SMART WATER DETECTION FOR BOREWELL

Ms.Pagare Pooja M.. [1], Ms.Kotwal Ashwini S. [2], Ms. Badwane Sayali R. [3], Ms. Ahire Dipali A.. [4], Ms.M. D. Kawade[5]

[1] *Student, Information Technology, SNJB Nashik, Maharashtra, India*
[2] *Student, Information Technology, SNJB Nashik, Maharashtra, India*
[3] *Student, Information Technology, SNJB Nashik, Maharashtra, India*
[4] *Student, Information Technology, SNJB Nashik, Maharashtra, India*
[5] *Assistant Professor, Information Technology, SNJB Nashik, Maharashtra, India*

ABSTRACT

We introduce the notion of water level monitoring and management within the context of electrical conductivity of the water. More specifically, we investigate the microcontroller based water level sensing and detecting in a wired and wireless environment, with the help of ultrasonic sensor we calculate the distance. Water Level management approach would help in reducing the home power consumption and as well as water overflow. Furthermore, it can indicate the sensor will detect water, when water is present at that time LED will glow, and water is absent LED will off. Moreover, cellular phones with relative high computation power and high quality graphical user interface became available recently. From the users perspective it is required to reuse such valuable resource in a mobile application. Finally, we proposed a web and cellular based monitoring service protocol would determine and senses water level globally.

Keyword :- *Relevant API calls, Application Programming Interface*

1. INTRODUCTION

We investigate the microcontroller based water level sensing and detecting in a wired and wireless environment, with the help of ultrasonic sensor we calculate the distance. Water Level management approach would help in reducing the home power consumption and as well as water overflow. Furthermore, it can indicate the sensor will detect water, when water is present at that time LED will glow, and water is absent LED will off. Moreover, cellular phones with relative high computation power and high quality graphical user interface became available recently. Water Level Indicator For water level indication unit we can use some LED light which will work for water level indication. By touching different water levels through water level sensor, LED should be indicated as on/off.

The aim of the present work is to find out the lifetime permanent solution to the farmer, develop such a system to find out natural water storage area. Using latest technology and equipment and obviously it is user friendly because most of the Indian farmers not aware the technology, equipment so, this is a big challenge developing such a system to easily understand with the help of colours and values. So we use red colour for absent water sensor output and use green colour for present water sensor. System must low cost and less maintenance, it is also challenge. Water is commonly used for agriculture, industry, and domestic consumption. Therefore, efficient use and water monitoring are potential constraint for home or once water management system. Last few decades several monitoring system integrated with water level detection have become accepted. Detecting water level is an essential task for government and residence perspective. In this way, it would be possible to track the actual implementation of such initiatives with integration of various detecting activities. Therefore, water detecting system implementation

makes potential significance in home applications. The existing automated method of level detection is described and that can be used to make a device on/off. Moreover, the common method of level control for home appliance is simply to start the feed pump at a low level and allow it to run until a higher water level is reached underground. This is not properly supported for adequate controlling system. Besides this, liquid level control systems are widely used for monitoring of liquid levels. Usually, this kind of systems provides visual multilevel as well as continuous level indication. Audio visual alarms at desired levels and automatic control of pumps based on user's requirements can be included in this management system. Proper monitoring is needed to ensure water sustainability is actually being reached, with disbursement linked to sensing and automation. Such programmatic approach entails microcontroller based automated water level sensing and detecting. water level indication unit we can use some LED light which will work for water level indication. By touching different water levels through water level sensor, LED should be indicated as on/off. To make special water level sensor we would like to introduce ultrasonic sensor. We are using Arduino Microcontroller is used for to sense or detect the water level using ultrasonic sensors.

2.LITRATURE SURVEY

This chapter provides a detailed literature survey of proposed system. Based on Many existing system have been studied which provide let user post on wall upload graphical contents and share them.There are various methods for investigating phreatic layers. Traditionally, dowsing was the only way of searching for groundwater. Subsequently, more modern and scientific techniques were developed, significantly improving the success rate of water collection facilities

List of methods-

2.1 Preliminary survey

2.2 Dowsing

2.3 Modern methods

2.1 Preliminary survey

It is highly advisable for phreatic layer investigators, especially if they are not from the region concerned, to carry out preliminary surveys in order to collect information which can give them precious data on the places where there is a likelihood of finding water. Depending on the size of the expected source, this can consist of either - after a first look at the site and a meeting with the chiefs or heads of the villages, a survey with their population to find out where wells would have been dug or where springs would have been used, where the vegetation is greenest and remains green during the dry season, where trees and plants naturally grow best, where the existing water sources have the highest outflow in all seasons, where the termite mounds are located, if any, etc.
- or, at the same time, research into the region's geological map, climatic data and all appropriate information which may be obtained from the local or regional authorities or other organizations or operators working in the region.

