Shrimp Farm Monitoring System for Bangladesh based on IOT

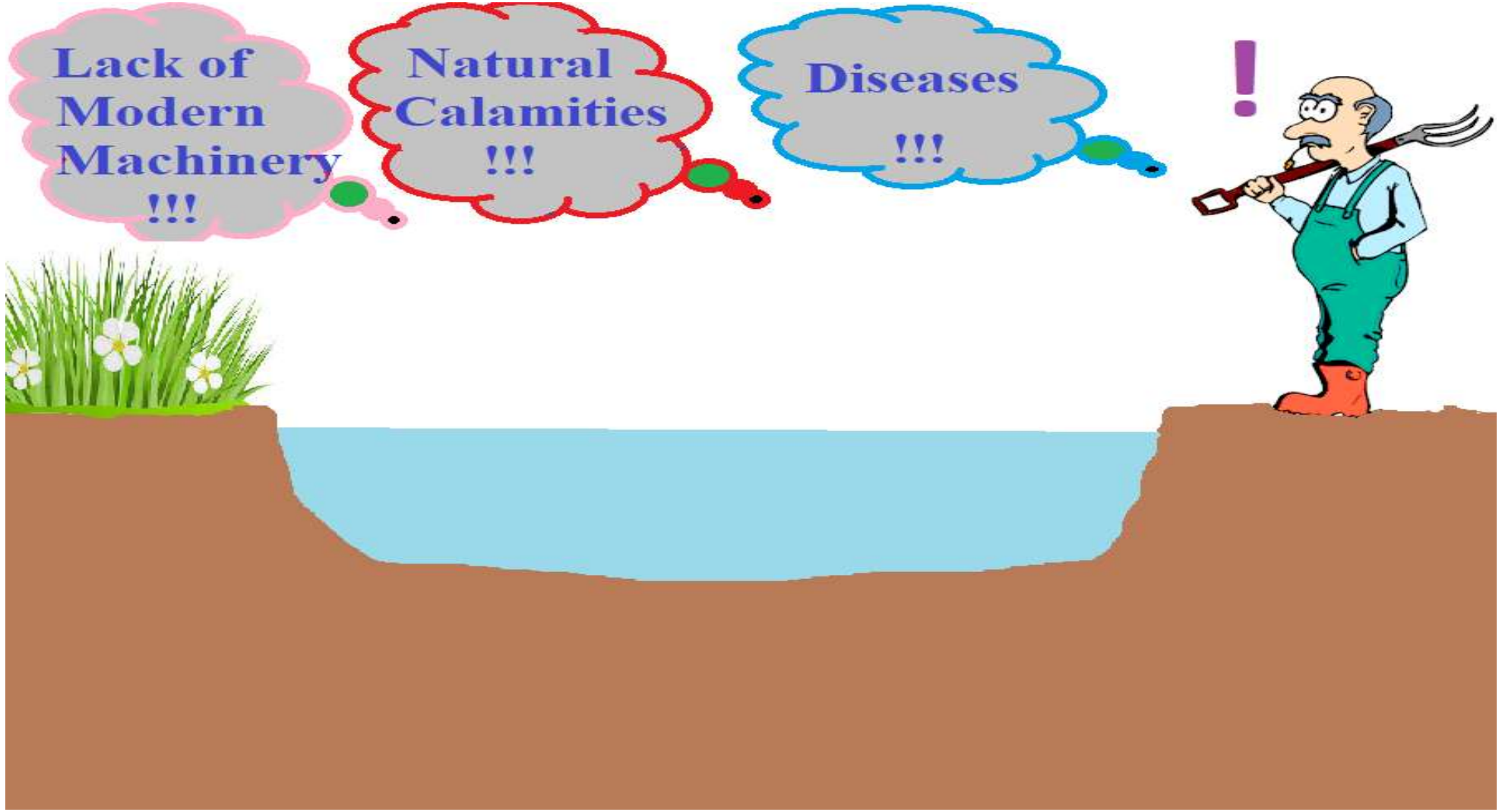
Presented By

Mohd. Rasadin

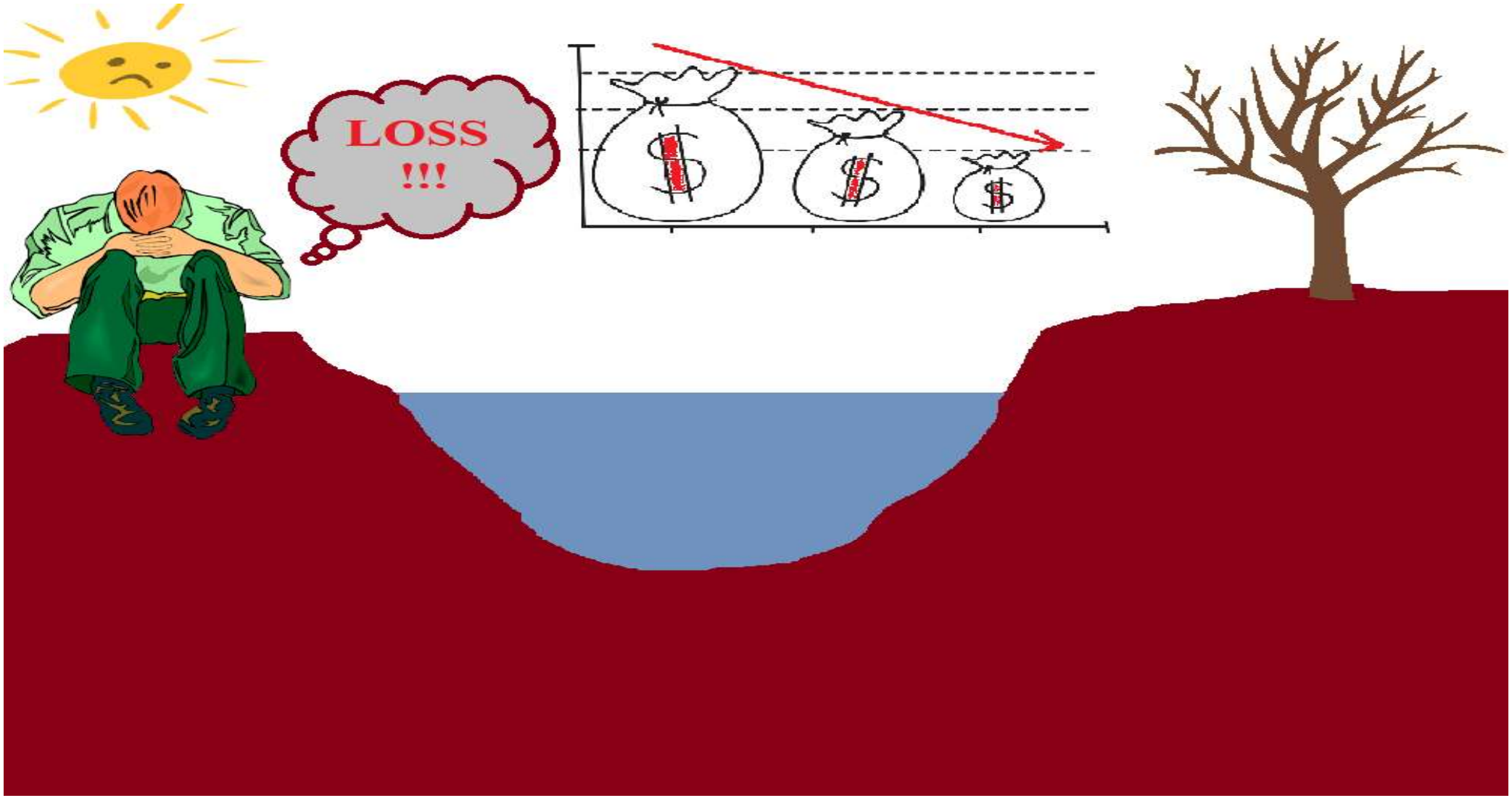
Overview

- ❑ Background Study
- ❑ Consequence
- ❑ Motivation
- ❑ Objective
- ❑ Our Process
- ❑ Design & Methodology
- ❑ Conclusion
- ❑ Future Work

