3rd National Conference on Green Technology and Science for Sustainable Development
© 2020 IJSRST | Volume 5 | Issue 6 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X
International Journal of Scientific Research in Science and Technology

IoT Based Start-up helps to Track and Reduce Water Consumption at Home

Prof. Pradyumna. P. Kulkarni, Sapana L. Maurya, Nandinee T. Bharad , Shraddha R. Gawai , Pooja D. Morey
Computer Science and Engineering, Anuradha Engineering College, Sant Gadgebaba Amravati, Chikhli, India

ABSTRACT

Day to today increasing demand of water supply has become a major challenge for world. Water is commonly used for Agriculture, Industry and Domestic Consumption, therefore efficient use of water to be maintained. As someone who has believes in the power of data, he began looking for a solution that helps to detect the water consumption by using different activities. In this paper Ultrasonic Sensor used for indicating water level. It identifies the quantity of water. This paper presents an IoT based start-up help to Track and Reduce water consumption and identify water leakage in tank.

Keywords : IoT (Internet of Things), Smart Hardware, Sensors, Firmware, Web.

I. INTRODUCTION

Water is an important resource for all the living things on the earth. Emerging Internet of things enables electronic device to communicate with each other by used of Internet a simple and easy to implement technology was developed devices to exchange data. [1] Water is one of the most important resources for the life in the land, and normal the man wastes it without measure of a form or other one. The best way to conserve this problem by using the IoT based water saver.

In this topic we used the water saviour is a Wi-Fi based smart water level consumption and meter for homes and apartments and it can be plugged into the tank of homes and comes suitable for an automatic motor switch based on the user water threshold. It also provides real time status updates on the overhead water tank status on a users smart phone, also provides water consumption details on every 10 minutes, as well as weekly, monthly and yearly gives water uses history. To find the leakage detection is the biggest problem in existing system, also managing water supply properly is very difficult. Daily there are lot's of water wastage in our surrounding. [1, 4]. There is not proper way for water management system. This system is used for proper water management system to control and manage our available water.

In currently Bangalore based Nimble Vision, started an IoT based start-up helps you to track and reduced water consumption at home, their name is Chinnayya math and Vaishali chinnayya in early 2019. The real-time monitoring system of water resources information will benefit the water resource management department and the public.

II. METHODS AND MATERIAL

The ability to monitor water level and to check how many water usage everyday in India is an important issue through the field of the environment as well as Engineering [2, 6]. Today's everyone talking about water crisis, so that the solution of above problem is the water saviour app.

The water saviour is

- IoT based smart water level controller.
- Water usage details on cell phone.
- Smart water meter.
- Water quality indicator
- Solution for individual home.

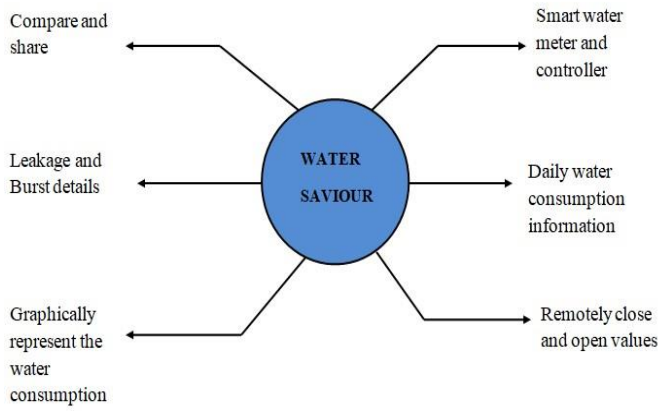


Fig: The Water Saviour

In this paper, we discuss how useful these water saviour app. This is used to help to indicate the level of water in tank and to check the quality of water also used to identify the leakage of water in tank. This is done by with the help of a web; we can see the level of water which is available in tank by the help of web.

- **How it Works**

The water saviour is a smart solution, is a Wi-Fi based smart water level controller and meter for homes and apartment. An Internet of Things enabled device, it can be connected to the tanks of homes, and comes fitted with an automatic motor switch based of the user water threshold.

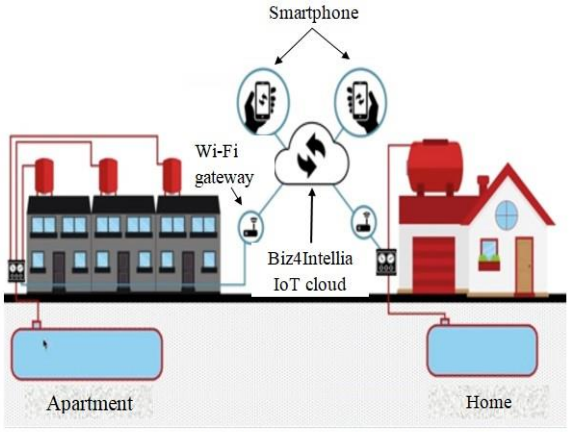
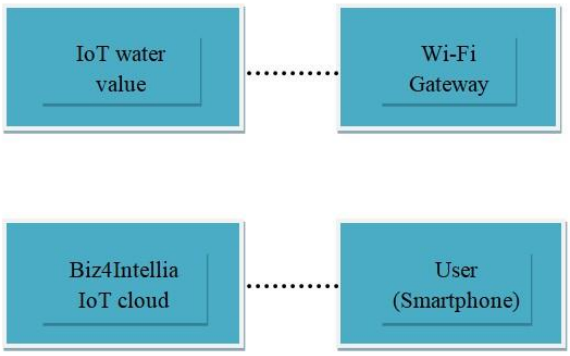


Fig: THE WATER SAVIOUR – PLATFORM DETAILS

In the above diagram, there is a house an overhead tanks and the underground sump, both are connected to the control unit. The control unit is helps to collect data from the overhead water sensor as well as sump water level then data is going to proceed. According to the level of water the motor get either turn ON or turn OFF. After that it sends information via cloud to our mobile application with the help of Wi-Fi gateway.

