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# Home Automation System Using GSM Model

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**ABSTRACT:** Home automation makes it possible for all electronic appliances in our home. To be easily accessed and effectively controlled by user from remote locations. This means that you can turn your light on from the other room. Change the channel on your tv without getting up turn on the AC when it gets hot and turn it off when it cools off and so on. This not only save time and effort but also reduce the risk of mistakes causing fires and electronic shocks. There are different types of home automation systems are available in the market. Each type has its own advantages and disadvantages affective for short distances 100 miters maximum. Today we will be discussing about the best way of home automation using GSM module. This is possible because GSM module work on the same technology as the mobile network which can be used to send and receive signals across the world.

**KEYWORDS :** Arduinio Uno , GSM Module , Four Channel Relay Module, Mobile Phone

## I. INTRODUCTION

We are within the midst of an era where the technology has solved most of our problems. The event of digital information has led to the rapid change in human life-style. The employment of electricity is extremely important mutually of the most sources energy that's vital in modern lives today. With depleting resources there has been changing and as a result new approach are being developed for easier and safer control of electrical devices for more efficient power management at homes and at work places. The purposed home automation system allows user to manage any home appliances from remote locations. Its possible only due to the GSM module. The concept behind this method is to only send and receive message from mobile so processing it to perform the required task or function. This can be most useful for people living since it allow them to remotely monitor their home appliances. The IoT architecture development with embedded systems and the integration of mobile systems within IoT applications has advanced .

## II. RELATED WORKS

**PIR sensor :**PIR sensors are used in thermal sensing applications, such as security and motion detection. They are commonly used in security alarms, motion detection alarms, and automatic lighting applications.

**GAS Sensor :**They are commonly used to detect toxic or explosive gasses and measure gas concentration. Gas sensors are employed in factories and manufacturing facilities to identify gas leaks, and to detect smoke and carbon monoxide in homes.

**Ultrasonic sensor:** Is an electronic device that measures the distance of a target object by emitting ultrasonic sound waves, and converts the reflected sound into an electrical signal. Ultrasonic waves travel faster than the speed of audible sound.

**DC motors:** are suitable for many applications – including conveyors, turntables and others for which adjustable speed and constant or lowspeed torque are required. They also work well in dynamic braking and reversing applications, which are common in many industrial machines

### III. METHODOLOGY

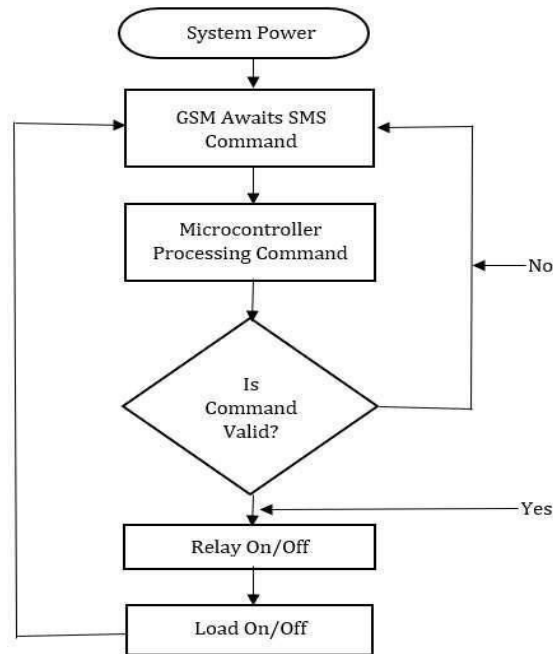


Figure : Block Diagram of System

### IV. PROPOSED SYSTEM

The purposed system is a GSM based home automation system. The home automation system suffers through many problems. Although this technique is implemented with other communicating modules like Bluetooth module, wi-fi module etc. but they need range limitation but GSM based system allow the user to manage the device from any a part of the globe providing he should apply. The system may be controlled through transportable this is often a really good feature as we are able to reach the system anywhere. The system also will help to cut back the electricity bill. The system will have the flexibility to regulate the light, AC, heat, CCTV etc. this can be possible by sending the command to the corresponding appliances through SMS. The system development involves implementing the hardware modules such as GSM module.

