

liquid galaxy

P.E.R.A WATER DATA COLLECTION SYSTEM

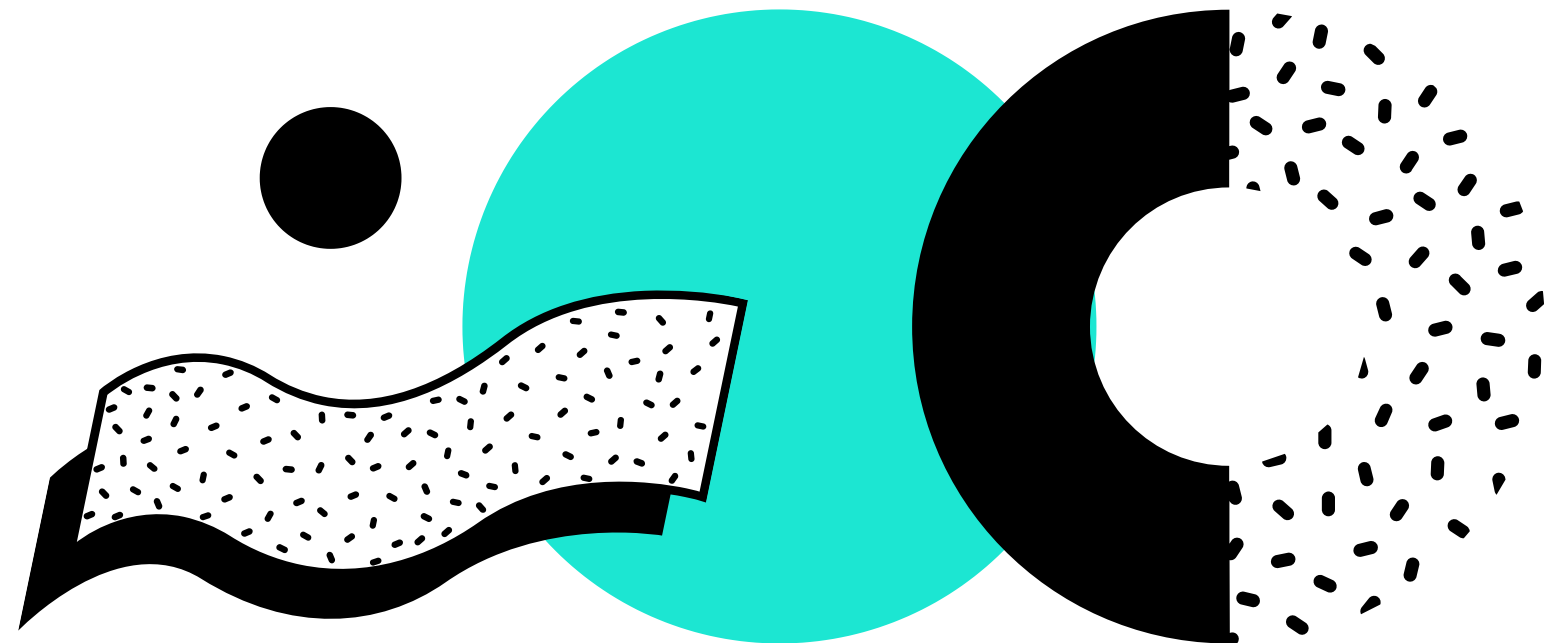
QAZI OMAIR AHMED
Student, GCI 2019



PROBLEM

A Data Collection System for the P.E.R.A. initiative consisting of hardware as well as the front end and back end software.





Problem 1

Various sensors required for the Water Rocket.

Problem 2

A Record Keeping System and an interactive software.

