



Water Pollution Monitoring Boat Based on IOT (NODE MCU)

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ABSTRACT:

The quality of drinking water plays a crucial role in the health of human beings and animals. Lakes and reservoirs, canals are the major sources of drinking water. water quality monitoring of these bodies requires less man effort as the operator will control the boat with all the sensors and check the entire lake using mobile application. So, we here design a solution for easy water quality checking of vast water bodies with ease. This system used to measure the PH and turbidity level of water samples and further maintain the water clean. This project is based on IOT (internet of things) which will be controlled by the NODE MCU using mobile application (BLYNK app) accordingly, a propeller system to provide the forward propulsion and servo motor arrangement to control the boat by moving left or right by means of mobile using joystick. NODE MCU requires some internet access, so we are using wi-fi module which will operate DC motor in which it rotates the propeller through a flexible bearing and shaft. Now we have used the steer to control as per controller instructions. Additionally, we have two sensors, namely PH and turbidity sensors which will detect the presence of suspended particles and PH range of the water. The values are viewed on our mobile through Blynk application through mobile hotspot. Thus, the water pollution monitoring boat using IOT can be used for water quality monitoring on lakes and rivers with ease.

1. COMPONENTS USED:

1. ESP8266 wi-fi module.
2. PH sensor.
3. Turbidity sensor.
4. DC Motor.
5. Servo motor.
6. L298N Motor driver.
7. Battery.
8. Propeller.
9. 3D Printer.
10. Extruder

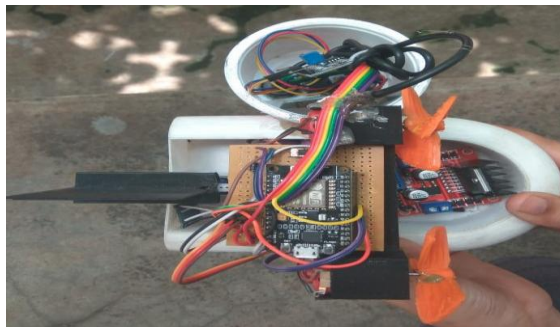
2. WORKING:

In this project, we are using two sensors namely, turbidity sensor and pH sensor which are used to collect the information from the required water. These sensors are connected to the NODE MCU ESP8266N. The water parameters data are sensed by the sensors and processed data is sent to the Mobile application through W-FI MODULE. The output is viewed on Mobile phone through the Blynk application, through which information about water parameters is displayed. The sensor values are collected from the different solutions and conclude that safe for drinking water by means of PH range and turbidity values. This IOT system provides wi-fi hotspot to collect the information about the level of liquid for the users by viewing the data in their mobile and prevent it from the overflow.

3.) PROJECT PHOTOS:

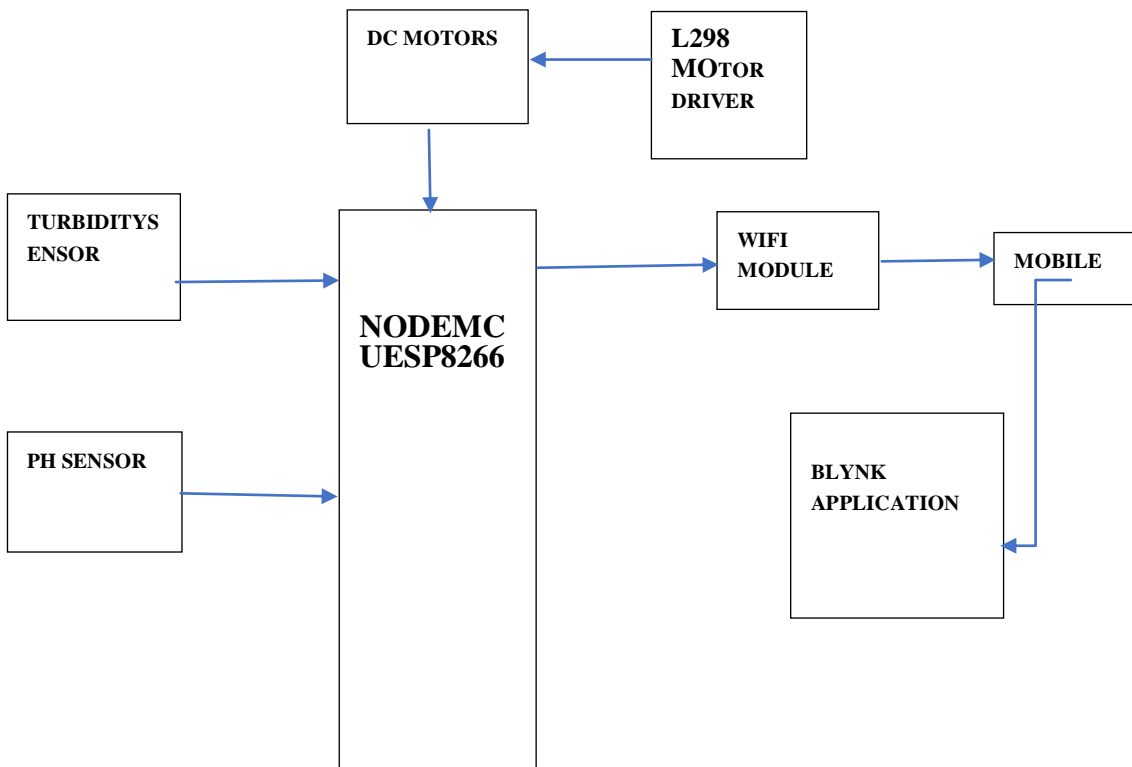


FRONT VIEW OF OUR MODEL



TOP VIEW OF OUR MODEL

4.) BLOCK DIAGRAM:



5) RESULTS:

The PH and Turbidity values of given water samples are obtained by viewing on our Mobile application (BLYNK APP)-

Sr no	Water samples	PH	Turbidity (in NTU)
1	Drinking water	7.819(6.5-8.5)	0.459
2	Bore water	7.665(6.5-8.5)	0.751
3	Rain water	6.211	17.1
4	Boiled water	7.726	0.277
5	Washing water	4.398	0.749

6) CONCLUSION AND FUTURE SCOPE:

Water quality monitoring has become necessary for environment protection. This presents a detailed survey on the tools and techniques employed in existing water quality monitoring systems. Also, a low cost, less complex water quality monitoring system is proposed. The implementation enables sensor to provide online data to consumers. This can be improved by incorporating algorithms for anomaly detections in water quality and improve further by increasing the parameters by Addition of multiple sensors.

FUTURE SCOPE:




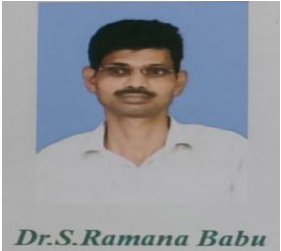
- In future we use IOT concept in this project
- Detecting the more parameters for most secure purpose
- Increase the parameters by addition of multiple sensors
- By interfacing relay, we controls the supply of water.

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ANNEXURES:

PROJECT DONE BY:

		
<p>ROLLNO - 317132920070</p>	<p>ROLLNO - 317132920005</p>	<p>ROLLNO - 317132920041</p>
		
<p>ROLLNO - 317132920059</p>	<p>ROLLNO - 317132920024</p>	<p>Dr S Ramana Babu</p>

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