ELECTRONICALLY CONTROLLED FLOOD SYSTEM

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Abstract- *During the earlier decade, water needs have extended unpredictably in India. Growing solicitation of water supply has transformed into a vital test for the world. Wasteful utilization of water, climatic changes and Urbanization has moreover depleted the advantage. Conservation and the officials of the benefit must be given most outrageous hugeness. In this paper, we present an IoT plan for water watching and control approach which supports web set up together data aggregation concerning consistent bases. The structure keeps an eye on new troubles in the water region – stream rate assessing and the necessity for an examination of the supply of water in order to check water wastage and empower its security. We similarly measure the idea of water scattered to every family by sending pH and conductivity sensors. The customary water metering structures require infrequent human intercession for help making it severely planned and consistently most disastrous. For shortcoming of the ebb and flow models for an inescapable utilization of remote systems for sharp quality checking and pass on data remotely.*

1. INTRODUCTION

Water is an enormous asset for the majority of the livings on the earth. In that, two or three people are not getting adequate extent of water in light of unequal course. We can utilize this method with the target that everybody gets the equivalent extent of water. It is in like way used to keep up a key detachment from the wastage of water during the development time length. In the past framework, the specialist will go to that spot and open the valve for a specific range, of course the worker will go to a near spot and close the valve, it is practice in worthlessness. The proposed system is totally automated. Here human work and time are saved. To ensure the secured supply of water the quantity should be watched persistently thus new approach IOT (Web of Things) based water quantity checking has been proposed. In this undertaking, we will complete the structure of IOT base water quantity watching system that screens the idea of water persistently. This structure contains a couple of sensors which measure the water quantity parameter. The consistent seeing of water resources information will benefit the water resources the board office and the all-inclusive community. The basic thought of continuous IOT based water resources information structure is to give expansive and exact information. The system is made

through de scribing some express water resource parameters by then, Water level and stream parameter are portrayed for water measure and the board, trailed by a sensor sort out for water resources information watching is created reliant on IOT.
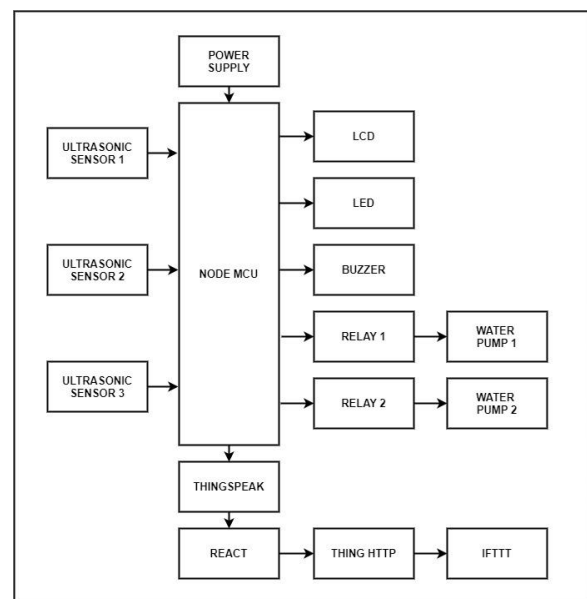
2 .BLOCK DIAGRAM

1. I2C LCD Display

I2C LCD is an easy-to-use display module, it can make display easier. Using it can reduce the difficulty of make, so that makers can focus on the core of the work.

2. Buzzer

A buzzer or beeper is an audio signalling device, which may be mechanical, electromechanical, or piezoelectric (piezo for short). Typical uses of buzzers and beepers include alarm devices, timers, and confirmation of user input such as a mouse click or keystroke.

3. LED

A light-emitting diode (LED) is a semiconductor light source that emits light when current flows through it. Electrons in the semiconductor recombine with electron holes, releasing energy in the form of photons. The colour

of the light (corresponding to the energy of the photons) is determined by the energy required for electrons to cross the band gap of the semiconductor. White light is obtained by using multiple semiconductors or a layer of light-emitting phosphor on the semiconductor device.