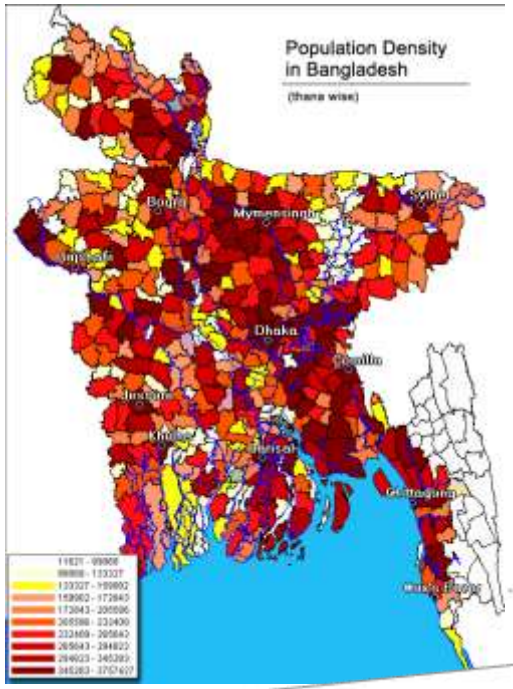
Background Study

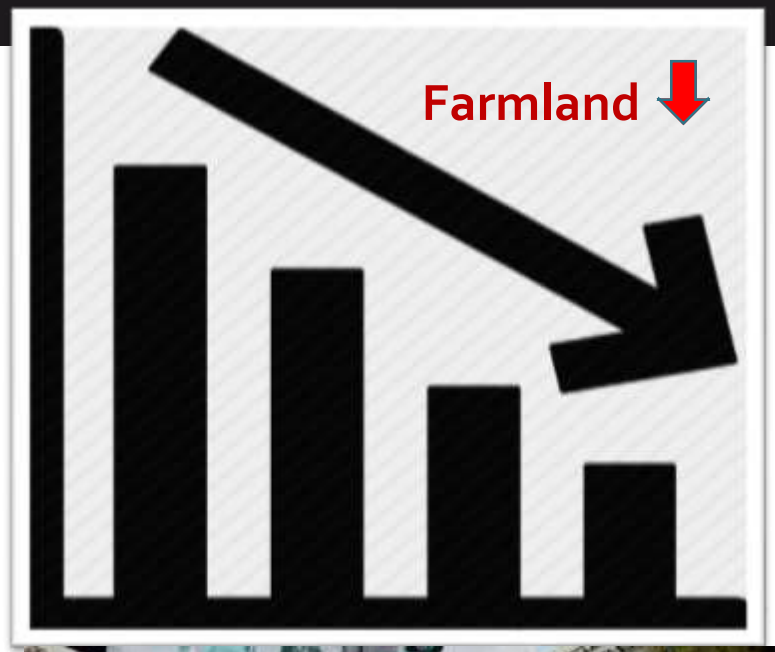


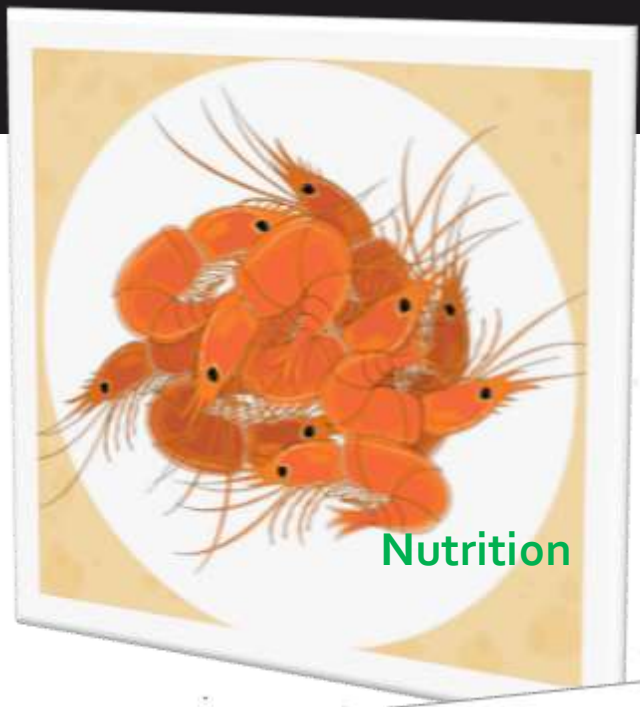
Consequence



Motivation


Population Density
in Bangladesh
(thana wise)
Dhaka


Farmland


Nutrition

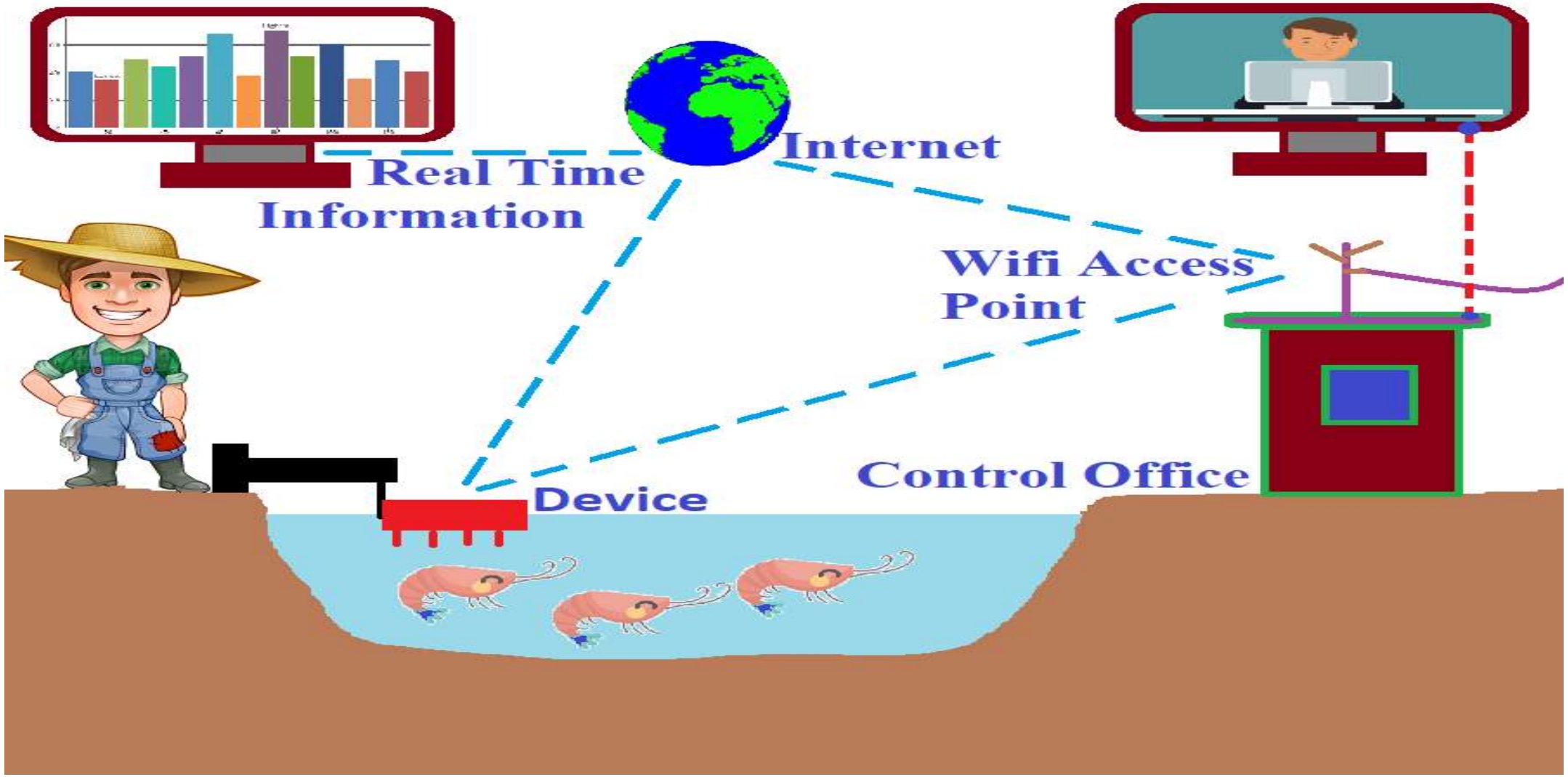

Poverty


Employment
