



Voice Recognition Home Automation System Based On ARM 11

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ABSTRACT: The smart home automation system is a voice recognition based application that allows user to control household appliances. The Voice Recognition Home Automation System is based on an ARM LPC1769. The sensors used in the system are temperature sensor, passive infrared (PIR) sensor, humidity sensor. The entire system is controlled from a microphone which is connected with Microsoft distant speech recognition (DSR). Microsoft distant speech recognition (DSR) is used in smart home automation system. The smart home automation system is most suitable for the elderly and the disabled persons especially those who live alone and since recognize voice so it is secure.

KEYWORDS: Home automation, ARM 11, Voice Recognition, Power Supply, PIR Sensor.

I. INTRODUCTION

This Project 'Voice Recognition Home Automation System' is based on an ARM LPC1769 operates at CPU frequencies of up to 120 MHz and includes up to 64kB of data memory, up to 512kB of Flash memory. This system is an integrated system to facilitate elderly and disabled people with an easy-to-use home automation system that can be fully operated based on speech commands. The system is portable and constructed in a way that is easy to install, configure, run and maintain.

The entire system is controlled from a microphone which is connected with Microsoft distant speech recognition (DSR) unit. This chip sends the voice commands in binary sequence to controller. The sensors used in the system are temperature sensor, passive infrared (PIR) sensor, humidity sensor.

II. LITERATURE SURVEY

1) Java-Based Home Automation System

The design is based on a standalone embedded system board integrated into a PC-based server at home. The home appliances are connected to the input/output ports of the embedded system board and their status are passed to the server. The monitoring and control software engine is based on the combination of Java Server Pages, JavaBeans, and Interactive C. The home appliances can be monitored and controlled locally via the embedded system board, or remotely through a web browser from anywhere in the world provided that an Internet access is available. The system is scalable and allows multi-vendor appliances to be added with no major changes to its core. Password protection is used to block unauthorized users from accessing the appliances at home. If the Internet connection is down or the server is not up, the embedded system board still can control and operate the appliances locally [1]

2) Design and Implementation of Home Automation System

This paper presents design and implementation of remote control system by means of GSM cellular communication network. The design integrates the device to be controlled, the micro-controller and the GSM module so that it can be used for a wide range of applications. Detailed description and implementation of each design element are presented. To verify the principle operation of the M2M design, two home applications are experimentally tested using PC-based environment [2]

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3) An Internet Based Wireless Home Automation System for Multifunctional Devices`

In this paper, the design and implementation of a low cost but yet flexible and secure internet based home automation system. The communication between the devices is wireless. The protocol between the units in the design is enhanced to be suitable foremost of the appliances. The system is designed to be low cost and flexible with the increasing variety of devices to be controlled. [3]

III. BLOCK DIAGRAM

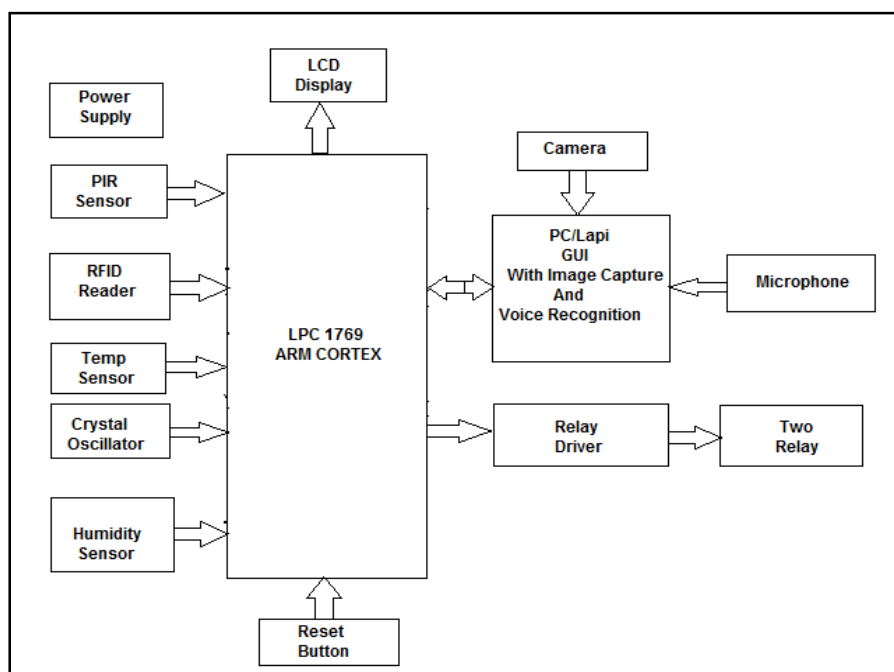


Figure.1 block diagram of smart home automation system

The block diagram consist of ARM LPC1769, Power Supply, relay driver, temp sensor, humidity sensor, PIR sensor, RFID reader, camera, microphone, LCD Display, Crystal oscillator .The entire system is controlled from a microphone which is connected with Microsoft distant speech recognition(DSR) unit.

IV. RESULT

1. Display temperature and humidity on LCD.
2. Speech to text conversion use in .NET (dot net) programming and MATLAB software .
3. Use microphone to speech 'house' as a password.
4. RFID card can passes if it is valid person then it open and lock the door.
5. RFID card can passes if it is invalid person then it capture the image and stored as a intruder.
6. Control household appliances like lamp, diva.
7. To speck lamp as lamp ON and OFF.
8. To speck diva as diva ON and OFF.

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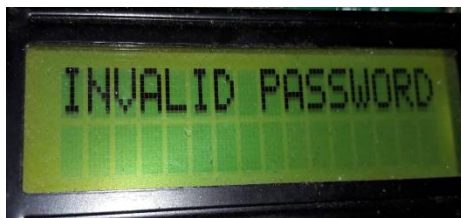
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1. Display temperature and humidity on LCD



2. Valid person open and lock the door



3. Invalid person then display invalid password



4. Intruder image



4. Device 1 lamp ON



6. Device 2 diva ON

V. CONCLUSION

This project is done by ARM LPC1769 which helps in easy programming in DOT NET (.net) and MATLAB. An automated home system is very useful tool in present times.

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