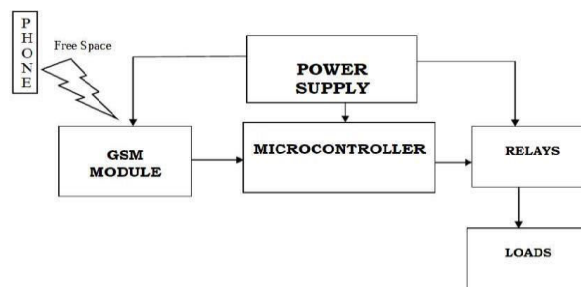


Figure 2: Architecture of System

### V. IMPLEMENTATION AND RESULT

The GSM module home automation system consist of an Arduino uno as a controller SIM900 as an SMS gateway The system function supported the set of instructions or message sent through a smartphone via SMS gateway to the Arduino uno microcontroller . Hence the Arduino uno further interact , extracts processed and controls the relay switching unit supported the user defined instruction inform of a string of knowledge to either activate or off the household appliances and devices.

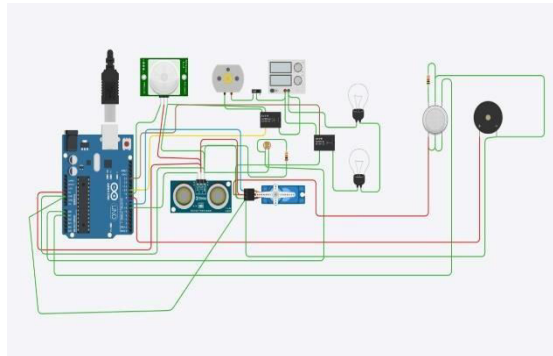


Figure 3: Implimentation Diagram

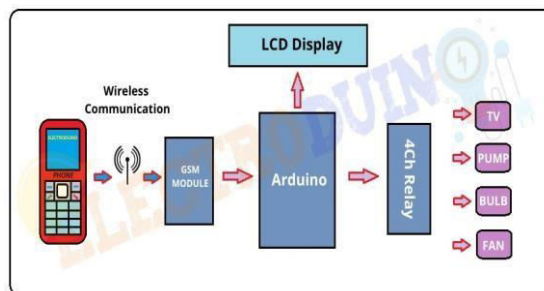


Figure 4: LCD Display

We send SMS like “#light on\*”, “#light off\*” from the Phone to turn ON or OFF the Light using a Relay Module. We can control electrical devices like light bulbs, motor, fan, TV, refrigerator, etc using this system..

### VI. CONCLUSION

With the rise within the consumption within the energy and population there’s good have to conserve energy in every way possible. The shortcoming to access and control the appliances from remote locations is one among the main reason for energy wastage. This thesis presents the event and implementation of a worldwide system for mobile communication based device system for electrical appliances and lighting that allows complete control of the interface on which it’s based.

### REFERENCES

- 1] Amna Eleyan, Joshua Fallon “IOT – Based Home Automation Using android application” , 2020
- 2] M.Banu Priya PG Scholar, Dr. K.E.Kannammal Professor and head “Intelligent Home Energy Management System With Load Scheduling And Remote Monitoring Using IOT”,2021
- 3] Meena Kasbekar, Nida Khan, Atharva Kadam and prof. Millind Gajare “Home Automation Using IOT”,2021
- 4] B.Vidhya, Dr.S.A.Sivakumar, Dr.B.Maruti Shankar, M.Dhanajey, T.Kavin, I.J.John Bharath Kumar “Smart Home – Making IOT Happen”,2020
- 5] Kumar Sai Sankar Javvaji, Usha Rani Nelakuditi



Professor, Bhanu Prasad Dadi “IOT Based Cost Effective Home Automation And Security System”,2020

6] Thirrunavukkarasu RR, Mohan Kumar S, Praveen P, Meera Devi T, Pradeep S, Ganesh Prabhu.S “Customization in Home Automation Using IOT”.



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