Shrimp Farming

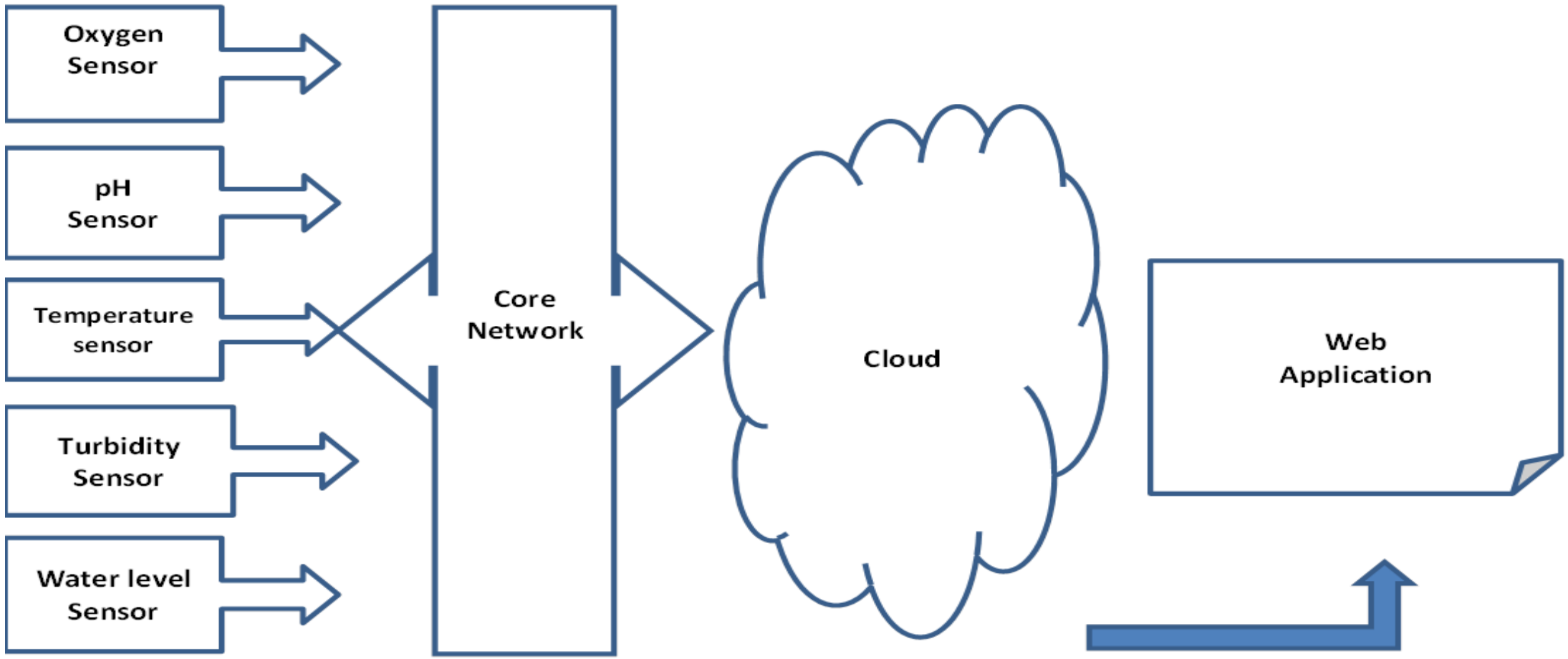
Objective

- To construct a real time IOT based monitoring device for shrimp farm in Bangladesh.
- To develop a web application to monitor the farm remotely.

Our Process


Real Time
Information
Internet
Wifi Access
Point
Device
Control Office

Our Process (Cont.)



