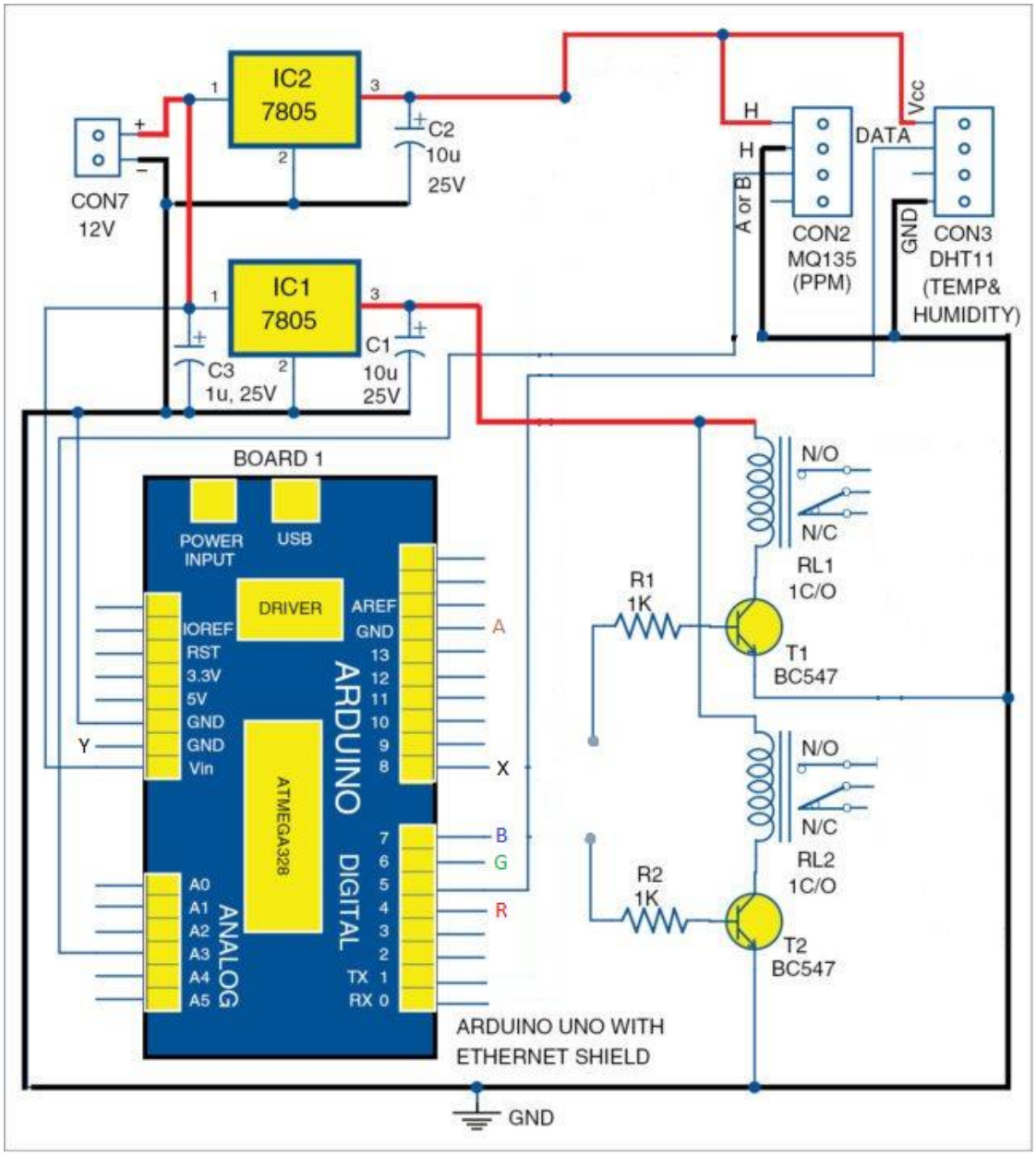
Key features of the system

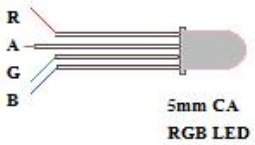
- Real Time Monitoring
- Real Time Alerting
- User-Friendly Interface
- Easy to configure.

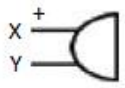
4. Problem Statement

According to the way the buildings are placed inside our university our canteen is situated very close to the students' hostel. So incase if a fire takes pace the whole area will get fired and this will put the students in danger. So we decided to overcome this problem by implementing a project which will help us to detect certain factors. This detector can detect smoke in the air and therefore alert against any potential fire.

