

VOICE CONTROLLED HOME AUTOMATION

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Abstract— The paper describes Security Alert through sensors and Home devices automatically controlled with voice and password encrypted short message services-sms. The previous work in this field has limitations when it comes to the area coverage. It works in a limited radius as the Bluetooth module is used. To overcome this constrain of radius we have introduced a feasible solution- the GSM module. It works on an application that is supported by android. Along with home automation we have also tried to bring in security alert sensors that can help us know the status of LPG levels, water levels and keep a track of doors and windows. So this project looks at not only home automation but also security.

Key words- Water sensor, gas sensor (MQ-6), tactile bump.

1. INTRODUCTION

At this intersection, where there is rapid progress in the field of technology and mobile communication, it's huge impact can be felt and things have changed considerably over the course of the past years. Up to recently, home automation was mainly focused on installing systems to control the lights or other electrical and electronic appliances. Instead of having a system to support such meager functions it is important to have more significant purpose over and above the basics. This is the call of the

day with the changing times as investments, not only in the home, but also the interiors has been a factor of great importance. Having an additional system in place to provide an update to the safety and control on devices is of interest not only to the inventors but also to the users.

When compared to today, the earlier century technologies are very slow and not cent percent reliable. The fast paced progress made due to the research developments in the field of mobile communication has introduced a technological leap forward in home automation.^[1]

Of similar significance to the changes in what is possible in home automation can be through the prologue of user interface. With the introduction of smart phone and tablet revolution in this area proprietary, stationary panels and control devices can be phased out, being replaced by apps, which are easy to operate, to maintain, and to upgrade.^[2]

The possibility of monitoring and controlling various devices in your home by using your voice as the command, and the network or a variety of other interfaces, is our endeavor. It enables us to use a web browser to log on to our home and control lights, appliances, audio, video, security settings, all from one app!^[3]

The project Voice Controlled Home Automation is a step ahead in the field of automation at home where apart from other functions the GSM is an added feature where the distance is no constrain and the appliances can be controlled from a long distance. Along with appliances a regular check can be maintained not only on the doors and windows but also on the LPG levels and water levels.

2. OBJECTIVE

1. To make everything in the house automatically controlled using technology and perform the jobs that we do normally manually.^{[1][2]}
2. To connect all of the systems and devices to a central system so that they can be controlled from anywhere and respond to one another.
3. To control appliances through voice and also through SMS.^[3]

3. PROPOSED SYSTEM

Security, Automation and Remote Control- Once a home has adopted this system the Security works on sensors. The sensors detect discrepancies if any. For example the level of water in the house rises due to a tap left on, the sensors get activated and through the sensors the owner receives a notification on the app if within range or receives a sms ,if beyond the Bluetooth range, indicating the same.

Secondly through automation one can schedule events for the devices on the network. The programming may include time-related commands, such as having your lights turn on or turn off at definite times each day. Automation provides solutions that can make life better.

Thirdly home appliances can be controlled through the app where a person on his way back home can command through the app and can schedule the time that air conditioners are on before he reaches home. This all and more is possible due to the use of smart phones and tablets.

Monitoring apps can provide a all the required information about your home, right from now to a detailed history of as to what has happened up to now. One can check one's security system's status, whether the lights are on, whether the doors and windows are locked etc. With home automation system, one can virtually know what's going on in one's home while one is away.

Even simple notifications can be used to perform many significant errands. One can program your system in such a manner that one can receive a text message whenever one's security system registers a potential problem and with the help of smoke detector warnings to fire alarms.

The real hands-on control comes from the remote app that is supported by all android devices. Also, when one starts interacting with the home automation system one can schedule the locking and unlocking of doors, resetting the thermostat and regulate the lights, fans all from your phone, from anywhere away from ones home. With the face paced advancement in the field of smart phones the there is yet a lot that can be expected in the field of Home Automation..

4. COMPONENTS

- IC8951
- Bluetooth module HC 05
- Voltage regulator-1C7805
- Relay driver ULN 2803
- Gas sensor MQ-6
- Liquid crystal display
- GSM module

5. WORKING PROJECT

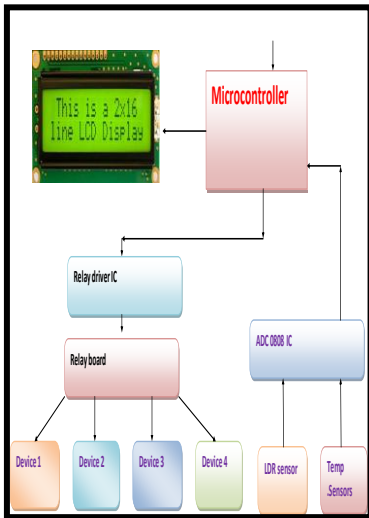


Fig.1 Block Diagram

Fig 1, the block diagram shows the major components used. The relay switch controls the devices that are plugged. Here we have the light, fan, television and airconditioner. The LED reflects the status. The GSM module and the Bluetooth module toggle every 30 seconds. This enables the usage of app and sms service at any given time as per users convenience. Fig. 2 shows the screenshot of the app.



Fig 2 . Screenshot of the app

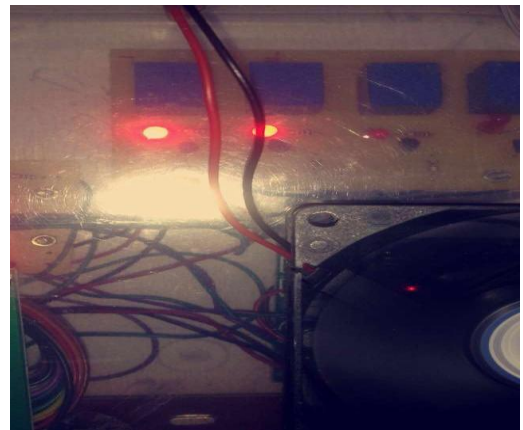


Fig. 3 Actual working of fan and light

Fig 3, shows the 2 LED's glowing indicating the fan and light is ON.



Fig.4 Security sensors

Fig 4 shows the sensors- in order from left to right-water sensor, gas sensor, window switch and door switch

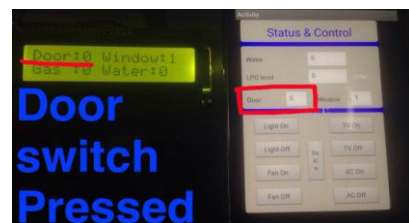


Fig. 5

6. RESULT AND CONCLUSION

This app can be practically applied in home, especially in the metros as there, most of the members are out of the house through the day either for work or studies. The installation of this system and getting connected through the android app can let the people stay away from homes without any tension. This is because not only they are sure that the appliances are off but also that there is no one vandalizing their doors or windows.

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