Design & Methodology

Hardware

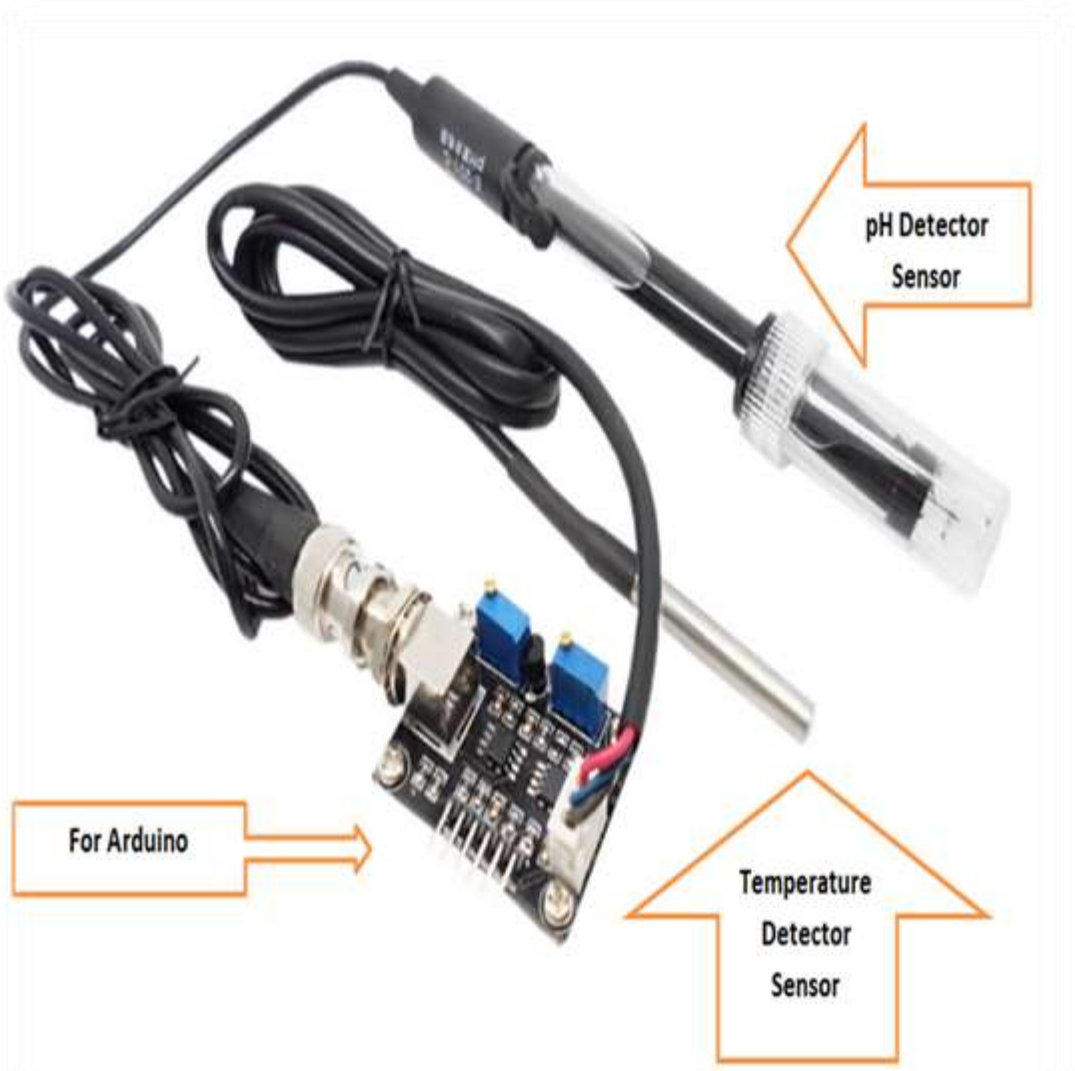
1. Arduino Leonardo
2. Yún Shield
3. Lambda sensor (oxygen sensor)
4. E-201-C Probe (pH sensor)
5. DS18B20 temperature sensor
6. Turbidity Sensor
6. Water Level Sensor
7. DS1307 I2C Real Time Clock Module

Software

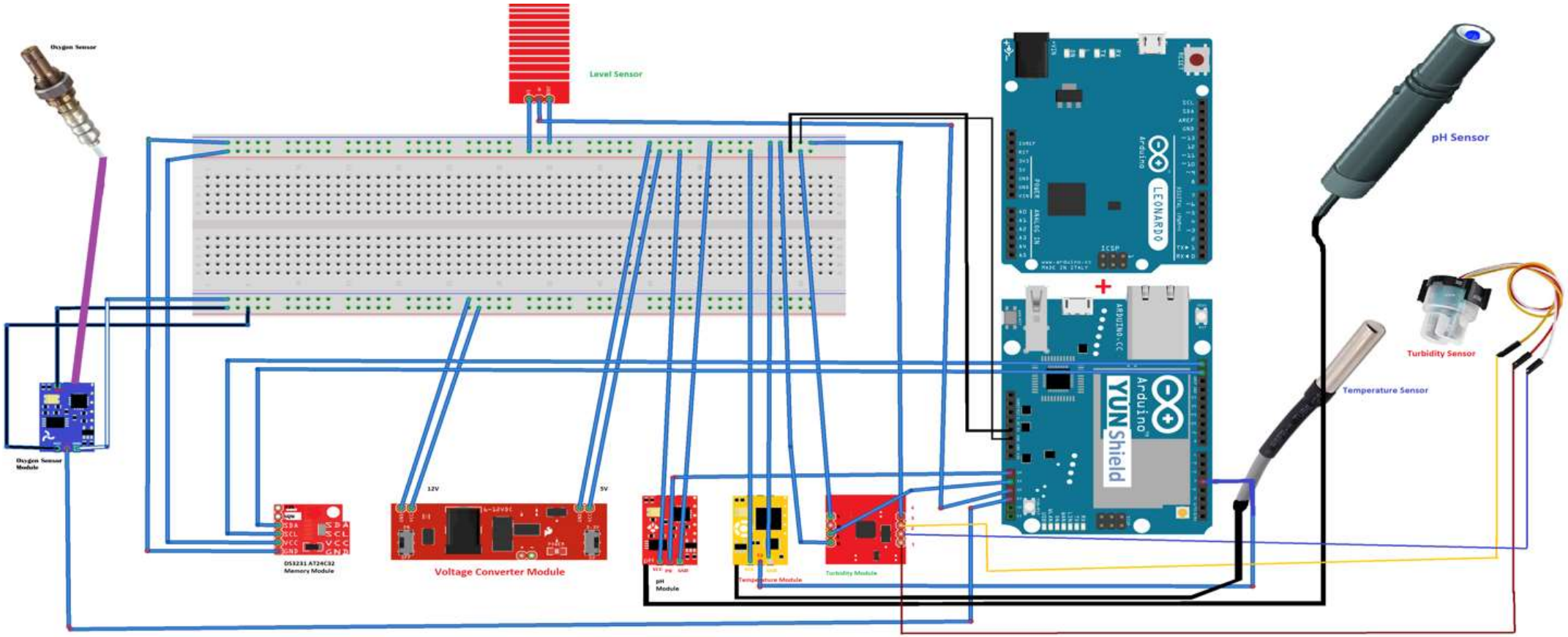
1. Arduino IDE
2. CLOUD
3. Our developed web application using html, css, php, JavaScript and MySQL

Lambda Sensor

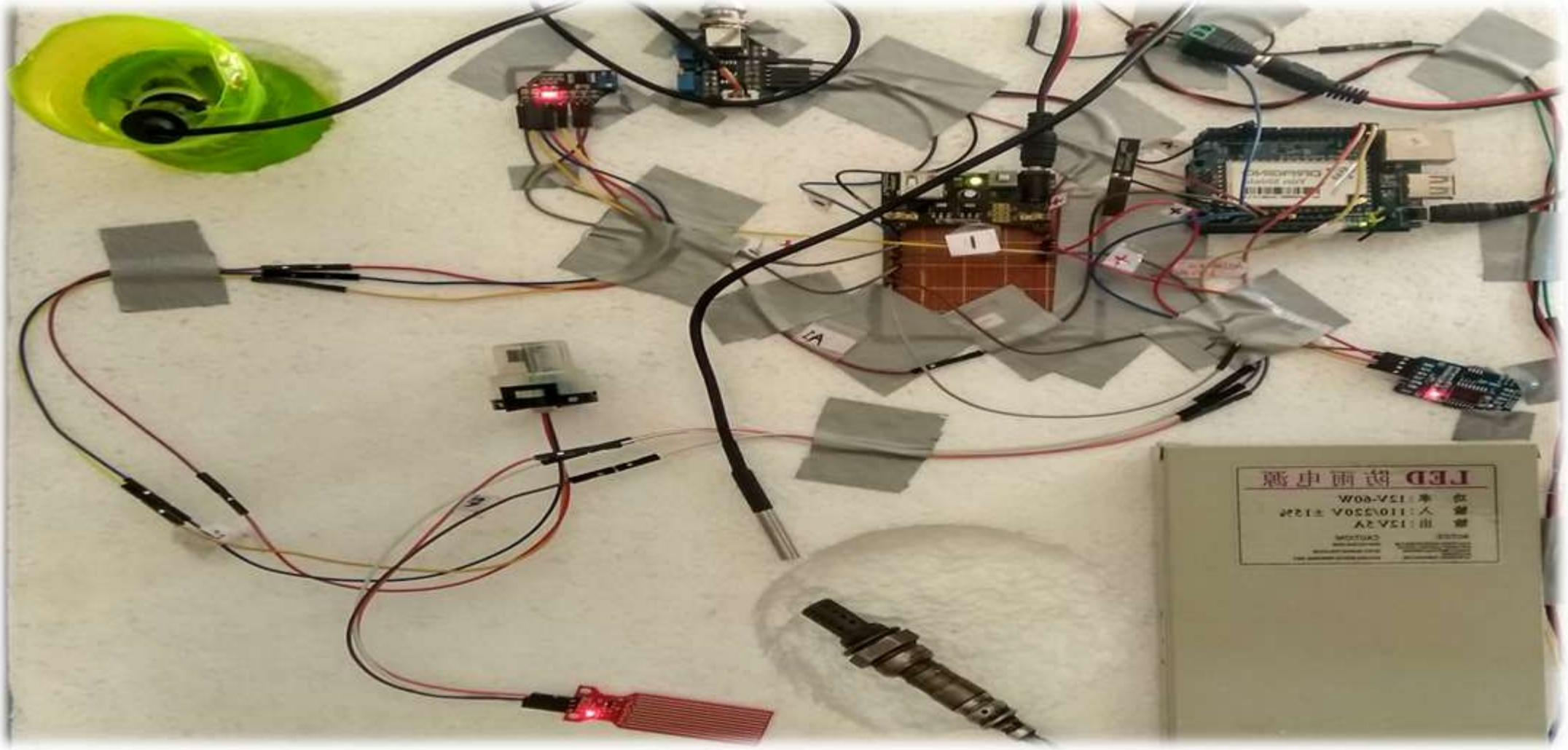
Others sensor



Circuit Diagram



Complete Device

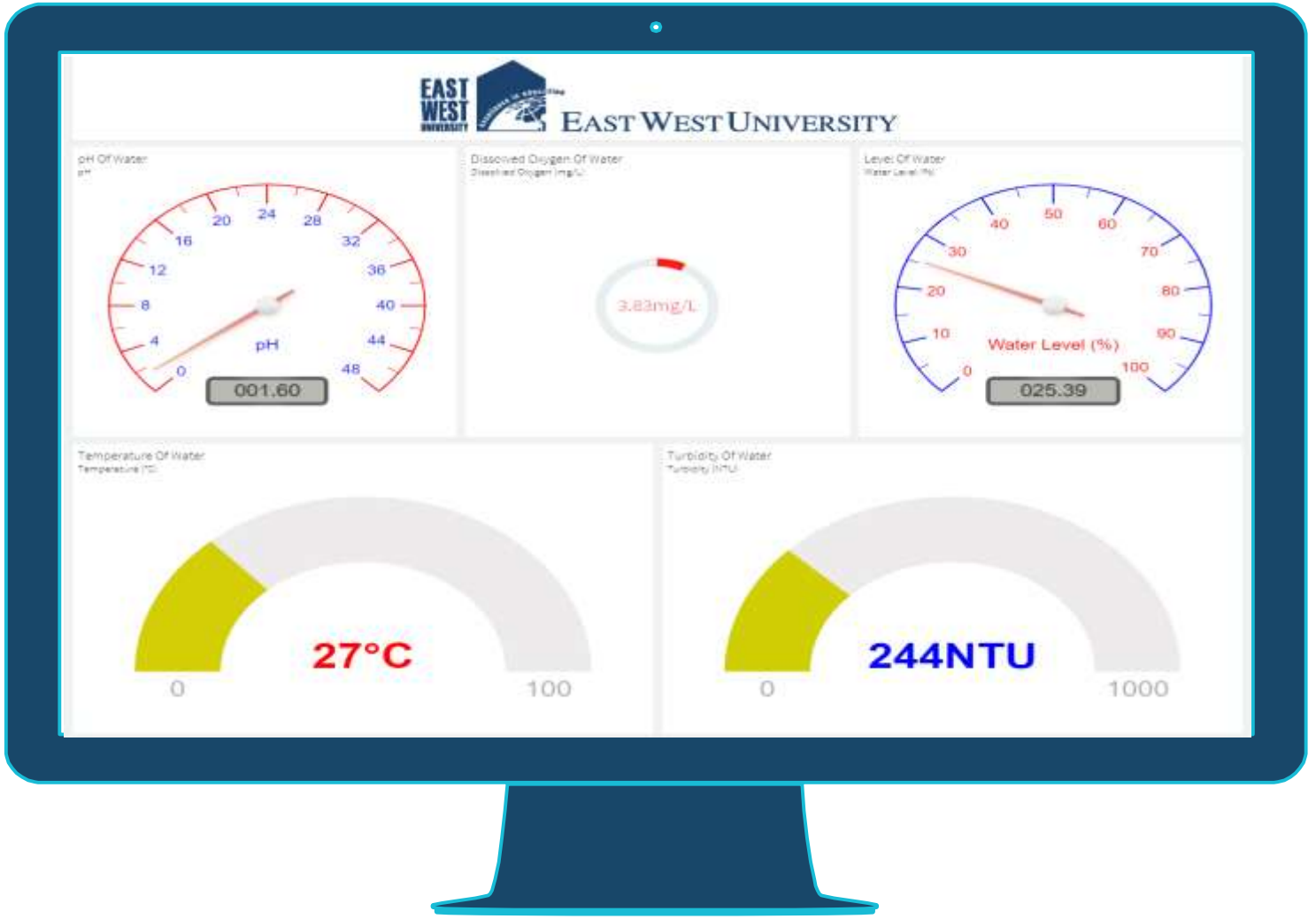


Web Application

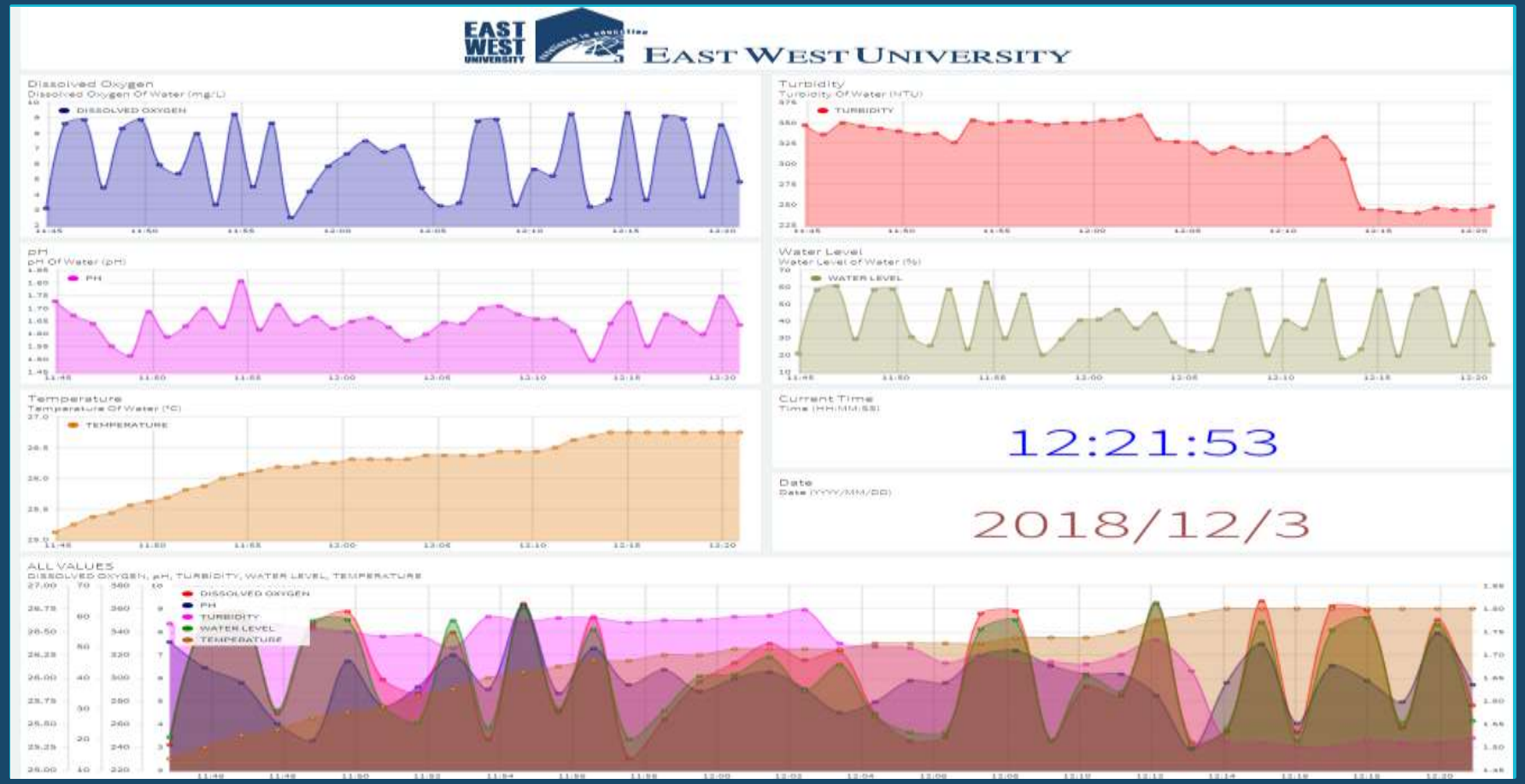
- Our developed web application

Live Monitoring via Web

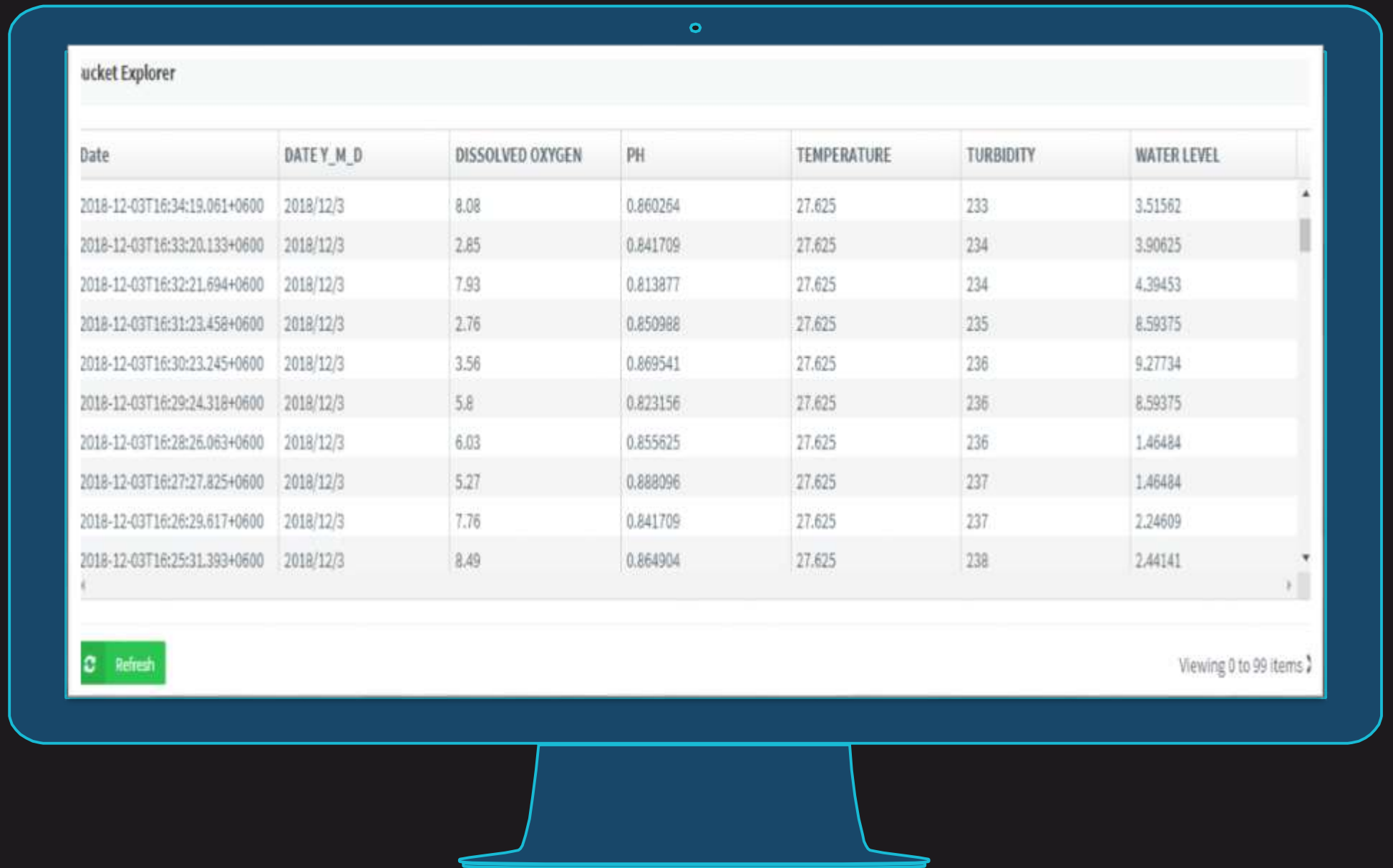
Now live monitoring is possible remotely



Graphical Representation



Live data Bucket



ucket Explorer

Date	DATE Y_M_D	DISSOLVED OXYGEN	PH	TEMPERATURE	TURBIDITY	WATER LEVEL
2018-12-03T16:34:19.061+0600	2018/12/3	8.08	0.860264	27.625	233	3.51562
2018-12-03T16:33:20.133+0600	2018/12/3	2.85	0.841709	27.625	234	3.90625
2018-12-03T16:32:21.694+0600	2018/12/3	7.93	0.813877	27.625	234	4.39453
2018-12-03T16:31:23.458+0600	2018/12/3	2.76	0.850988	27.625	235	8.59375
2018-12-03T16:30:23.245+0600	2018/12/3	3.56	0.869541	27.625	236	9.27734
2018-12-03T16:29:24.318+0600	2018/12/3	5.8	0.823156	27.625	236	8.59375
2018-12-03T16:28:26.063+0600	2018/12/3	6.03	0.855625	27.625	236	1.46484
2018-12-03T16:27:27.825+0600	2018/12/3	5.27	0.888096	27.625	237	1.46484
2018-12-03T16:26:29.617+0600	2018/12/3	7.76	0.841709	27.625	237	2.24609
2018-12-03T16:25:31.393+0600	2018/12/3	8.49	0.864904	27.625	238	2.44141

