Minutes

Location: Shed
Date: Wednesday 31st January
Not In Attendance: N/A

Attendance: Dharius Robinson, Daniel Knox, Daniel Carl Beauchamp, Natalie Mclaren

What's Been Done since the Previous Meeting:
<Natalie M>:

- Added introduction for sections of the corpus
- Some API work

<Dharius>:

- Battery source code

<Daniel B>:

- Node.js, API and LoRaWan code

Topics discussed:

- **PCB:**
    - Dan Knox showed us the PCB design he has made for us, features include:
        - A slot for the adalogger (taking into account space to insert/eject SD card).
        - A space for the battery.
        - A temperature module
        - Space for a zigbee module
        - Pins for the sensor
        - A reset button
        - A module producing a unique ID for the PCB (would be useful if we chose to use multiple)
        - A switch to easily turn on/off the device

- **Research from residents near river:**
    - Natalie asks whether asking people living near rivers what they think about river rising would be useful:
        - Dan Knox suggests not to - it is too late. There is enough research online on Kent river risings to justify our idea

- **Network source code:**

    - Daniel B shows Dan Knox the network source code he has been working on.
    - When talking of device sending a ‘I’m still alive’ message, Dan Knox suggests we do this for every n number of packets.
    - Dan Knox suggests we add a sleep mode - if the device can’t send, try now and again to see if it can connect again.

- **Node.js code:**
    - Daniel B shows Dan Knox the Node.js source code he has been working on.
    - Dan Knox suggests we use Redis for last readings - he explains that Redis is designed for those types of things like last cached values.
    - Adding some security - Dan Knox suggests we do a check when writing data about a sensor to ensure that it is writing about a sensor it knows about. This stops people from putting in crappy data.

- **Processor memory:**
    - Dan Knox asks whether changing strings printed by ‘Serial.println’ to ‘progmem’ helped our memory situation on the processor
        - We confirm that it did however not everything has been changed - only the engineering menu options has been changed, but a lot of memory has been freed up.

- **API - InfluxDB error:**
    - Daniel B shows the InfluxDb error we have been getting when selecting a sensor ID due to it not being an aggregate function.
        - Dan Knox explains that sometimes InfluxDB implicitly adds things to queries, so us adding it again in the query might be causing the issue.

- **API - Authentication:**
    - Dan Knox suggests we put authentication on hold for now. He suggests we get everything else working, but does recommend we implement some API key system.

- **Targets:**
    - We explain to Dan that we aim to have all of our code completed by mid February.
        - Dan Knox believes this is a reasonable target, however we need to start some integration testing in that case.

- **Testing:**
    - Dharius and Natalie ask for an arm to mount the sensor on to carry out some testing.
        - Dan Knox has a tripod that we can use next week.

- **Databases:**
    - Dan Knox confirms that it is fine to use more than one place for data. InfluxDB is good for time series, but we can store data in MariaDB for example, as well as InfluxDB.
    - We can argue that we are doing this as InfluxDB is mainly best used for time series, but another database might be best for actual data.

- **Example question at viva:**
    - 'The Environmental Agency already tests for these things, why choose this idea?'
        - We could argue that the Environmental Agency does this on a larger scale - we can get these sensors to work on back gardens or segments of rivers, not just the whole river.

What's Being Done:

- Testing next week with the arm
- Changing all 'Serial.println' code lines to 'progmem' variables to save processor memory

Further Discussion: