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Water Supply Detection and Alert System Using IOT

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ABSTRACT: The main aim of our project is to control the corporation water supply for several areas from one control board which uses ARDUINO as a Microcontroller for controlling the entire System of operation by enabling the system more efficient for signal and information passing. It is an economic, efficient, eco-friendly system for controlling the corporation water supply. In addition to this system, we have also used GSM modem to establish mobile communication between corporation office and public people for sending SMS acknowledgement to the public stating that water open period from corporation office for their particular resident area. It will help public greater manner in collecting water without memorizing the water opening date and time from corporation. Proper water supply is necessary for all and hence this project have water leakage sensors to detect water leakage problem in the pipelines and it will send alert to the corporation office through GSM Modem immediately once the water leakage has been detected. It uses Electromagnetic Switching Relay for Activating/Deactivating the Centrifugal Water pump and the water flow is restricted to the different regions by controlling the corresponding Solenoid Values. Our project portrays about a proper water distribution with timing. This system of controlling the corporation water supply from the control unit reduces the man power. The main aim of this project is to provide corporation water supply with proper timing from one place (control unit). When this project is implemented everywhere wastage of water also reduced, because of a desired timings and calculated water levels.

I.INTRODUCTION

Water is a basic need for all living being. Thus, proper water supply is necessary for all. Our project portrays about a proper water distribution with timing. Thus, by providing regular and defined water supply there will be a reduced problem for water in the towns and cities. In our project we have proposed a system for controlling the corporation water supply from the control unit. This also reduces the man power. The main aim of our project is to provide corporation water supply with proper timing from one place (control unit). We are using Arduino as controller and RF module for communication. When our project is implemented everywhere wastage of water also reduced, because of a desired timings and calculated water levels. We can implement this project in all towns and modern cities.

II. LITERATURE REVIEW

SENSOR BASED INTELLIGENT GARBAGE MONITORING SYSTEM

The Internet of Things (IoT) gather valuable information with the assistance of different existing innovations and after that self-sufficiently stream the information between different gadgets. The Raspberry PI controls the Solenoid esteem. Every one of the information is gathered with a raspberry pi and it process constantly and drive information on to the cloud. The cloud utilized here is things peak it's a free cloud accessible to a few breaking points. Here the qualities will be transferred once in 15sec.In this project, it is proposed to build up an inserted based remote water observing and robbery counteractive action framework by account the stream rates at the consumer end. Depending upon the level of the water the speed of the motor will be varied Computation of bill on premise of water utilized. Circulation of water as indicated by the bill instalment. Status reports on portable through Global System for Mobile communication (GSM) Module. PYTHON database Graphical user interface (GUI) for charging the board. Customer data and revive office. On the off chance that water level in the primary tank is above 90% then naturally the DC siphon will be killed. At the point when the water level in the fundamental tank is at or beneath 20% then DC siphon will naturally turn ON.

This paper exhibits a design for Smart Water Distribution System (SWDS) that corporate the IoT and Distributed computing innovations with Information and Communication Technology (ICT). The framework gathers the information from sensors by a predefined interface, dissect the information and show the outcomes on a sequential port

terminal. The information is put away in the Cloud and it is transferred to the online life.Because of the information and process conduct here used principally Kalman recursions for portraying and assessing the specialized condition of water organize the evaluated information are acquired from in-field perceptions and operational records. Two standards of methodologies are used. The first is a Markov chain (MC) display utilized for deciding the state likelihood and a general specialized conduct of a water dispersion framework.

III. OBJECTIVE

The main aim of our project is to control the corporation water supply for several areas from one control board which uses ARDUINO as a Microcontroller for controlling the entire System of operation by enabling the system more efficient for signal and information passing. It is an economic, efficient, eco-friendly system for controlling the corporation water supply. In addition to this system, we have also used GSM modem to establish mobile communication between corporation office and public people for sending SMS acknowledgement to the public stating that water open period from corporation office for their particular resident area. It will help public greater manner in collecting water without memorizing the water opening date and time from corporation.Proper water supply is necessary for all and hence this project have water leakage sensors to detect water leakage problem in the pipelines and it will send alert to the corporation office through GSM Modem immediately once the water leakage has been detected. It uses Electromagnetic Switching Relay for Activating/Deactivating the Centrifugal Water pump and the water flow is restricted to the different regions by controlling the corresponding Solenoid Values. Our project portrays about a proper water distribution with timing. This system of controlling the corporation water supply from the control unit reduces the man power. The main aim of this project is to provide corporation water supply with proper timing from one place (control unit). When this project is implemented everywhere wastage of water also reduced, because of a desired timings and calculated water levels.