Refresh

Viewing 0 to 99 items

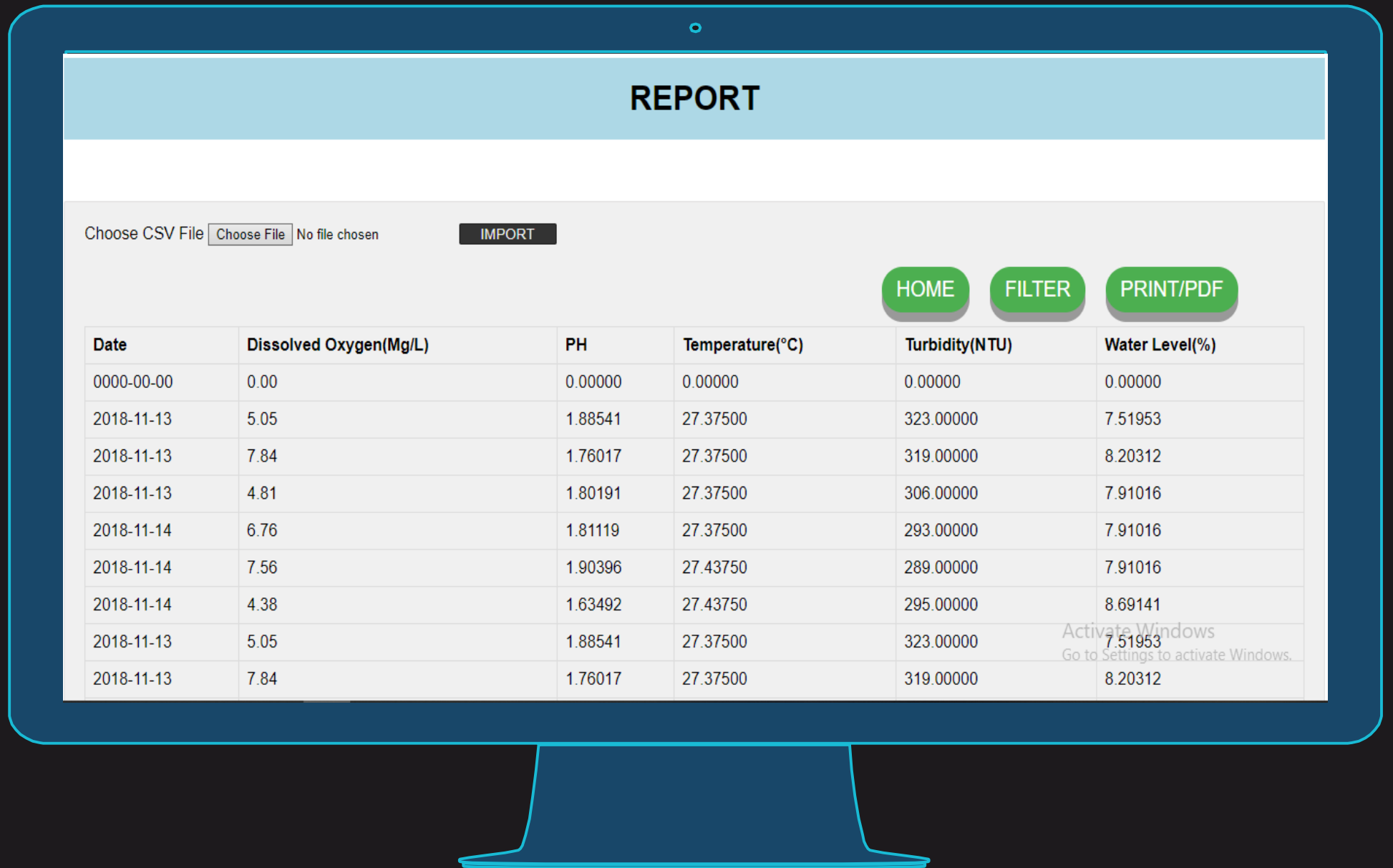
Question

?

Data Storage ?
Data Filtering ?
Report Generate ?