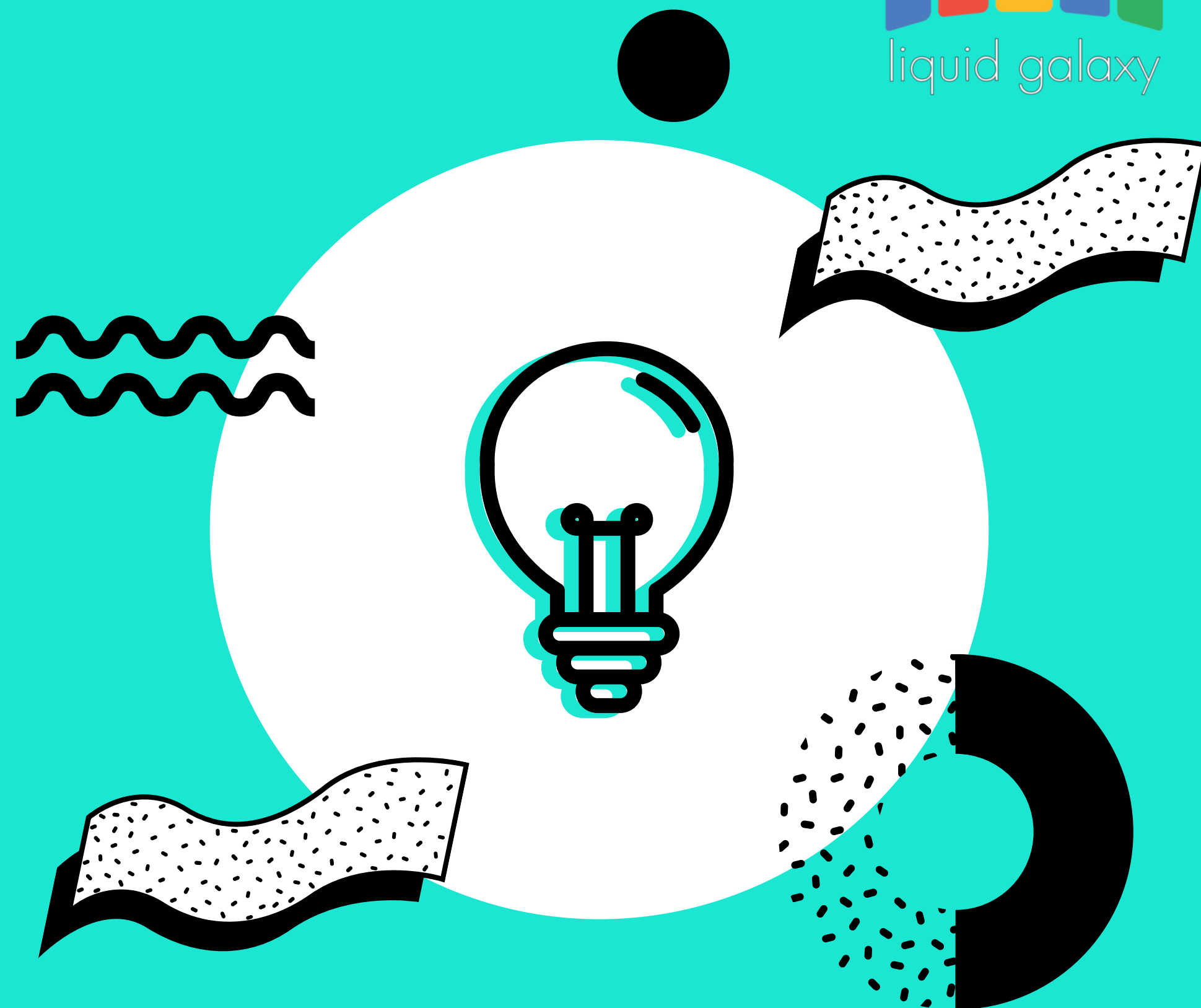
Problem 3

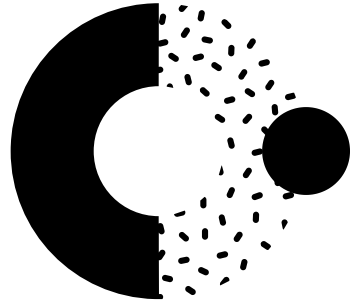
An estimate budget of the project.



P.E.R.A.

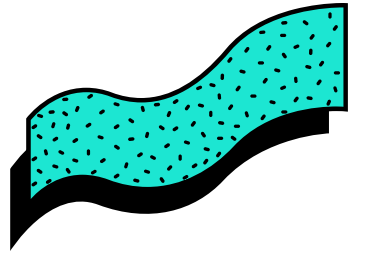
The objective is to deliver projects in a superior altitude than the drones can reach, on the different atmospheric layers and the space.





Solution 1

A list of all the sensors required along with the MCUs sending data to a database.



