WATER LEVEL MONITORING WITH THE HELP OF IoT

RAJDEEP SHAW

Components used:-

ESP8266 NodeMCU

Ultrasonic sensor

Breadboard

Jumper Wires

LCD display and I2C module

Relay Module

Motor supply (as pump)

Software used:-

Blynk App

Arduino IDE (for programming hardware)

Other Devices used:-

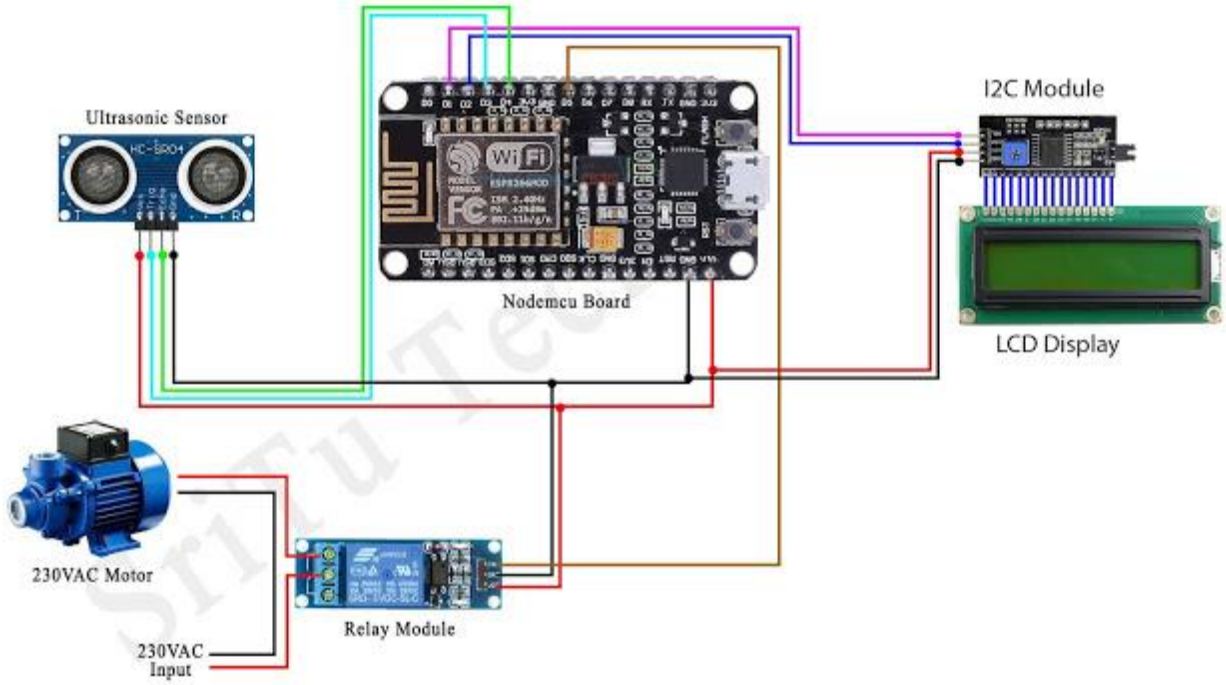
A mobile phone

Connectivity:-

Wi-Fi

Internet

Experimentation:-



NodeMCU is first connected to an ultrasonic sensor (HC-SR04)

Ultrasonic sensor has the ability to detect the level of water in tank by measuring the distance of a target object by emitting ultrasonic sound waves, and converts the reflected sound into an electrical signal. It calculates the time spent in sending and receiving ultrasonic rays over the water surface.

