A

PROJECT SYNOPSIS

ON

***“ INTELLIGENT WIRELESS HOME***

***AUTOMATION AND SECURITY ”***



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PROJECT GUIDE

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* ***INTRODUCTION:***

As the human life becomes faster and faster due to lots of work to do in the shortest time span available, it is not possible for a human being to pay a personal attention towards the things of which he/she is surrounded. Therefore the concept of the automation comes into picture. Today, security is mandatory not just for the sensitive areas but for residences also. Hence we are combining these two system in to one system.

So, we are including in our economical project certain parameters of the daily life. So, that our dream house will be fully hazzardfree and it will be joyful to us.

In this economical project the user of the system get notification after the entry of new mail into the mailbox, Gas in the kitchen if gets leaked, So we can detect by using LPG-Gas sensor. We are including temperature sensor. So, we will be fully aware of fire breaks and it will be overcome on time and PIR sensor to sense any moment to the highly sensitive areas, That will give the notification to the user to take respective steps for that. If any default takes in the system or any new acknowledge gets to the micro-controller, then buzzer/alarm will be activated and users get acknowledgement about the default.

Simultaneously, we are also controlling some of the appliances, which is used in our daily life like lighting of house, fans and water level in the tank. And gets the acknowledge about the gas shortage in house.

So, to complete our project, we are using microcontroller unit (80C51/89C52), temperature sensor (LM-35), Gas sensor (MQ\_6), connectors (MAX-32) Water level detector , PIR sensor , for wireless communication GSM modem , Analog To Digital converter , for displaying status of appliances we use LCD display , Relay drive circuit for driving relay and Relays.

Every time we gets the acknowledgement about appliances by three way displaying status on the LCD display, Alarming the buzzer and sending the SMS on to the users mobile handsets. From that notifications users can takes respective actions.

* RELAVANCE:

Previously, the system present was either Home-Automation or Home Security systems there, but we are combining the both of these systems in one system, which is economically affordable to a common man .

Presently available Home automation systems or a security system is not a reliable systems, these system consists of large circuits and bulky equipments with complex Embedded systems. These are too much costly, people have to buy two different units for complete home automation and security systems or either they have to use man power instead.

In our GSM based home automation and security system, we are replacing two bulkier Systems with one small units, that will reduce costs, provide better reliability and gives all the, Updates to all members of the users family at a time using mailbox and GSM mobile .so, it Will be accessible to a common man and he will be enjoy his life with less worries about his family ,he can keep his belongings safe while staying far from his beloved family. so, this system keeps a step ahead towards tense free environments in this very fast and cut throat Era.

Also one can save his valuable time and spending on man power by employing this Systems.

We can also save our money from spending it on security by using this system, will secured his family too, his house will be equipped with automated security systems and thus life will be secured.

Every time user will not see the display , hence for acknowledge of the any system which are presents in the home. We are using the buzzer/alarm for that acknowledgement. When any problem created in the system alarm alert the users which are presents in the home, Hence buzzer/alarm performs main task in the system.

* ***SYSTEM ANALYSIS :***

In the GSM based home automation systems ,we use the microcontroller Which acts as a heart of the system , here we use the four to five different types of Sensors like temperature sensors (LM35), for temperature sensing ,LPG gas sensors (MQ6)to Sense gas leakage , water level detector in the tank for detecting level of water in the tank and use the PIR sensor for detecting any movement in the house , when we are not in the house .

These sensors are connected to ADC, we are also using the signal conditioning circuits.

This ADC is used to connect between the microcontroller and sensors which are analog, PIR sensor are connected directly to the microcontroller. Here we use the MAX-232Connectors for connecting the microcontroller with the GSM modem.

We are also using the buzzer/alarm in the system for acknowledge any problem creates in appliances, Which are connected to the micro- controller.

GSM modem Gives the status updates to our GSM handsets , and using relay driver circuits , we controls the many home appliances just like the on/off of a light systems, fans And also water valves , we are using one LCD display which will be attached to the Microcontroller , it will gives all the updates and detailed status about all equipments And also GSM modem attached to the system sends all updates through the SMS to the users , Hence we are whenever, wherever either in the home or outside the home , we Will gets all the status about the home automatically.

* ***BLOCK DIAGRAM :***

**BUZZER/ALARM**

**DRIVER CKT**

**WATER VALVE**

**GAS LEVEL IN GAS**

**FAN**

**LIGHTING**

**RELAY 1**

**RELAY 4**

**RELAY 3**

**RELAY 2**

**RELAY DRIVER CRICKET**

**GSM MODEM**

**LCD DISPLAY**

**A**

**D**

**C**

**MAX 232**

**S/C**

**LPG SENSOR**

**MICRO-**

**CONTROLLER**

**TEMP SENSOR**

**SE**

**MAIL-SONSOR**

**PIR SENSOR**

**S/C**

* ***Proposed methodology:***

The GSM based Home automation and Security system consists of LM-35 sensor for temperature detection, it will sense the increase or decrease in the normal temperature, which is precision integrated circuits temperature sensor whose voltage is Linearly proportional to the Celsius temperature having accuracy 1/4degree Celsius And it ranges from -55 to 150 degree Celsius, as well as low output impedance MQ-6 gas detectors are used for the sensing the LPG gas leakage in the house. It is highly sensitive to LPG, isobutene, Propane and moderately sensitive to the alcohol and smoke detections. Hence we can avoid any accidents like sudden fire breaks, Short circuits in the home wiring etc.

We are also using mail box and PIR sensor, these are digital sensor , which gives time to time updates and any unknown movements during family outside staying. These are connected to the microcontroller directly for giving up to dates information.

The analog sensors are not directly connected , so we are using another devise signal Conditioning which interface to ADC , whose output is digital. This digital output is then is given to the microcontroller. After getting the information from the every Sensors, it will be displayed on the LCD display connected to the microcontroller . And the massage will also be sent to the user’s mobile handsets. For above working We are using GSM modem. To connect GSM modem we are using MAX-232 connector, so that we can get the information to the user’s handsets.

We are also use the buzzer/alarm in the system for acknowledge any problem creates in appliances, Which are connected to the micro- controller.

By using relay driver circuits we can control the home appliances like lights inside the house and many more applications of the house by sending the SMS to the GSMmodem ,this SMS is received by the GSM modem and further send to the microcontroller for analysis, and depending upon the instructions Appliances will be operated, here micro-controllers acts as the heart of the whole systems.

* ***Components used:***

1. Microcontroller -89C52/80C51

2. Temperature sensor LM-35

3. LPG gas sensor -MQ-6

4. PIR –sensor

5. Mail box sensor

6. Switching circuits

7. Analog to Digital converter

8. LCD display

9. MAX-232 connectors

10. GSM modems

11. Relay Driver CKT’s

12. Relays

* ***ADVANTAGES :***

1. We can get all the status about home appliances on users GSM mobile

handset.

1. It is economical system , Hence common people can takes the advantage

of that system.

1. It is not necessary every time to check present working condition of every

appliances, it’s user friendly.

1. It is best control of home appliances, giving the command through SMS

by using Mobile handset.

1. Using this system we can provide best security to our home.
2. Using this system we can save the Energy, Time and Money for features

life.

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