IV. PROPOSED SYSTEM

The proposed system consists of Arduino for controller and RF for communication. Thus, from a main control unit we are controlling corporation water supply. This will be useful for peoples to get a proper water supply every day.
The transmitter is placed in the main control unit. It consists of the RF transmitter, Liquid Crystal Display (LCD) display, Arduino and switches. Here the LCD, Arduino, switches, RF module and other components need 5V supply for working, thus voltage regulators are used. The supply is given to the circuit initially. The receiver portion is near the water tank to control the valves. It consists of a RF receiver, a 240/12 v transformer, relay unit. The solenoid valve and the motor are connected with the relays. It is shown in fig.1.1. The Arduino is already programmed as to work for our need. Thus, when the switch, which the valve to be opened is turned ON, the programmed signal will be given to the RF transmitter from Arduino.
The transmitter transmits the data to the RF receiver. As the receiver receives the signal it will open the relevant valve to supply the water. After the set time the water supply gets automatically OFF. That is the valve will be closed through the relay. Thus, the water supply is made simply by reducing the man power and also the wastage of water will be reduced.
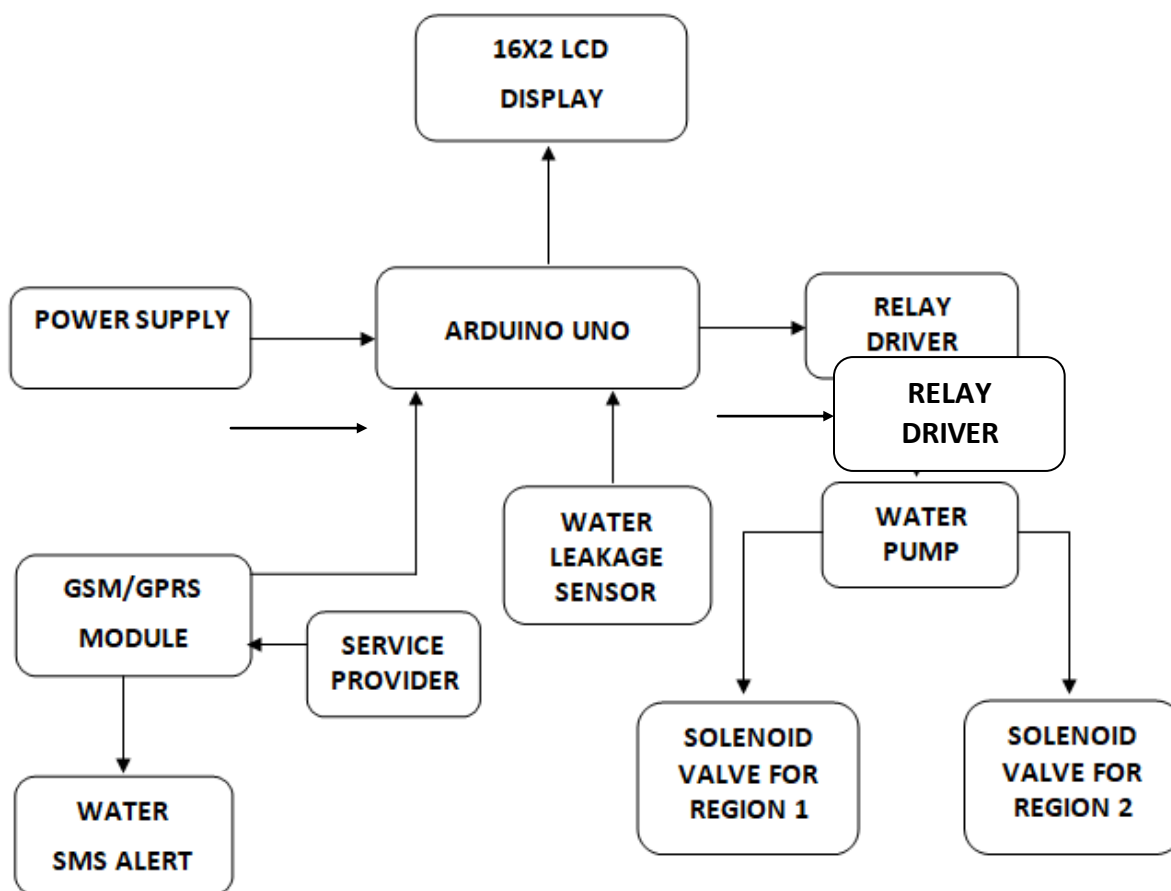
Fig 1.1

V. EXPERIMENTAL RESULTS AND DISCUSSION

A solenoid valve is an electromechanical device in which the solenoid uses an electric current to generate a magnetic field and thereby operate a mechanism which regulates the opening of fluid flow in a valve. The mechanism varies from linear action, plunger-type actuators to pivoted-armature actuators and rocker actuators. The valve can use a two-port design to regulate a flow or use a three or more port design to switch flows between ports. Multiple solenoid valves can be placed together on a manifold. Solenoids offer fast and safe switching, high reliability, long service life, good medium compatibility of the materials used, low control power and compact design.

VI. FUTURE ENHANCEMENT

The Proposed system is implemented as prototype and tested. The same can be implemented as real-time application. The system is designed with time slots for particular area. We can use mobile apps for controlling the switch, thus we can access the system from anywhere.

VII. CONCLUSION

Water distribution, one of the major issues in developed and developing cities of our country. The corporation involves people appointed to control the flow and distribute the water based on the needs. But conflicts may be caused for various reasons. Automation of this water distribution may reduce the problem. Hence the proposed system was successfully implemented with Arduino that controls the supply of water based on the preprogrammed time setup. This

System reduces the man power and financial needs given as salary for the distribution people. It also helps in providing uniform distribution and also reduces the wastage of water.

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