

Automated Town Water Management System

M.V.N.R. Pavankumar¹, Kumbhar A.B.², Pol Prasad H.³, Shevale Prashant B.⁴, Pawar Akshay V.⁵
Department of Electronics and Telecommunication Engineering^{1,2,3,4,5}, LNBCIET, Satara-415020^{1,2,3,4,5},
Email:pavankumarmvnr@gmail.com¹

Abstract-One of the most important aspect of any town management includes water management. It is a crucial aspect as now-a-days water resources are very limited and nobody can afford its wastage. This project deals about the automation in the water distribution and management with technical advances. In this system the level water will be sensed by the water level sensor. Depending upon the level of the water the speed of the motor will be varied. The supply of water to different areas automated through the use of DTMF. The speed of the motor is controlled with respect to tank water level. This project deals about the mobile controlled water distribution in different areas and distribution of water according to bill payment. One of the major feature of the project is distribution of the water according to bill payment and status update on mobile through GSM module

Index Terms – DTMF; GSM; GLCD; PIC-Controller Technology.

1. BACKGROUND

One of the world's major problems is the scarcity of water, mainly due to the Unmeasured water consumption and the waste of this vital element. This paper describes a modular water management system, which helps not only in monitoring consumption but also in finding water leaks and water pollution. In the past water resources are very limited & nobody can afford its wastage. For managing and providing water so many workers are required. Also to switch on valve & distribute water bill by going to home so many workers are required. To overcome this problem we are decided to work on automatic water management using PIC microcontroller also to overcome the problem of distributing water bill in different area by going to his home, we decided to use GSM module for communication.

By going through various concepts, the concept of this project was very challenging. The priority while selecting the project was to make a special and outstanding product which would be easily and effortlessly implemented in the society and also be very useful for the society. The idea of this project is carried out from our real experiences, our daily life experiences. We daily read newspapers, watch news channels. Sometimes we hear or read the news of water shortage and irregular supply of water. So we thought about this idea and have tried to give shape to our idea. Once the idea was selected, we started to search the information about this project.

2. INTRODUCTION

This project is based on the Pic microcontroller technology. In this system, the level of water will be

Sensed by the water level sensors. Depending upon the level of water the speed of the motor will be varied. The supply of water to different areas is automated through the use of DTMF. This system provides a visual display of the entire system by the use of graphical LCD

- Mobile controlled water distribution in different areas.
- Motor speed control with respect to the tank water level. Calculation of bill on basis of water used. Distribution of water according to the bill payment.
- Status updates on mobile through GSM Module.

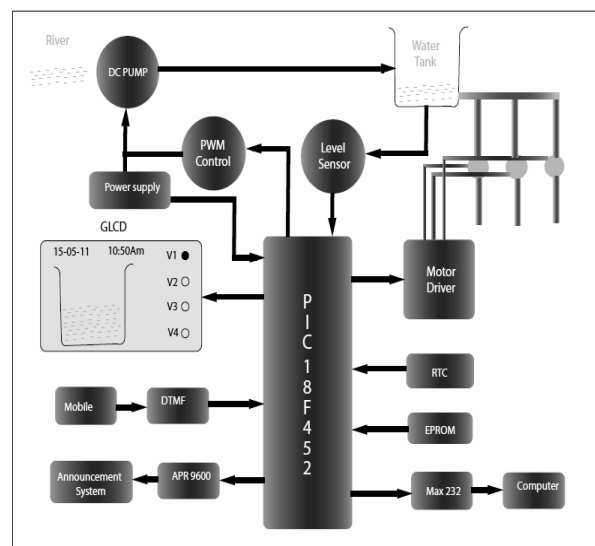


Fig.1 Block Diagram of Automated Town Water Management

3. WORKING

- An operator fills the tank automatically from water resources by using AC pump.
- Level sensor is inserted into the tank the level of water is sensed by level sensor.

- If the tank water level is above 90% then AC pump will automatically turn OFF and if the tank water level is at 20% then AC pump will automatically ON.
- The solenoid valve is control by mobile phone. Read the status of DTMF after connecting mobile to DTMF
- The status of DTMF is given to the PIC microcontroller. If DTMF status is 1 then respective solenoid valve will turn ON. Using the status of DTMF respective image of the valve is display on the GLCD.
- Send status of valve to GSM for sending SMS.