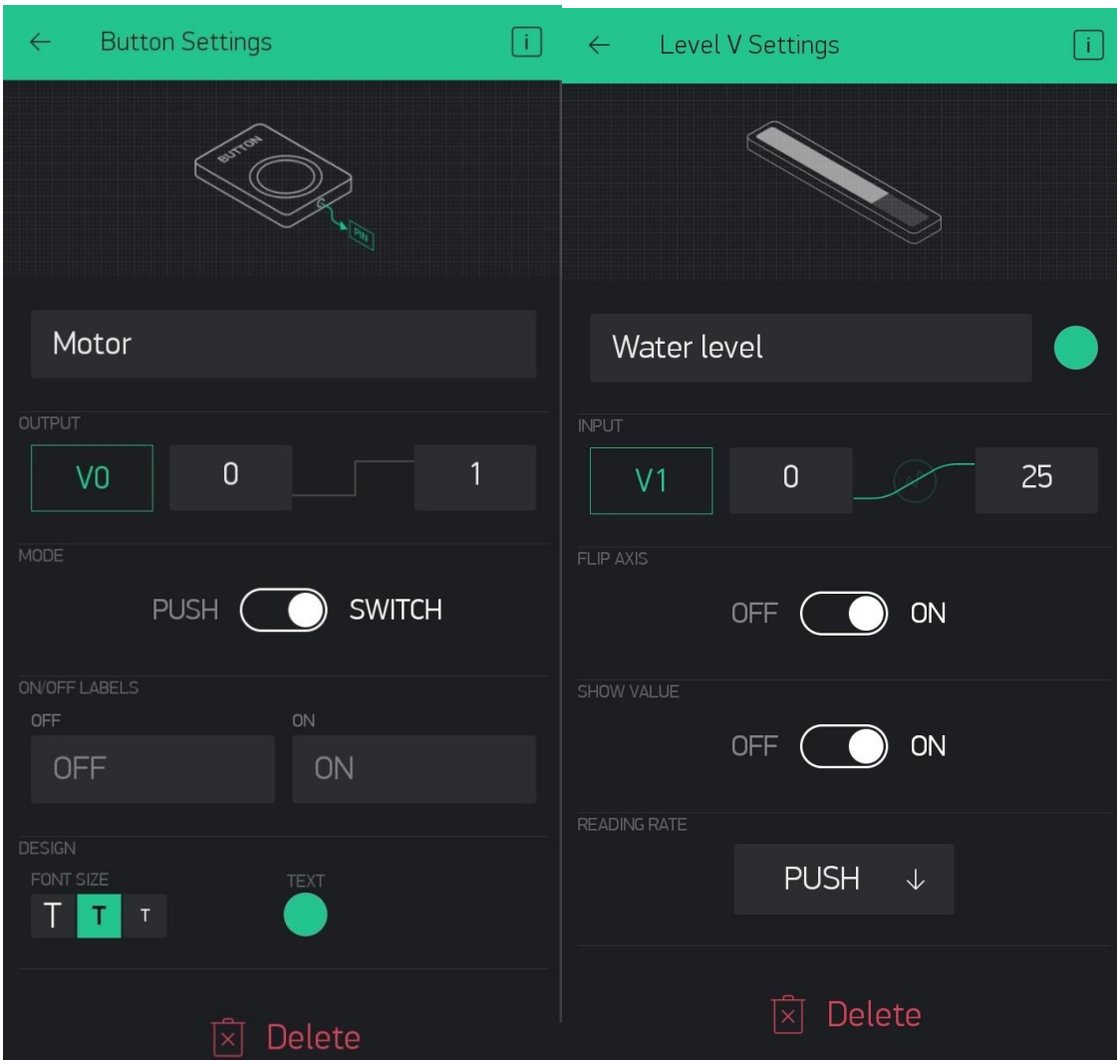
Data is recorded in NodeMCU which can further send the received data to ones' mobile devices with the help of internet.

AC motor supply (commonly known as 'water pump' in household) is the main power source. Motor supplies power to the NodeMCU through a relay module.

Relay module is an electrically operated switch that can be turned on or off deciding to let current flow through or not. Thus the NodeMCU module and the sensors get a voltage of about 3.3V at its supply.

LCD module can live display the water level in tank. An I2C module has been acting as a communication interface between NodeMCU and LCD module.

On the other hand, the mobile application (the Blynk app) has been designed in a mobile device which would provide one the visualization of water level data received in NodeMCU over internet.



