

WATER LEVEL MONITORING SYSTEM USING IoT & ATmega328p MICROCONTROLLER

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ABSTRACT

Water source is fundamental for all and a significant factor in agriculture, cultivating and it's a key for nature of our life. Monitoring water level of a water supply, For example, Lakes, River, Waterways and Pond etc., Plays a major part in rural and agricultural. Even it's helpful for our every day needs. For example the amount of water drops under the edge level in a bore well, The motor pump may get affected due to dry running. There are many several alternative things wherever water level monitoring is an important task. This report proposes a prototype system design, implementation and description of needed devices and technologies to improve Internet of Things (IoT) based water level monitoring and keep track of frequent evaporation in rivers, waterway, lakes and ponds which can be implemented in future smart villages.

Keywords: *Water level sensor, Arduino atmega328, IoT.*

1. INTRODUCTION

The main objective of this investigation is to build up a framework to monitor a water level of a water source from an inaccessible area. The IoT based system given during this study is going to be useful to attain such task. The prototype system experiment of this study allows keeping track of a water supply from remote area continuously. The real usage of the system would require changes in detector and few alternative technologies and source code in spite of the fact that the system and working rule continue as before.

2. PROBLEM STATEMENT

Evaporation is that the modification of water from a liquid to a gas. Water is constantly dissipating from the surface of the Earth, actually pumping increasingly water vapor into the climate. Water and land surface most of this heat energy comes from the surface, not from the air.



At the point when water meets dry air, it's not in equilibrium; water particles evaporate off the surface till the quantity of water within the air creates enough force per unit area to attain equilibrium. Once water is heated to a temperature of 100C, the force per unit area equals that of low-lying atmospheric pressure.



Water source is essential and a significant factor in agriculture and farming and it is a key for quality of our life. Monitoring water level of a water source, such as lakes, ponds, rivers etc., plays a key role in agricultural. Even it is useful for our daily needs. For example if the level of water drops below the threshold level in a bore well, the motor pump may get affected due to dry running. There are many other situations where water level monitoring is an important task.

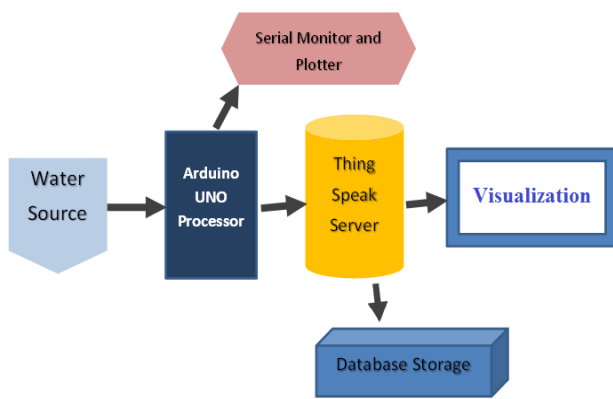
3. WATER LEVEL SENSOR

The water level Indicator employs a simple mechanism to detect and indicate the water level in an overhead tank. This is a five levels indicator. The sensing is done by transmitter and will start sending radio signal that will receive by the receiver.

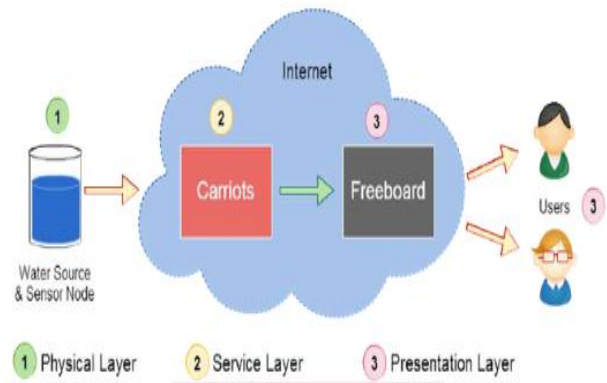
The receiver updates different level LED depends upon the water level signal transmitted by transmitter. (Five level). A buzzer is also added which will automatically start as the water level becomes full. The user has to press the only button on receiver to stop the buzzer. The water level Indicator will be work efficiently up to 5 floor building. Installation of the receiver in open will increase its efficiency.



