

IoT Based Real Time Water Level and Contamination Monitoring System with Android Interface

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Abstract-Water Contamination & water wastage are big issues these days. As water is one of the most important substances on earth so preserving water and keeping it clean and usable is a big challenge. Dam water monitoring by physical means is quite difficult on regular basis. People now days always want something that can make their tasks & life easier. In proposed system we define the dam water monitoring systems such as it will sense water level as well as pH state of water and using wireless sensor network we send that data to android application which indicate alert messages and current state of water in Dam. This will help to control flooding and water contamination monitoring. The water level monitoring with ultrasonic sensor is used to indicate the level of water in the Dam to agent. And pH Sensor Based Water Pollution Detection, it will check the water quality by using the parameter such as the pH level is measured in real time by the sensors and it will be monitoring by an agent. In this system our motivation is to prevent the flooding and water contamination by using technologies and the monitoring system uses daily life device like laptop or mobile phone.

Keywords-Internet of Things (IoT), pH, Ultrasonic, WSN, Ultra Sonic, ZigBee, GPRS, WIFI.

I. INTRODUCTION

This article focuses on issues related to water Dam level and contamination with our proposed solutions with IOT. A Dam is usually kept partially full, even if it has large capacity. So, when it rains heavily or there is a big snow melt-off, a large amount of water can be occupied in the dam and released slowly downstream. If the dam hadn't been there, a large amount of water could have rushed down the rivers and flooded downstream. Dams can steady the water levels of rivers and seas. When water increases to a dangerous level and is not monitored by the authorized person and then dam failure can cause potential disastrous damage to life and property.

However, if the authorities always know the current status of the water level this condition can be prevented. Therefore a technology needs to be developed to implement this problem and making the system more organized. Therefore, water level indicator designing is one of

the technological advancement to transmit data and received by authority for controlling.

If water level increases to dangerous level, the systems also give an alert to authority to take immediate action. The system can be used at the river-banks, low-lying areas, dam and the village far from town and also can be used for industrial sector. It is an efficient method to transmit, analyze, manage and give a feedback. The authorized person will take an immediate action to monitor the water level. So, In water dam water level checking is important task to take fine decision to prevent flooding and other natural disaster caused by it.

Similarly, high-density, industrialized aquaculture results in the deterioration of the water quality environment. The baits and substances will pollute the water environment, affect the fish growth, and even cause the mass outbreaks of disease. It is an immediate problem to establish an automatic water environment monitoring system with perfect function, stable performance.

It is possible to precisely measure and adjust the water parameters such as the pH value which helps to obtain the acidity level of water which is suitable to the growth of fish.

In proposed system by making use of IoT the real time water monitoring system will be developed for measuring water level and the contamination in water and can be remotely monitored by using simple devices and use friendly GUI like smart phones, laptops using android or windows platform.

II. LITERATURE SURVEY

Various studies involving the implementation of water quality monitoring systems using wireless sensor network (WSN) technology can be found in literature.

Water quality observation and measurement system is presented in this ZigBee based WSN. This system enables to real-time monitoring of the water quality parameters and remote probing and it also allow observation of historical

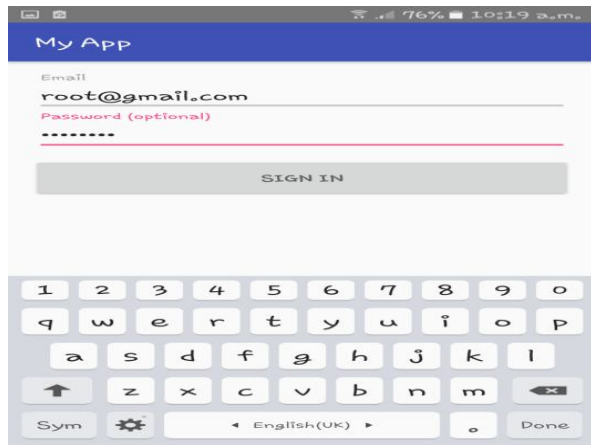


Figure 4: Android Login Module.

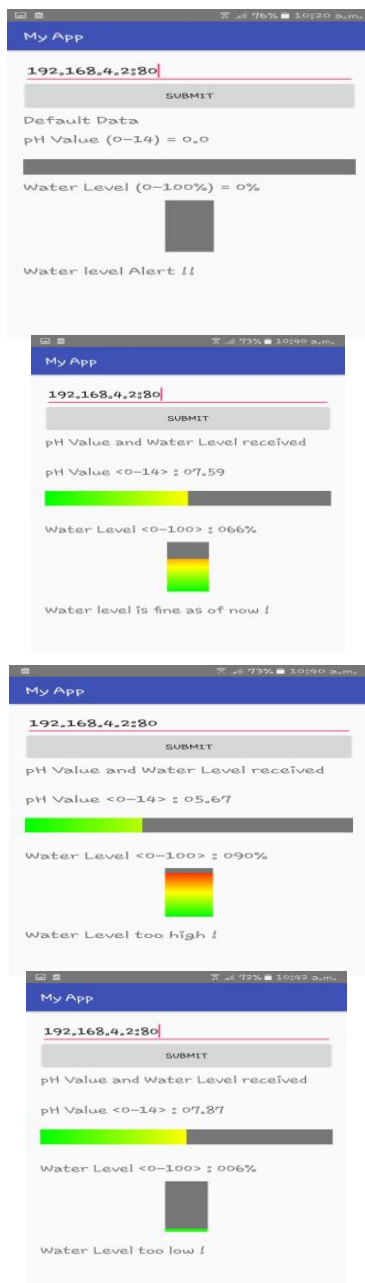


Figure 5: Actual Results

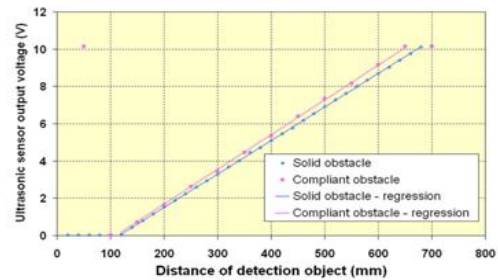


Figure 6: Result Analysis Ultrasonic sensor

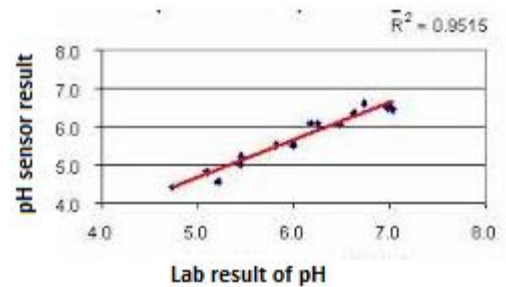


Figure 7: Result Analysis for pH sensor

V. CONCLUSION

The IoT based water monitoring system by the efficient use of sensor technology and android platform will make water monitoring system 90% more reliable and easy to operate.

System will give real-time results as works on always on technique. We can use historic result to predict future events. It will definitely solve most of the problem related to monitoring of Dam water level and contamination present in water.

In future work we can add thermal and other Water Quality Sensor to check water temperature, pressure, dissolved gases and heavy metals etc. in system for current status of water and prediction of future events.

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