4. Pump Motor

It is a submersible motor which can be used to pump liquid from one place to another.

5. Ultrasonic Sensor

Ultrasonic transducers or ultrasonic sensors are a type of acoustic sensor divided into three broad categories: transmitters, receivers and transceivers. Transmitters convert electrical signals into ultrasound, receivers convert ultrasound into electrical signals, and transceivers can both transmit and receive ultrasound.

In a similar way to radar and sonar, ultrasonic transducers are used in systems which evaluate targets by interpreting the reflected signals. For example, by measuring the time between sending a signal and receiving an echo the distance of an object can be calculated. Passive ultrasonic sensors are basically microphones that detect ultrasonic noise that is present under certain conditions.

6. Node MCU

It includes firmware which runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which is based on the ESP-12 module. The term "NodeMCU" by default refers to the firmware rather than the development kits. The firmware uses the Lua scripting language. It is based on the eLua project, and built on the Espressif Non-OS SDK for ESP8266. It uses many open source projects, such as lua-cjson and SPIFFS.

7. Perf Board:

Perfboard is a material for prototyping electronic circuits (also called DOT PCB). It is a thin, rigid sheet with holes pre-drilled at standard intervals across a grid, usually a square grid of 0.1 inches (2.54 mm) spacing. These holes are ringed by round or square copper pads, though bare boards are also available. Inexpensive perfboard may have pads on only one side of the board, while better quality perfboard can have pads on both sides (plate-through holes). Since each pad is electrically isolated, the builder makes all connections with either wire wrap or miniature point to point wiring techniques. Discrete components are soldered to the prototype board such as resistors, capacitors, and integrated circuits. The substrate is typically made of paper laminated with phenolic resin

(such as FR-2) or a fiberglass-reinforced epoxy laminate (FR-4).

8. Connecting wires:

Connecting wires allows an electrical current to travel from one point on a circuit to another because electricity needs a medium through which it can move. Most of the connecting wires are made up of copper or aluminium. Copper is cheap and good conductivity. Instead of the copper, we can also use silver which has high **conductivity** but it is too costly to use.

9. Header

A pin header (often abbreviated as PH, or simply header) is a form of electrical connector. It consists of one or more rows of male pins typically spaced 2.54 millimetres (0.1 in) apart, but common sizes also include 5.08 millimetres (0.2 in), 5.00 millimetres (0.197 in), 3.96 millimetres (0.156 in), 2.00 millimetres (0.079 in), 1.27 millimetres (0.05 in) and 1.00 millimetre (0.04 in). The distance between pins is commonly referred as pitch in the electronic community.

10. USB

USB stands for Universal Serial Bus. It is used as a data cable for programming as well as for supplying power.

11. Relay Module

A relay is an electrically operated switch. It consists of a set of input terminals for a single or multiple control signals, and a set of operating contact terminals. The switch may have any number of contacts in multiple contact forms, such as make contacts, break contacts, or combinations thereof.

Relays are used where it is necessary to control a circuit by an independent low-power signal, or where several circuits must be controlled by one signal. Relays were first used in long-distance telegraph circuits as signal repeaters: they refresh the signal coming in from one circuit by transmitting it on another circuit. Relays were used extensively in telephone exchanges and early computers to perform logical operations.

12. Battery Snap

It is used to connect 9V battery to the pins to provide power supply.