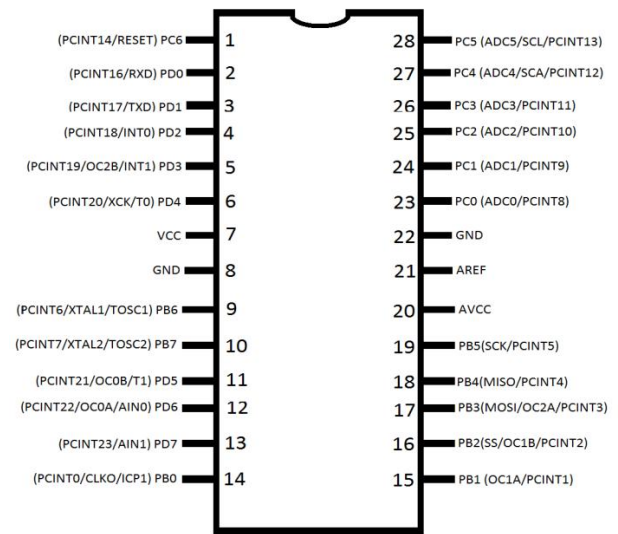
WATER LEVEL SENSOR



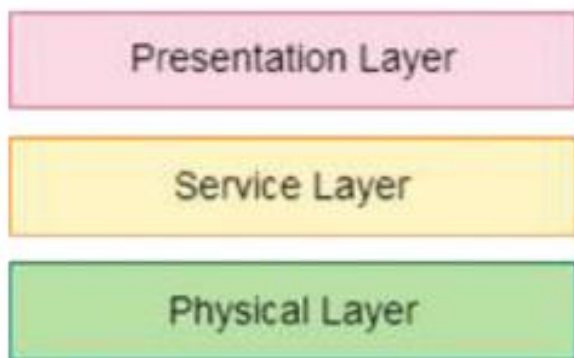
BLOCK DIAGRAM



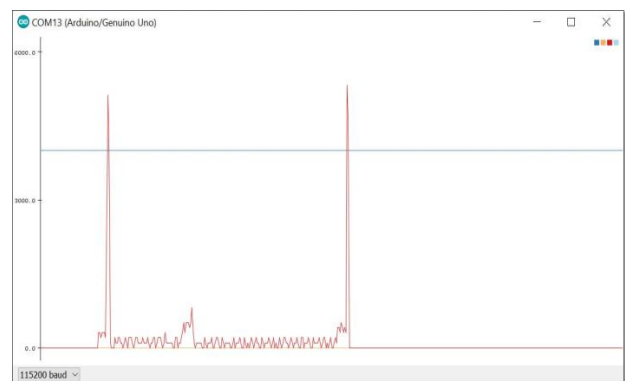
THREE LAYERS PROPOSED SYSTEM

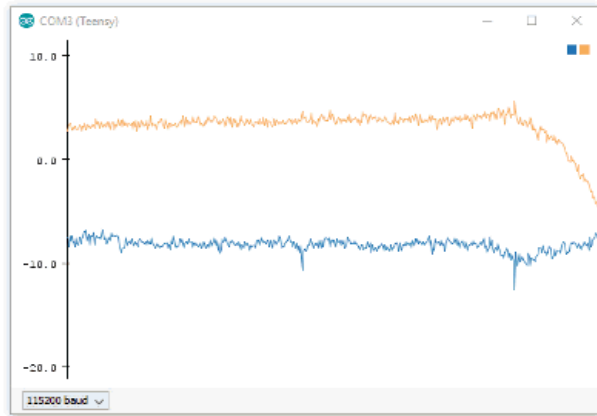


ATMEGA328P PIN DIAGRAM



4.OUTPUT:





5.FUTURE SCOPE:

In future, the proposed system can be used to monitor and analyze water usage of the specific water source thus require developing such logic for the application. The system can also be used to collect and study the environmental data of water source and its surrounding area by integrating other sensor to the system. The study may include location data, water quality, temperature, humidity and various other factors. For example Arduino GPS shield can be integrated in the system to obtain location data of the water source dynamically.

- Power conservation.
- Automatic on/off switching operation.
- Wireless Communication.
- Can be implementing on any water source.
- Accuracy.
- Mobile Access.

6.ADVANTAGE:

- Cost effective.
- Practical and affordable.
- Pollution free and the safest way to save energy.
- Reduces human resource and provides security.
- Ensure security.
- lower maintenance.
- Easy to use.
- Easily available and replaceable components.

7.APPLICATION:

Can be implemented in any water resources like ponds, lakes, rivers or even house hold applications such as tanks or even government reservoirs such as metro water tanks, Lorries through which we can monitor the level of water evaporation and reduce it through necessary steps.

8.CONCLUSION:

This IoT based proposed system is used to acquire water level and its evaporation details of a water source in real time from any location, any device connected to Internet. This water evaporation data can be used for various purposes for better management of water source. Monitoring water evaporation from remote location may be very useful when it is not possible to visit location physically every time. The system can be implemented for different sources of water by replacing sensor device suitable for the condition.

Concluding the proposed IoT based water evaporation monitoring system will be helpful to collect, analyze and predict the water level detail, water usage and other information of particular water source at particular location in real-time remotely

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