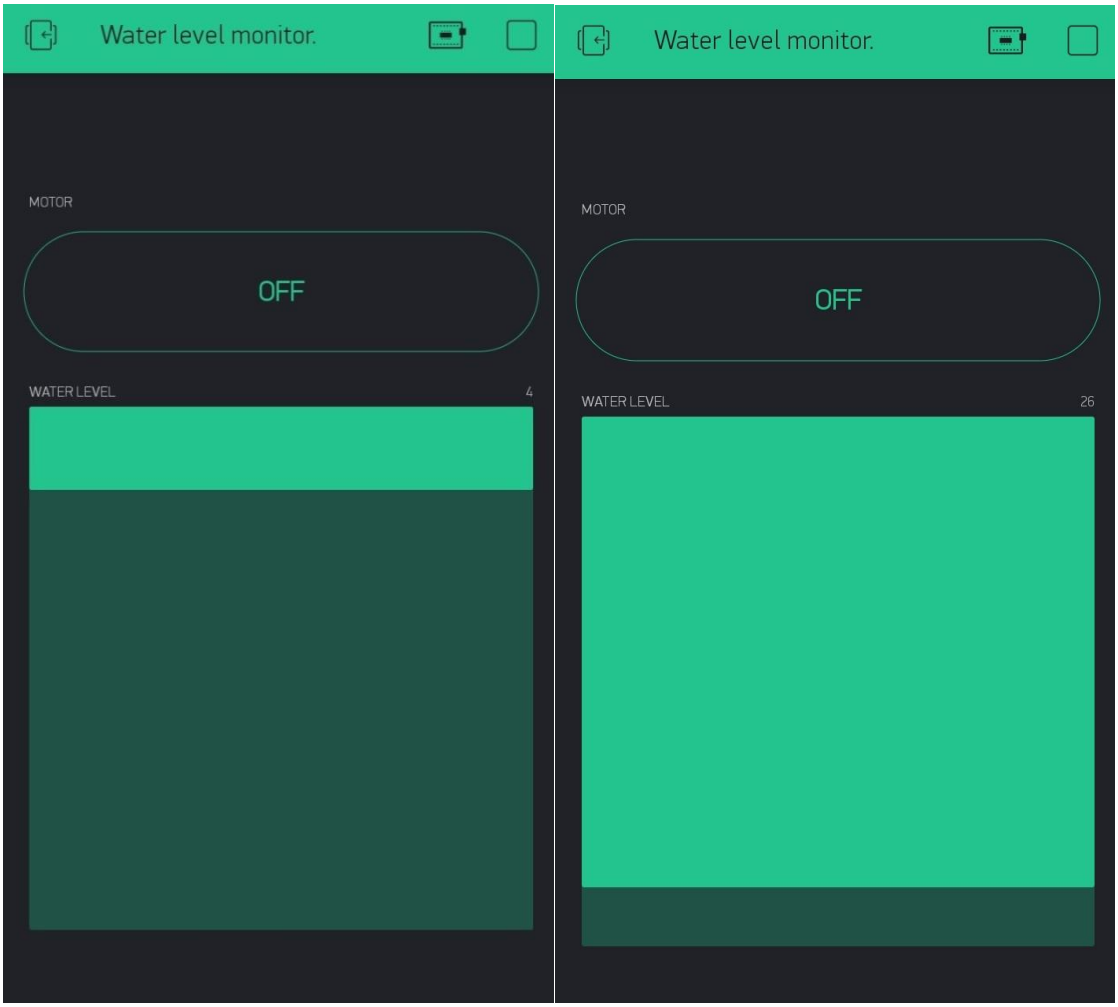
As the final step, the NodeMCU is programmed in the Arduino IDE software for proper functioning of each and every component and work as an advanced home-made Smart tank water monitoring system which can be easily monitored over Blynk app.

*Libraries included in the Arduino IDE – Blynk, I2C and Wifi Library

P.T.O

Conclusion:-

This is how a user can monitor the water level in their tanks and can control the desired water level from anywhere across the globe with the help of internet. This simple IoT application can save and conserve natural resource like water from massive wastage and thus saving lives.



This project has been constructed as the major project stated as 'Design a Water level IoT system which should give live feeds of the current water level in the tank to the application on a smartphone..' as assigned by **Smartknower in an IoT internship program.