5. Circuit Design





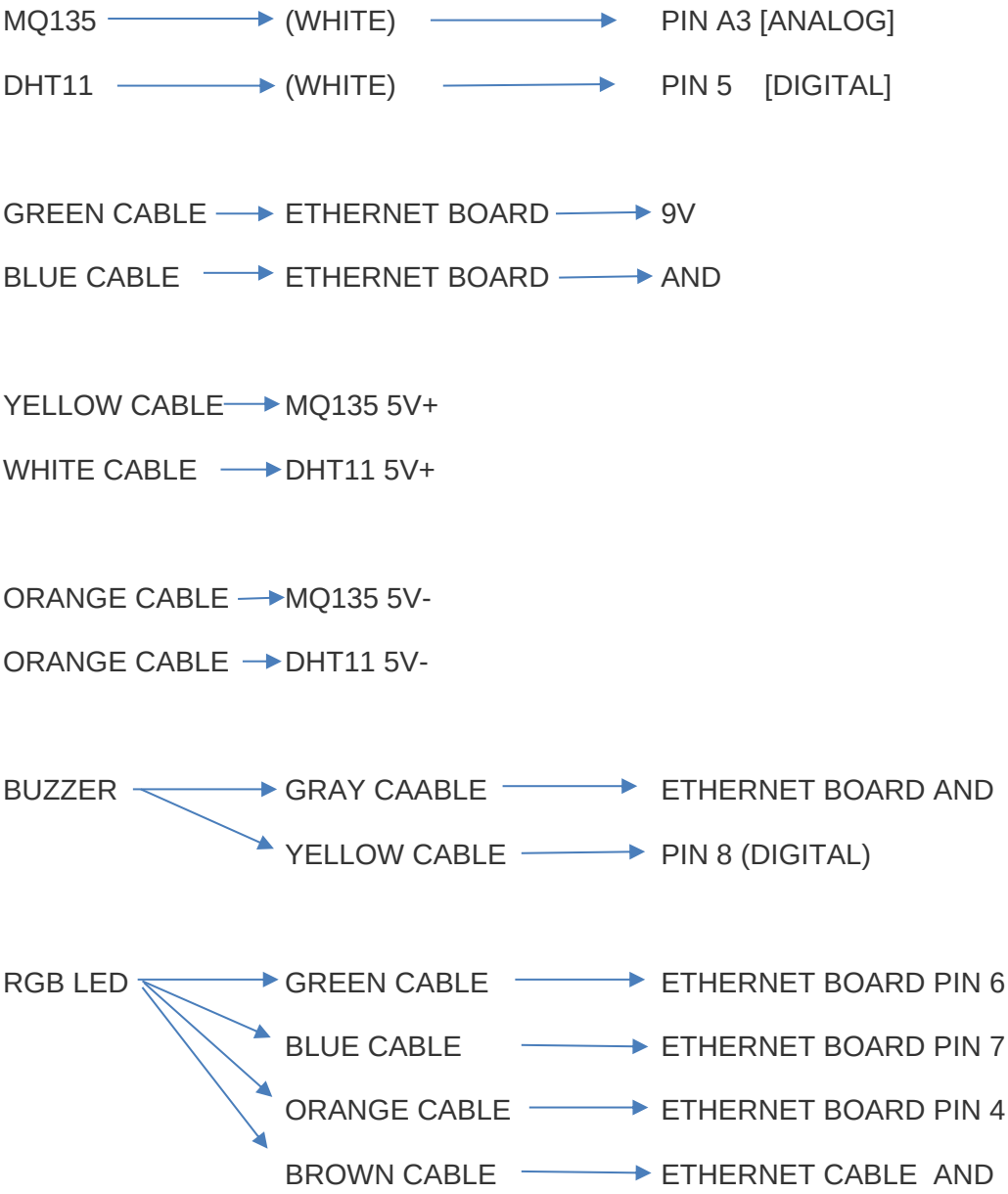


6. Required devices

- Arduino UNO R3
- Ethernet Shield
- MQ135 Air Quality Sensor
- DHT11 Temperature and Humidity Sensor
- Buzzers and Lights to Indicate the Changes
- 12v Transformer

7. Development

Function - Gas detector is connected to the internet. The mobile device is also connected to the internet. From the application we have developed everything can be monitored.



