HOME AUTOMATION USING GSM-GPRS PROBOT

Prachi Sonkesria psonkesria@gmail.com
Shreya shreyadwivedi1122@gmail.com
Pooja Kadam kadamp432@gmail.com
Mitali Gulave mitaligulave@gmail.com

Students, Department of Computer Engineering
SKN Sinhgad Institute of Technology, Lonavala, MS, India

Abstract - Our home automation system consists of a microcontroller PIC18F, fire sensor, gas leakage sensor, intrusion sensor and GSM modem. There are several objectives that must be achieved in the development of this project, which are to develop the fire alarm detection system for the domestic user and to detect gas leaks. In addition, this project provides a guide for implementing and applying an ANDROID application that interprets the message that a mobile device receives about a possible intrusion and then a response. SMS that is useful to make the owner aware of the possible intrusion. At a distance, the system also allows the home owner to control and control appliances via mobile phone by sending commands in the form of SMS messages and receiving the state of the appliances as well.

Key Words: **Gas leakage sensor, PIC18F Microcontroller Fire sensor, Intruder sensor, GSM Modem, Short Message Service**

INTRODUCTION

Home automation is becoming a hot topic in today's society. There are so many applications that exploit the use of the GSM / GPRS facility of the phone. This document discusses an approach in which an authorized remote remote user receives an SMS when a third party attempts to enter their home. This document also focuses on fire detection. For the purpose of fire detection we will use the built-in fire sensor with PIC18F452 microcontroller. This fire sensor is used in this project to detect the temperature of the heat in the range above 50 degrees Celsius. Apart from this (check intrusion detection appliances, fire detection) which includes detection of gas leaks. For the purpose of gas leakage detection uses the built-in LPG sensor with PIC18F452.

HARDWARE

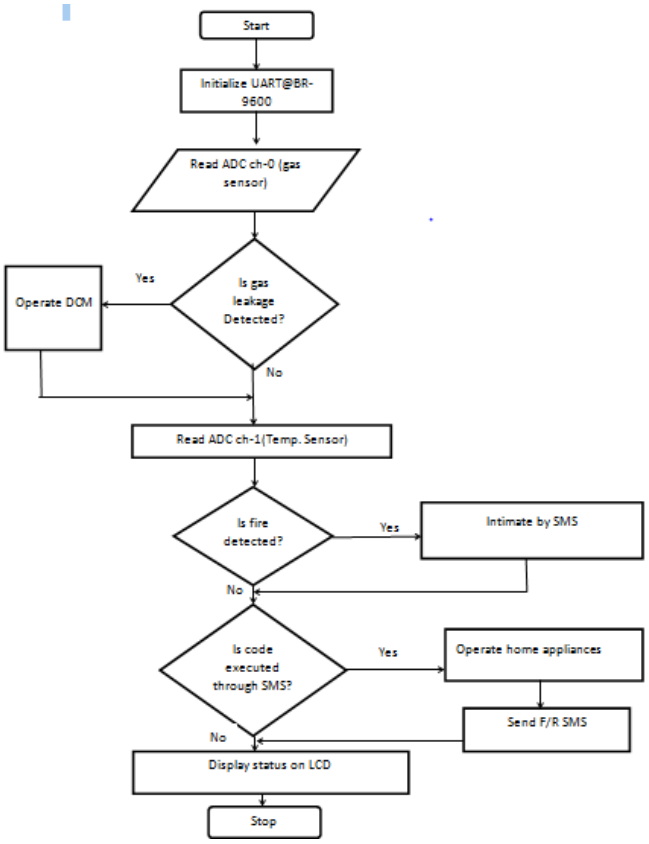
In our project, the GSM modem is used to intimate to authorize the person when someone is in critical situation. If a person is in a state of emergency, then the machine will repeatedly get alert for the use of this time. The GSM modem is interconnected with the PIC18F52 microcontroller which has incorporated numerous capabilities consisting of UART, SPI, PWM, I2C and so on. We can control the devices like fan, blub, AC etc. The relay is interconnected to the regulator, depending on the input pin of the relay, we can control the devices like BLUB ON, FAN EN and vice versa. In order to control the AC devices we prefer relay. It consists of 5 pins, namely VCC, GND, NC, NO and COM pin. The first two pins are the power pins and the remaining pins are control pins. Using these bolts we can control the devices.

PIC18F452 Microcontroller:

This device consists of 28-pin and 40/44-pin packages. The 28-pin devices do not have a Parallel Slave Port (PSP) implemented and the number of Analog-to- Digital (A/D) converter input channels is reduced to 5.It has 40MHz operating frequency .The PIC18f452 is a high performance enhanced flash micro controller .It is featured with 'C' compiler friendly development environment,256 bytes of EEPROM, self-programming ,an ICD,2 capture/compare/PWM functions,8 channels of 10-bit Analog-to-Digital (A/D) converter ,the synchronous serial port can be configured as either 3-wire serial peripheral interface or 2-wire inter-integrated circuit bus. All of these features make it ideal for manufacturing equipment, instrumentation and monitoring, data acquisition, power conditioning, environmental monitoring, telecom and consumer audio/video applications.

WORKING DESCRIPTION

The aim of the project is to control the home appliances with respective commands through GSM-GPRS technology. When a person want to control the devices such as light, blub then he needs to give a certain command to the system then the corresponding command will control the appliances. For example, let us consider a person sends SMS like BLUB ON then automatically corresponding device will glow ON and vice versa. Similarly, the person needs to send SMS like LIGHT ON then automatically corresponding device will glow ON and vice versa. Hence in this way we can control the appliances depending upon user requirements. Depending upon input of user the system can automatically control the devices i.e. Device ON /OFF.



CONCLUSION

This article investigates how to build a home automation system based on the microcontroller GSM and PIC18F452. The ANDROID Application Package File (APK) has been deployed on ANDROID-enabled mobile devices and has been tested. Built-in DC motor with PIC18F452 microcontroller to detect intrusion. In case of interruption, the GSM modem successfully sends SMS to the ANDROID application installed on the mobile device. The fire sensor, LPG sensor and relay are deployed for fire detection, LPG leak detection and appliance control, respectively.

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BIOGRAPHIES

Prachi Sonkesria is pursuing B.E.(Computer Engg.),SKNSITS, Savitribai Phule Pune University, Lonavla, MS, India.

Shreya is pursuing B.E. (Computer Engg.), SKNSITS, Savitribai Phule Pune University, Lonavla, MS, India.

Mitali Gulave is pursuing B.E.(Computer Engg.),SKNSITS , Savitribai Phule Pune University, Lonavla, MS, India.

Pooja Kadam is pursuing B.E.(Computer Engg.),SKNSITS , Savitribai Phule Pune University, Lonavla, MS, India.