An ultrasonic sensor (transistor circuit) is used to detect the level of water. They feed Arduino (water level indicator) board and the arduino generates corresponding output text, and then the output displayed on the webpage [2]. If the water level is low then the circuit sends the message with the help of Wi-Fi that the water level is low and switch on the motor, and the water level is full, then the circuits sends the message via Wi-Fi that the water level is full and switch of the motor. Also automatically switch ON/OFF the motor.

How it works?

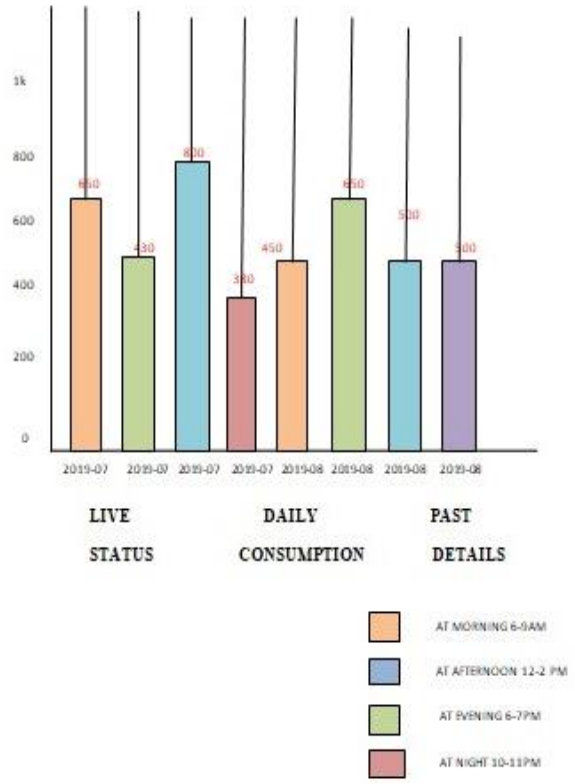


The smart algorithm on the server side calculates the consumption, identify the leakage, and make other calculation. The app and web dashboards adjust data from the server. The unit is remotely analysed and controlled so it reduces manual effort.

The water saviour includes:

1) Smart Water meter and Controller
   - Automatic Motor ON/OFF.
   - Accurate water consumption detail.
   - One device controlling multiple tanks and motor.
2) Solution for indivisible Homes and Apartments
   - Individual homes details.
   - Apartment individual home details.
3) Real time Water Leakage Detector
   - Detect Tap and Sump water leakage detection.

4) Graphically Represents Water Consumption on App and Web
   - Live water level status which is available in the tanks.
   - Daily and past water consumption details in litres.



5) Sharing Dashboards on Social Networking Sites
   - Users can share their home water consumption dashboard on Social media.

III. ADVANTAGES

- This system is used to save money, environment and energy.
- This system is used for water leakage detection and quantity of water.
- This system helps to better water usage management.
- It is used for water quality testing and analysis.
- It is remotely analysed and control so it reduces manual effort.
- This system is really a smart water meter controller, able to track the water consumption every 30 minutes.

IV. CONCLUSION

In this paper, By using IoT(Internet of Things) to indicate the level of water and quality of water, Also used to detect the leakage of water in tank. This system eliminates traditional water metering systems which is difficult to maintain. This system needs less man power.

This system is also useful for government to check live water availability and consumption details of each home available on the remote server. Because of automatic water meter reading there is no manual efforts for billing.

V. REFERENCES

[1]. Prof. M. Asalmol sir, Mangesh Datar, Mayur Gawade, Akshay Patil, Tanuja Gawale "Water management system for smart city using IoT" Imperial Journal of Interdisciplinary Research, pune, 2017.

[2]. Patawala Amatulla .H, Bansode Navnath .P, Bhong Yogesh .P, Prof. Zadbuke Ashwini .S "IOT Based Water Management System for Smart City" International Journal of advance research, Ideas and Innovations In Technology.

[3]. Tomas Robles, Ramon Alcarria, Diego Martin, Mariano Navarro, Rodrigo Calero, Sofia Iglesias, and Manuel Lopez. "An IoT based reference architecture for smart water management processes."

[4]. T. Robles, R. Alcarria, D. Mart'in, and A. Morales, "An Internet of Things-based model for smart water management," in Proc. Of the 8th International Conference on Advanced Information Networking and Application Workshops (WAINA'14), Victoria, Canada. IEEE, May 2014, pp. 821-826.

[5]. M. H. FotouhiGhazvnii, M. Vahabi, M. F. A. Raised and R. S. A. Raja Abdullah, "Energy Efficience in M 802. 15. 4 for Wireless Sensor Networks," Proceedings ofIEEE 2008 6th National Conference on Telecommunication Technologies and IEEE 2008 2nd Malaysia

Conference on Photonics, Putrajya, Malaysia, Aug., 2008,pp. 289-294.

[6]. Shifeng Fang, LiDaXu. An Integrated System for Regional Environmental Monitoring and Management Based on Internet of Things[J], IEEE TRANSACTION ON INDUSTRIAL INFORMATICS, VOL. 10, NO. 2, MAY 2014, PP: 1596-1605.