External view

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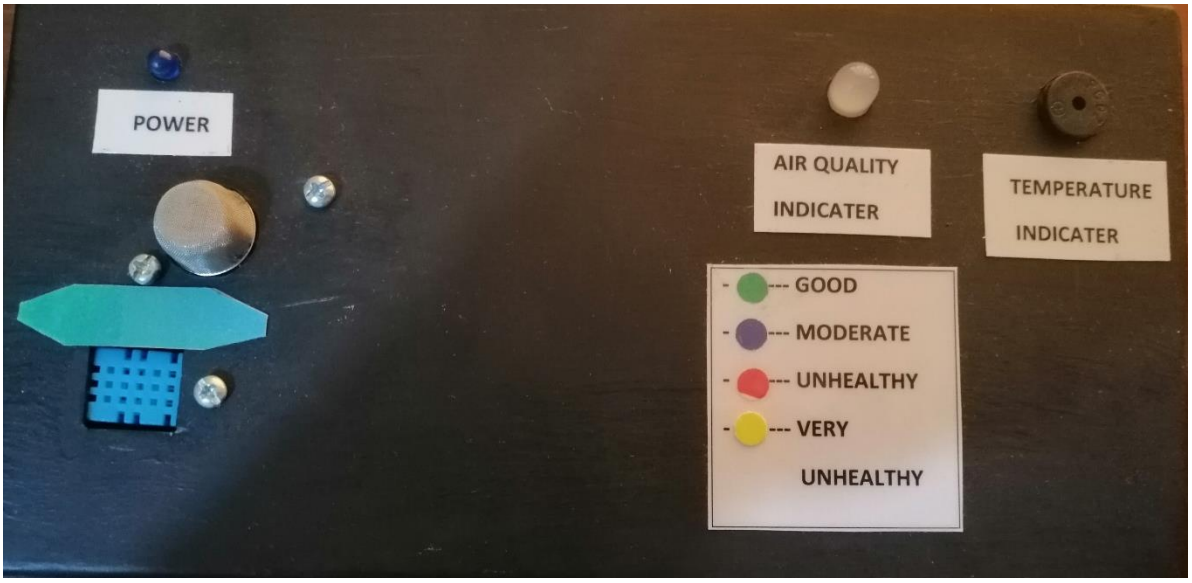
POWER
AIR QUALITY
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--- UNHEALTHY
--- VERY
UNHEALTHY