2.2 Dowsing

In numerous countries (including France), certain people have the ability to investigate and determine the presence of water on a site and detect water channels (veins, faults and aquifers).

These "dowsers" are often people who have special abilities passed down by their predecessors or a village wise man or woman.

The principle consists in :

- Choosing a forked or Y-shaped twig from a tree such as a mango tree or using metal rods
- Positioning the twig or rods between the fingers so as to amplify the sensations felt and seeing if they twitch and go down (or cross) at the expected place.
- Criss-crossing the area in order to determine the most promising areas.

There are different types of divining rods :

- The Y-shaped or V-shaped twig
- Metal rods
- Parallel rods
- The Hartmann lobe
- The Lecher antenna

When the dowser uses metal rods, he holds them parallel between his fingers. When he comes close to a place under which there is water, the rods get closer together and end up crossing over one another where a groundwater source is significant. This can be tested and proves successful with many people, but the findings are imprecise and do not indicate thesisoftheaquifer.
Moreover, this method doesn't make it possible to detect small, relatively deep groundwater flows.

Disadvantages:

Most of the time, operations based solely on a dowser's findings do not bear fruit or the findings are too imprecise.

What's more, the effectiveness of a type of operation is difficult to assess since situations are rarely comparable.

Moreover, the use of this equipment presents drawbacks : it only allows detection down to a certain depth and the indications may be distorted by the presence of electromagnetic signals or electric lines.

2.3 Modern methods

These methods make it possible to locate aquifers with more precision, and they are much more efficient in assessing their size, volume, quality and sustainability.

Topography

Analyzing maps and local vegetation gives a first indication of the presence of water. In the case of large-scale investigations, a global geological analysis can even be carried out through the interpretation of satellite images or aerial photos. These can highlight the presence of the major geological outlines liable to give rise to fractures with an identifiable direction or outcrops.

Hydro geophysics

Geophysical methods are now the main methods of investigation and detection of underground aquifers. The method chosen mainly depends on the geological context.

Traditional geophysical methods

With these methods, we strive to study the soil's physical properties and in particular its electrical properties**.** The aquifers are most often trapped between rock layers. All rocks conduct a certain amount of electricity, but their conductivity and resistivity vary according to their type : compact rock, dry rock, fractured rock, wet rock, permeable structures or impermeableones.
A material's electrical resistivity is its capacity to oppose the flow of electric current.

These methods are thus based on the capacity of the soil or rock to conduct electricity and the measurement of their conductivity or resistivity (the opposite of conductivity).From these measurements, the type, size and quality of the aquifer is deduced and specified, or perhaps only presumed, but with a high probability.

There are two main types of methods, which are sometimes used successively :

a)The measurement of electrical resistivity using direct current. This is the most widely used method as it is suited to the greatest number of situations. It consists in sending direct current into a geological structure on a given site (50 to 400 volts depending on its resistivity - conductivity) using two electrodes (A and B).

There are several possible electrode arrays (Wenner, Schlumberger, 4 terminals, etc.).

The area investigated must not be too large and must be relatively flat and free of buildings which may cause interference and would make it impossible to have AB lines of the required length (over 300m).

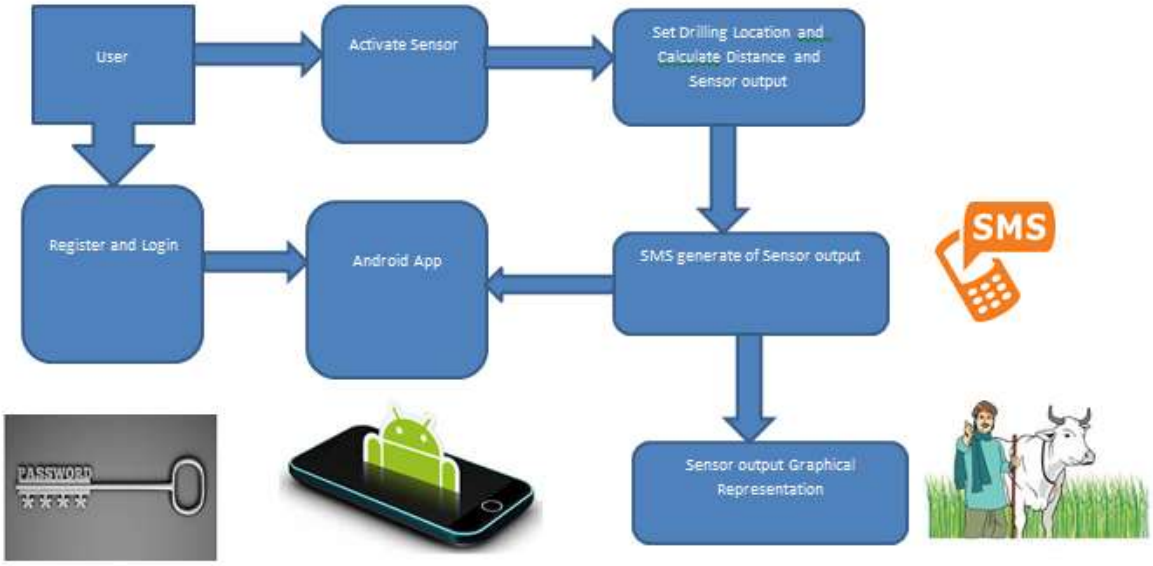
b) Methods for measuring this reactivity by magnetic means Easier to implement, such as the Slingram and VLF methods, these methods measure electromagnetic signals due to magnetic induction phenomena. They don't need any contact with the ground and thus no electrodes. They make it possible to measure the soil's reactivity to electromagnetic excitation. However, they cannot be used on all types of grounds or for aquifers over 20 meters deep, or even less. Their use seems to have dwindled.