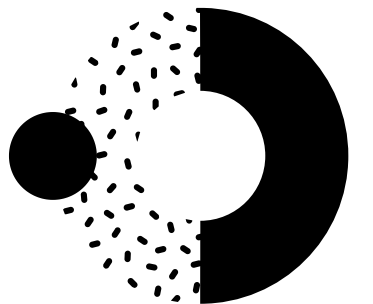
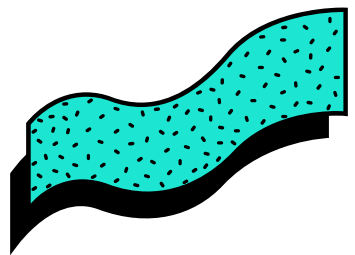
Solution 2

A Web Dashboard for front end and PHP server running at the back end.



Solution 3

An estimate bill of hardware as well as software required.





WATER ROCKET



Capppturing sea data and storing it in
a database every 2-3 seconds.



HARDWARE



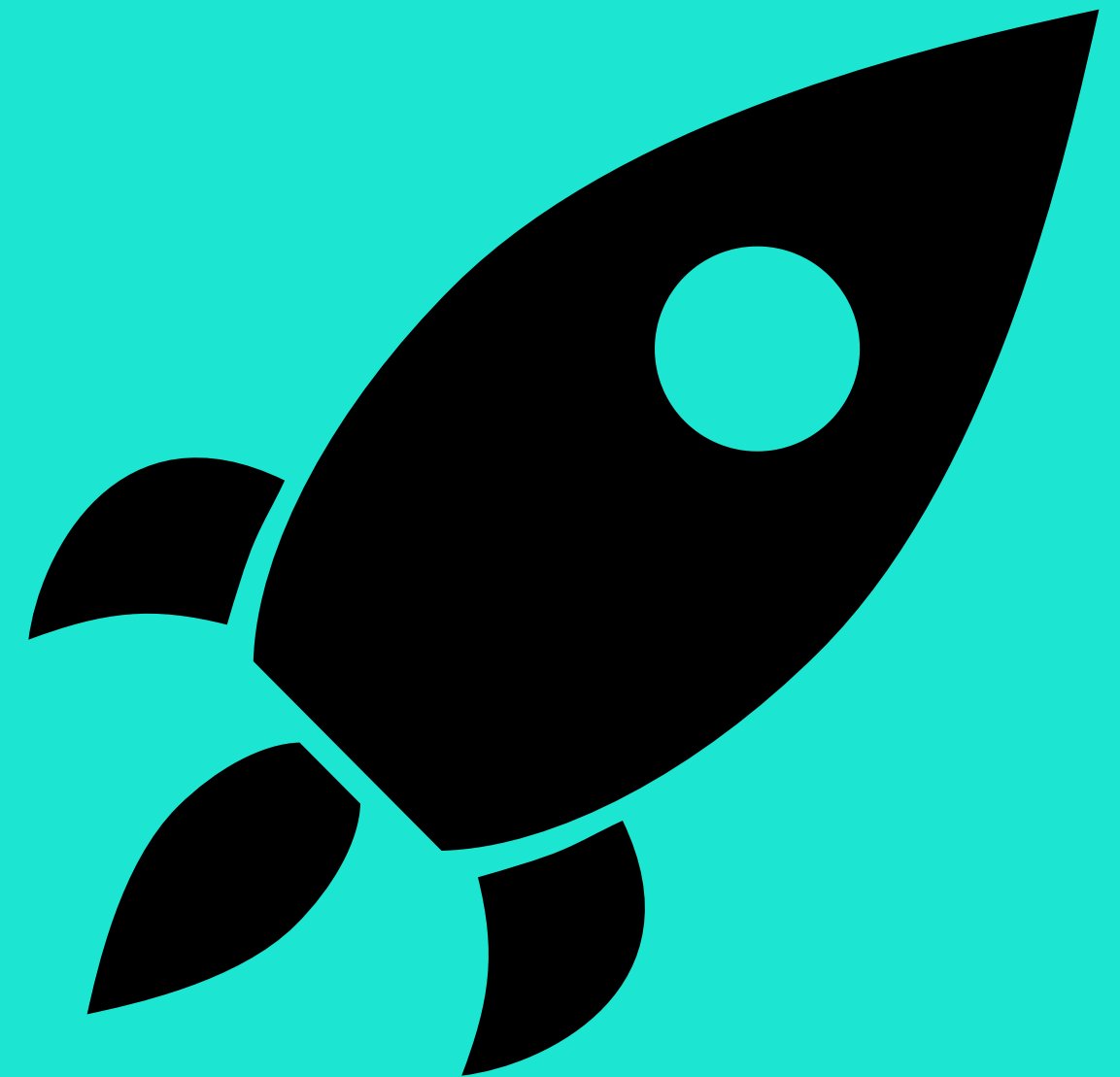
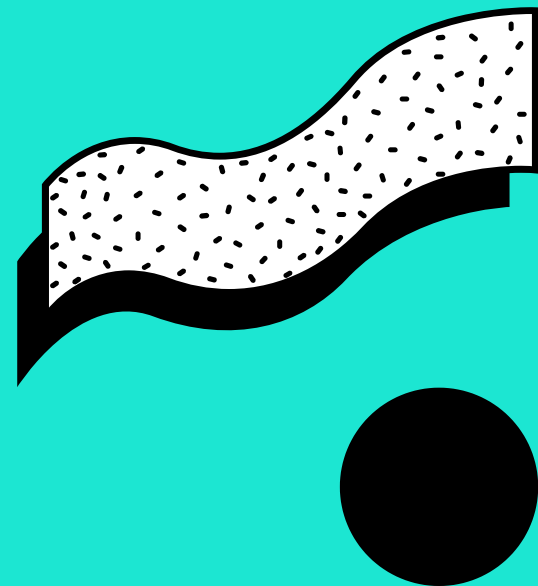
Rockets