POWER
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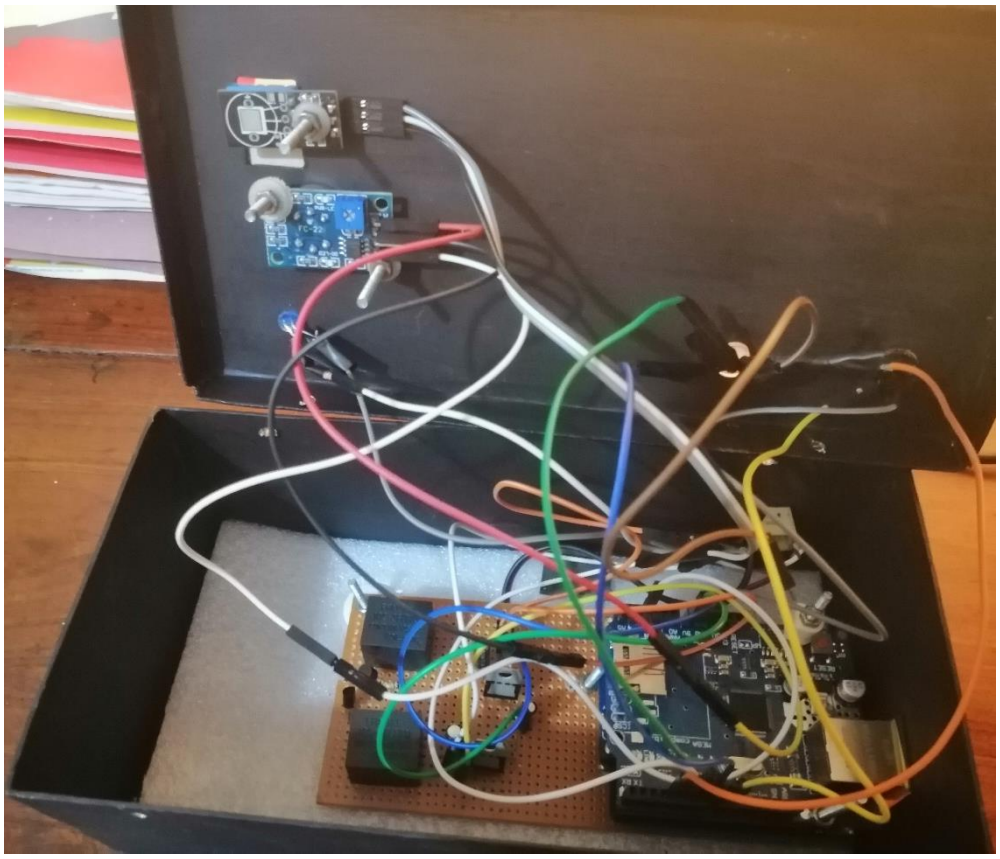
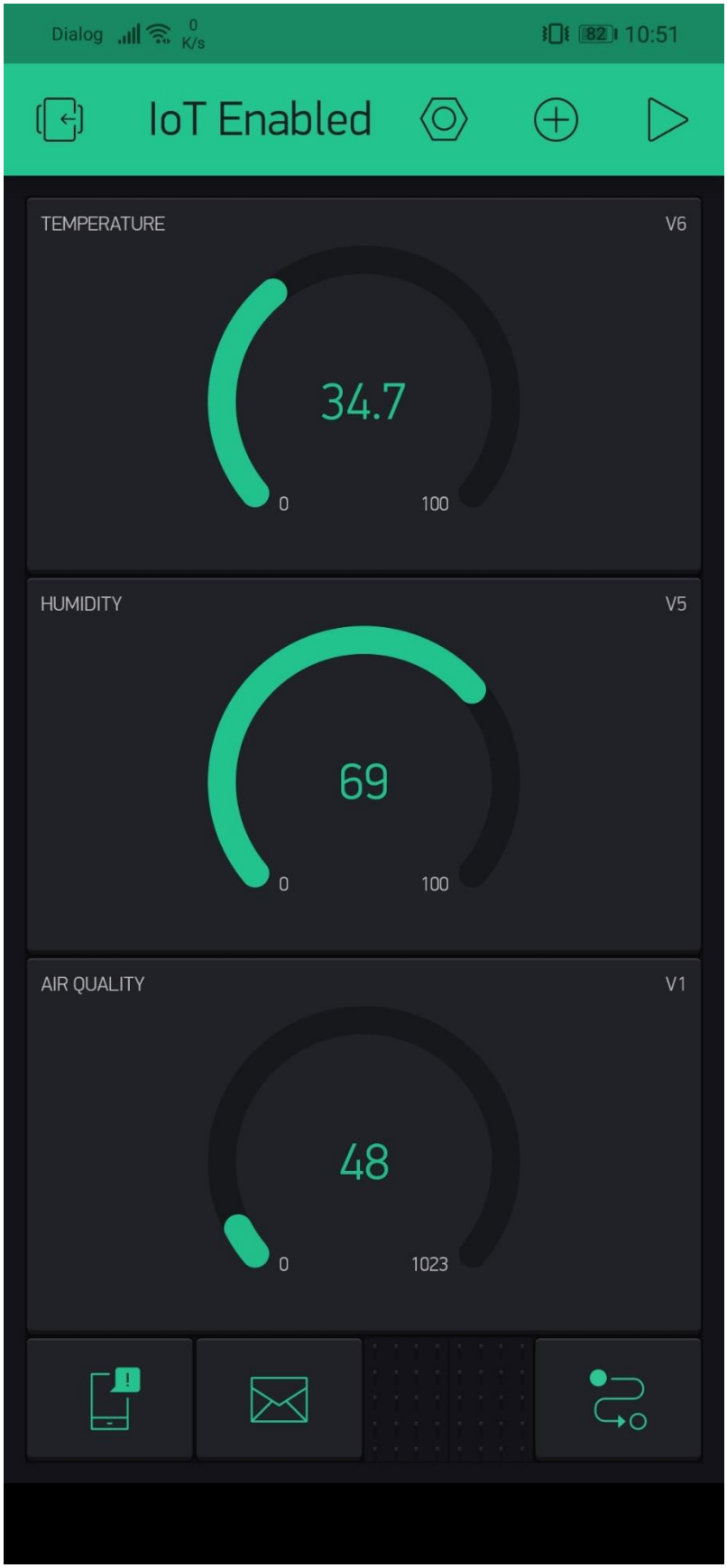
--- GOOD
--- MODERATE
--- UNHEALTHY
--- VERY
UNHEALTHY

Internal View



Interface


Dialog
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K/s
82
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IoT Enabled
TEMPERATURE
V6
34.7
0
100
HUMIDITY
V5
69
0
100
AIR QUALITY
V1
48
0
1023

8. Conclusion

When looking back we learned that internet and connectivity is the key component in software development.

We focused on the requirement and we designed the bow and the system which should be implemented.. We had to make it in an attractive way for the users. We faced a lot of problems when creating the system;

Faced issues with how to give power and how to make this product small scale and good in budget wise with making it to be commercial wise.

Nevertheless with regarding to the problems we had we are happily to finish this project in almost successive way thankfully for everyone who helped us in anyway to make this project a success.