Yes, sir

User Data Storage



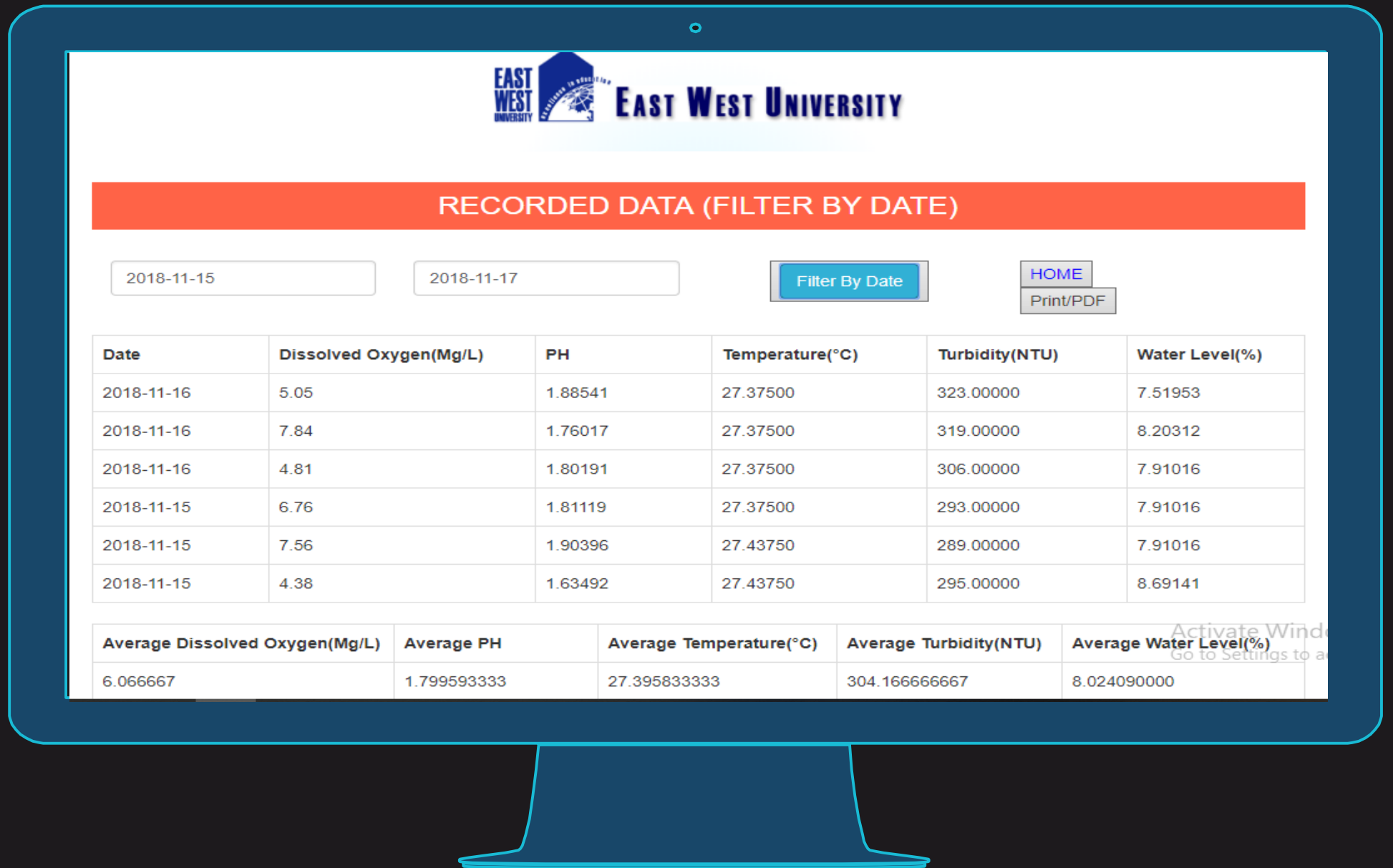
REPORT

Choose CSV File Choose File No file chosen IMPORT

HOME FILTER PRINT/PDF

Date	Dissolved Oxygen(Mg/L)	PH	Temperature(°C)	Turbidity(NTU)	Water Level(%)
0000-00-00	0.00	0.00000	0.00000	0.00000	0.00000
2018-11-13	5.05	1.88541	27.37500	323.00000	7.51953
2018-11-13	7.84	1.76017	27.37500	319.00000	8.20312
2018-11-13	4.81	1.80191	27.37500	306.00000	7.91016
2018-11-14	6.76	1.81119	27.37500	293.00000	7.91016
2018-11-14	7.56	1.90396	27.43750	289.00000	7.91016
2018-11-14	4.38	1.63492	27.43750	295.00000	8.69141
2018-11-13	5.05	1.88541	27.37500	323.00000	7.51953
2018-11-13	7.84	1.76017	27.37500	319.00000	8.20312

Date wise Data Filtering



EAST WEST UNIVERSITY

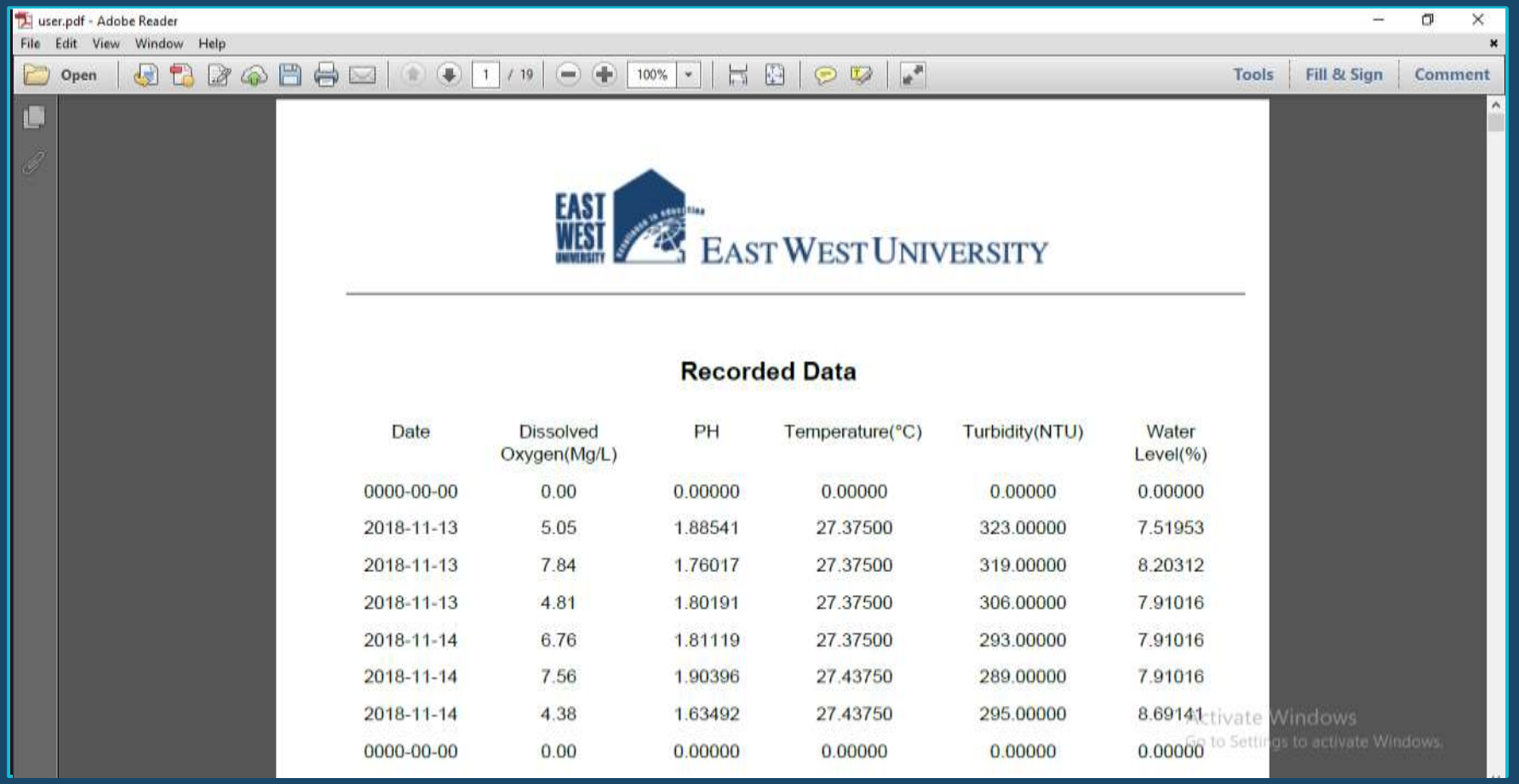
RECORDED DATA (FILTER BY DATE)

2018-11-15 2018-11-17 Filter By Date HOME Print/PDF

Date	Dissolved Oxygen(Mg/L)	PH	Temperature(°C)	Turbidity(NTU)	Water Level(%)
2018-11-16	5.05	1.88541	27.37500	323.00000	7.51953
2018-11-16	7.84	1.76017	27.37500	319.00000	8.20312
2018-11-16	4.81	1.80191	27.37500	306.00000	7.91016
2018-11-15	6.76	1.81119	27.37500	293.00000	7.91016
2018-11-15	7.56	1.90396	27.43750	289.00000	7.91016
2018-11-15	4.38	1.63492	27.43750	295.00000	8.69141

Average Dissolved Oxygen(Mg/L)	Average PH	Average Temperature(°C)	Average Turbidity(NTU)	Average Water Level(%)
6.066667	1.799593333	27.395833333	304.166666667	8.024090000

Generate User Report



Conclusion

- **To resolve Bangladeshi shrimp farmers troubles and difficulties during the time of farming.**
- **To do the monitoring system real time and remotely.**
- **To maximize the shrimp production as well as country's foreign exchange earnings.**

Future Work

- **System can be improved by using more sensor to measure the quality parameters of water more accurately.**
- **Incorporate alert system by sending sms to the users when the quality of water will be deviated from its minimum standard.**
- **Add some prediction mechanism in the system.**

Thank you.