Launching different ROVs to various seas.

ROV with Sensors

Kept at different locations for testing water samples.

Many sensors for recording and testing water samples.



Overall Hardware Budget

ROV Model - 30\$

Arduino Uno - 7\$

ESP8266 WiFi Module - 2\$

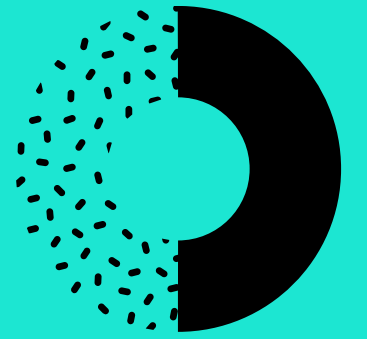
Temperature Sensors - 5\$

Humidity Sensor - 2\$

Pressure Sensor - 7\$

pH and TDS Sensors - 25\$

TOTAL ESTIMATE - 78\$



SOFTWARE



Search		Sea	Longitude	Latitude	Surface Temperature	Air Temperature	Relative Humidity	Sea Level Pressure	pH
		Bay of Bengal	137E	9N	269K	203K	92%	102680Pa	11
		Bay of Bengal	150E	170N	204K	248K	97%	102394Pa	0
		Bay of Bengal	27E	167N	283K	253K	89%	101069Pa	7
		Bay of Bengal	33E	15N	298K	216K	85%	101470Pa	4
		Bay of Bengal	77E	13N	262K	220K	91%	102537Pa	3

Dashboard

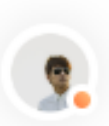
An interacting front end web based dashboard for processing recorded data.

Arduino

Recording sensor data and storing it in a database.



DASHBOARD



DASHBOARD

Dashboard

Manage Account >

DATA LOGS

Members

Rockets

Water Data Logs

Projects >

Welcome back omair (check1) :)

Members

4565

+717 in 2020



Rockets

231

in 54 Locations



Data Monitoring

24

Active rockets



Ongoing Projects

6

3 Completed | 2020

Todo

☐ Google Code-in 2020

☒ Liquid Galaxy Controller

☐ OSC tasks

☒ Arduino WiFi Controller

Write new item and hit 'Enter'...

Overall Software Budget

Hosting on Google Cloud
Platform - 300\$

Domain - 20\$

TOTAL ESTIMATE - 320\$





THANK YOU :)



PRESENTED BY:

QAZI OMAIR AHMED

Student, GCI 2019



liquid galaxy