**Troubleshooting Status Update**

**ET-Collar**

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**Project GitHub link:**

[**https://github.com/ETCollar/ET-Collar**](https://github.com/ETCollar/ET-Collar)

Under docs will be all the reports and proposal.

**Troubleshooting**

All of the bugs that were found in the project application and hardware technical connection errors and wiring were fixed, however others are still in progress.

Bugs and errors that were encountered:

* Sensor data Update to firebase

Inability to upload the legitimate readings to database from the device, as the device was not connecting the database and uploading the readings properly.

Solution: Code was updated and Pyrebase was integrated in the project. Pyrebase is a library to communicate with firebase with authentication.

* Non-functioning of map Activity

There was a little error in the program, the map activity lost the connection with google api to display position of the animal. To fix this issue, android debugger was used to examine each and every statement of the code to find errors. Moreover, the error was found, in fact when retrieving the data from the DB the values of longitude and latitude were getting inverted.

* GPS Wiring

When the GPS was received, some pins were attached with the sensor. By mistake those pins were removed. However those were necessary to connect the sensor to the PI. After looking up for solutions online and consulting Vlad from the prototype lab a solution was found. Moreover, pins from an old device were removed and used on the project and soldered on the PCB to connect the sensor.

* GPS data/ Google maps API

The GPS does not work properly indoor, probably due to the quality and cheap price of the sensor, which meant it might not have been possible to give a demonstration of the working google maps API inside the college.

After a consultation with the professor a solution was found: add a simulation mode.

Furthermore, as the simulation was being developed a problem was encountered: retrieving the fake data from the DB. Therefore, as a solution the fake data now is being saved under mac addresses ending with f, which can be added as a device and will offer readings and show the movement on the map.

From troubleshooting this issue, debugging skills and problem-solving skills were enhanced.

In fact, now it takes less time to find where the code is crashing as after using the debugger many times, the familiarity with it has increased.

Moreover, experience in the design and development of NO-SQL database, according to the data which is to be represented, was acquired.

* Some minor bugs which are still there, are as follows:
* App is not permitting multiple users adding multiple devices at a time, data gets swapped around in some cases. After multiples attempts, a crack is found to solve this problem.
* When the data is retrieved by the app, the new readings appear at the bottom of the list which makes it hard for the user to track his/her records. In order to fix it, we will reverse the display of list.

**Price Listing**

The total budget for the project is same as pervious report. PCB and sockets were provided by Humber Prototype Lab. All the required equipment for soldering and wiring was also available at Prototype to use free of any charges.

Raspberry pi ……………………… $ 99.00

TSL2561………………………………$ 09.99

LIS3DH ……………………………..$ 14.95

GP-20U7……………………………..$ 56.08

Sockets / /Soldering equipment provided by Humber Prototype lab.

Total……………………………………$180.02

Since no new component or service has been purchased our budget still remains same ($180.02).

Bright side is that despite those bugs project haven’t completely got off track instead hopefully all the remaining bugs will be fixed by next week.

**Progress**

The design of the case has been started, however more modifications are required.

Generally, the project is going on schedule. Moreover, the project is working and only some minor errors needs to be fixed. The fake data part of the project has been integrated successfully and is working. Errors in Google maps API has been fixed. Furthermore, the hardware part has been successfully completed and do not need any more modification.

As discussed in the troubleshooting sections some minor errors need to be fixed, but everything has been going on schedule and if everything keeps going as planned the project will be complete by next week or the week after.

**Individual Progress**

Most of the troubleshooting was done by both of the team member together.

More specifically, Gurpreet has fixed the positioning error in the Google maps API and worked on the DB and modified the DB structure to add the fake data to it.

Simarjeet has worked on the hardware and modified the python source code to upload the fake data to the DB. Then both of them worked on the application together to integrate the fake data in the android application.

**Upcoming goals**

* Fix the remaining error in the app (see troubleshooting section)
* Print the corelDraw for the case
* Update the final report