

# WeirWeather Group Meeting 1 Minutes

Date: 11:00, Fri 04/10/19

Room: RC473

Minute Taker: Zack North

## 1 Attendance

Zack North, Callum Brooksby, Tesfu Gebremedhin, Alexander Ulrichsen, Mario Manca

## 2 Announcements

## 3 Review Previous Meeting Minutes

The previous meeting's minutes were reviewed and accepted by the group.

## 4 Agenda

### 4.1 Discuss Project Description

Design, Manufacture and install a weather station for the James Weir Building.

HTML front-end to:

- Visualize current weather
- Historical Trends
- Suitable back-end data storage and archiving

Sky-camera/ Web cam – how you gain valuable insight

Performance spec of instrumentation – meteorological standards of accuracy – Budget/ quantify accuracy

Virtual Linux box – Data storage – html front-end

### 4.2 Discuss Project Objectives

1. Design and build instrumentation (sensors, housing, etc)
2. Research and use sustainable material
3. Automate system
4. Send data to existing website
5. Compare data to external services using API's and visualise data
6. Extend sensor suite to include air quality data
7. Self-sufficient through renewable power
8. Forecasting algorithm

Areas of interest for each person relating to the project objectives were discussed.

Alexander - 3, 4 and 5.

Mario - 1 and 6.

Callum - 1, 2, 4 and 5.

Tesfu - 1, 2, 6.

Zack - 1, 2, 3, 4, 5 and 7.

#### 4.3 Discuss Software Required

- C for microcontroller programming (to read data from sensors)
- IAR for C development
- Autodesk EAGLE for PCB creation
- MATLAB for data analysis
- Autodesk inventor to design housing unit
- Potential use of Python and/or Java for API

#### 4.4 Discuss Hardware Required

Sensors:

- Temperature
- Rain
- Anemometer
- Barometric pressure
- UV/solar radiation
- Humidity
- Air quality
- Camera (maybe)

Components:

- Microcontroller
- Power supply

Equipment:

- Oscilloscope
- Soldering station
- Breadboard

### 5 General Discussion

Project has got potential, there is the possibility of completing all of the main objectives early so that additional functionality can be added in the spare time. Not really any special hardware or software components required apart from the virtual Linux box.

## 6 Conclusions

6.1 Everyone has to research different areas before the next meeting

## 7 Actions for Next Meeting

#	Action	Assigned To	Deadline
1	Initial research into microcontrollers	Zack	08/10/19
2	Initial research into sensor modules	Tesfu & Mario	08/10/19
3	Initial research into API, Comms(TCP/IP), Sustainable materials	Callum	08/10/19
4	Initial research into Databases, Automation/Fault detection, Forecasting algorithms	Alexander	08/10/19