13. 9V Battery

The nine-volt battery, or 9-volt battery, is a
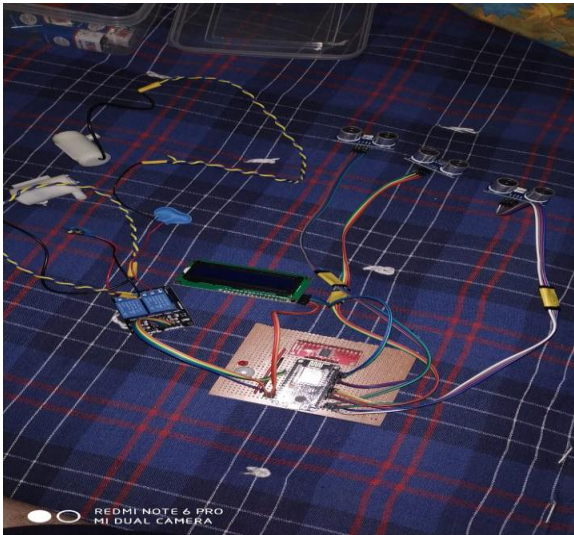
common size of battery that was introduced for the early transistor radios. It has a rectangular prism shape with rounded edges and a polarized snap connector at the top. This type is commonly used in walkie-talkies, clocks and smoke detectors.

3. FLOW CHART
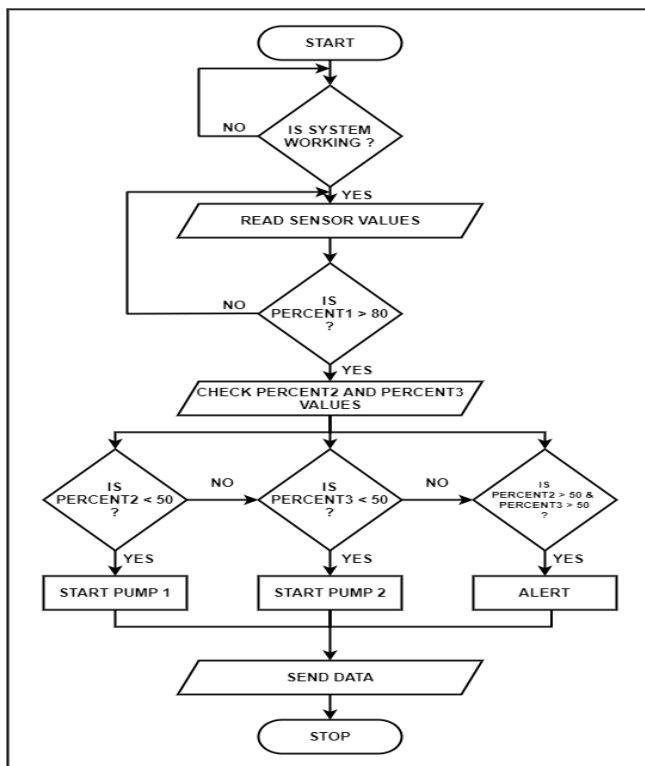
4. FUTURE WORK

1. Sensors can be added for quality monitoring of water.

2. Can be implemented for automating post processes of rain water harvesting.

5. CONCLUSION

The flow of water through the pipeline can be monitored, forecasted and visualize from anywhere in the world using internet through computer or smartphone. The collected data can be analysed for making predictions to the users and also for demand management, asset management, and leakage management. With water as a flowing liquid the system has been tested successfully. The work can be extended to forecast data for larger communities with customer satisfaction involving low cost and better performance of the overall system.

6. RESULT
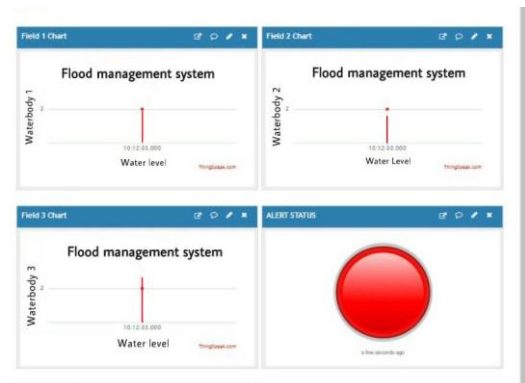
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WEBSIDES:-

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[6] Japan Flood Management Documentary:- https://youtu.be/Rp2l6nFlsZA