4. RESULT

1. By using PIC microcontroller technology this system can be practically implemented in any town, city or village for its automatic water distribution facility.
2. Output of valve status on GLCD is shown in fig. 2.
3. Tank water level is display on GLCD, which is shown in fig.3.
4. When mobile key 1 is press then respective valve no 1 will open which is shown in fig.4 and fig.5.
5. SMS is sent regarding status of valve and water level as shown in fig.6.

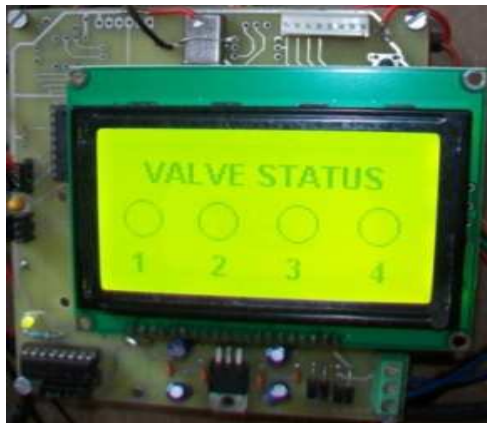


Fig.2 Valve status

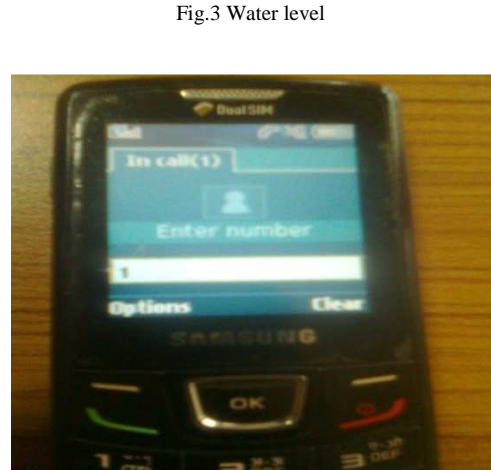
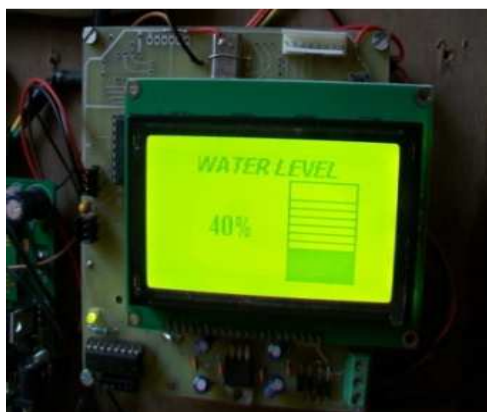


Fig.3 Water level

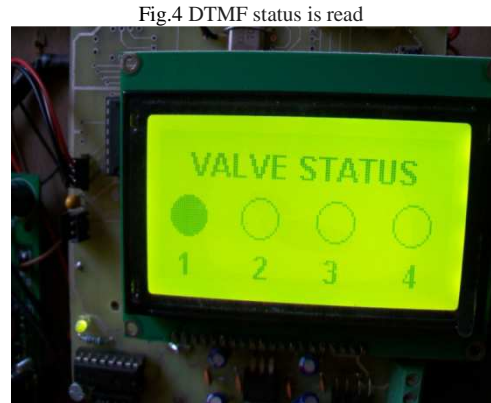


Fig.4 DTMF status is read



Fig.5 image of valve status is displayed.

Fig.6 SMS is sent regarding status of valves and water level

5. LIMITATIONS

1. In this project we have planned to use EEPROM to store the data, which increases the hardware interface.
2. Flow rate to each area will reduce with the increasing number of areas.

6. FUTURE SCOPE

1. This project when developed on a larger scale can be practically implemented in the Municipal Corporation of any village, town or city.

2. We can use CAN bus to transfer the data to the PC and can store the data on PC without the interface of EEPROM.
3. Flow meters can be used.

6. CONCLUSION

Every technology has good aspects as well bad aspects. The important thing is how we are using it. This paper discusses about the automations in the water distribution and management with technical advances. This project is automatic so it reduces lots of man power.

7. REFERENCES

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