Disadvantages:
Modern hydro geophysics techniques are costly.

They can only be used for the set-up of large or numerous water extraction facilities for which large budgets are available.

3.PROPOSED SYSTEM

City and industrial area consume 95% of water so, in agriculture sector get only 5% of water, this is not sufficient for farming. In Rural area electricity supply is not available 18 to 20 hours. So the purpose of developing this project is to provide user friendly system to our farmers because most of the farmers are illiterate in our country.



4.SYSTEM ARCHITECTURE

5. WORKING

The user will have to register and login to the system. The user will activate the sensors and set the location for the water detection. If the sensors detect the water then it will calculate the distance and detect the location of the water level underground. It will generate the SMS from the results and pass it to the android app. The output will be represented in the graphical format in the android app.

6. CONCLUSIONS

The objective of this project was to design & implement an Ultrasonic Obstruction Detection & Distance Measurement device. As described in this report a system is developed that can detect objects & calculate the distance of the tracked object. With respect to the requirements for an ultrasonic rangefinder the followings can be concluded.

• The system is able to detect objects within the sensing range.

• The system can calculate the distance of the obstruction with sufficient accuracy.

• This device has the capability to interact with other peripheral if used as a secondary device.

• This offers a low cost and user friendly.

7. ACKNOWLEDGEMENT

With deep sense of gratitude we would like to thanks all the people who have lit our path with their kind guidance. We are very grateful to these intellectuals who did their best to help during our project work.

It is our proud privilege to express deep sense of gratitude to Dr. M. D. Kokate , Principal of SNJB's LS KBJ COE, Chandwad, for his comments and kind permission to complete this project. We remain indebted to Prof. M. M. Sanghavi , H.O.D. of Information Technology Department for his timely suggestion and valuable guidance.

The special gratitude goes to Ms. M. D. Kawade Assistance professor excellent and precious guidance in completion of this work .We thanks to all the colleagues for their appreciable help for our working project. With various industry owners or lab technicians to help, it has been our endeavor to throughout our work to cover the entire project work.

We also thankful to our parents who providing their wishful support for our project completion successfully .And lastly we thanks to our all friends and the people who are directly or indirectly related to our project work.

8. REFERENCES

[1] Tung-Ming Koo and Hung-Chang Chang and Guo-Quan Wei,., "Construction P2P firewall HTTP-Botnet defence mechanism",2011.

[2] Hyunsang Choi and Hanwoo Lee and Heejo Lee and Hyogon Kim, "Botnet Detection by Monitoring Group Activities in DNS Traffic ", IEEE 2007

[3] Choi, Hyunsang and Lee, Heejo and Kim, Hyogon," BotGAD: detecting botnets by capturing group activities in network traffic,"2009

[4] Govil and G.Jivika, "Criminology of BotNets and their detection and defense methods",2007

[5] Brankovic ,L., and Estivill-Castro , V., "Privacy Issues in Knowledge Discovery and Data Mining," In *Proc. of Australian Institute of Computer Ethics Conference (AICEC99)*, Melbourne, Victoria, Australia, July 1999.

[6] Jefferies, P., "Multimedia, Cyberspace & Ethics," In *Proc. of International Conference on Information Visualisation (IV2000)*, pp. 99–104, London, England, July 2000.

[7] Cox, L. H. and Kim, J. J. , " Effects of rounding on the quality and confidentiality of statistical data," In *Privacy in Statistical Databases-PSD* , vol. 4302, pp. 48–56, Berlin Heidelberg, 2006.