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RASPBERRY PI BASED HOME AUTOMATION SYSTEM THROUGH INTERNET OF THINGS

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ABSTRACT

This paper focus on design of IOT based home automation system using raspberry pi. It is necessary to control the home from desired location. Home automation is the control of electronic device in our home and office, whether we are there or away. Home automation provides the user with web page control of appliances within their home. This system is design to be low cost and expandable allowing a variety of devices to be control. Home automation and benefits focusing on how this can be achieve through the use of raspberry pi.

Keyword:-Android based, IOT, Raspberry pi, Webpage.

I.INTRODUCTION

Home automation is the application of computer and information technology for control home appliances. In home automation we can control all the devices in a home so that perform functions like switch ON and OFF. Raspberry pi is the processing unit because of its user friendly features. Python coded algorithm fed into raspberry pi.

The internet of things (IOT) is scenario in which objects, animals, or people are provided with unique identifier and the ability to automatically transfer data over network requiring human-to-human or human-to-computer interaction. Automation is use of the electricity and water and reduces the wastage. This home automation system used in several places like banks, hospital, labs and other automated system. The main reason to develop this system is to save the time and man power with maintaining security.

II.BLOCK DIAGRAM

Applications of home automation system is given below

1) Water management
2) Security
3) According with change in temperature control the speed of fan

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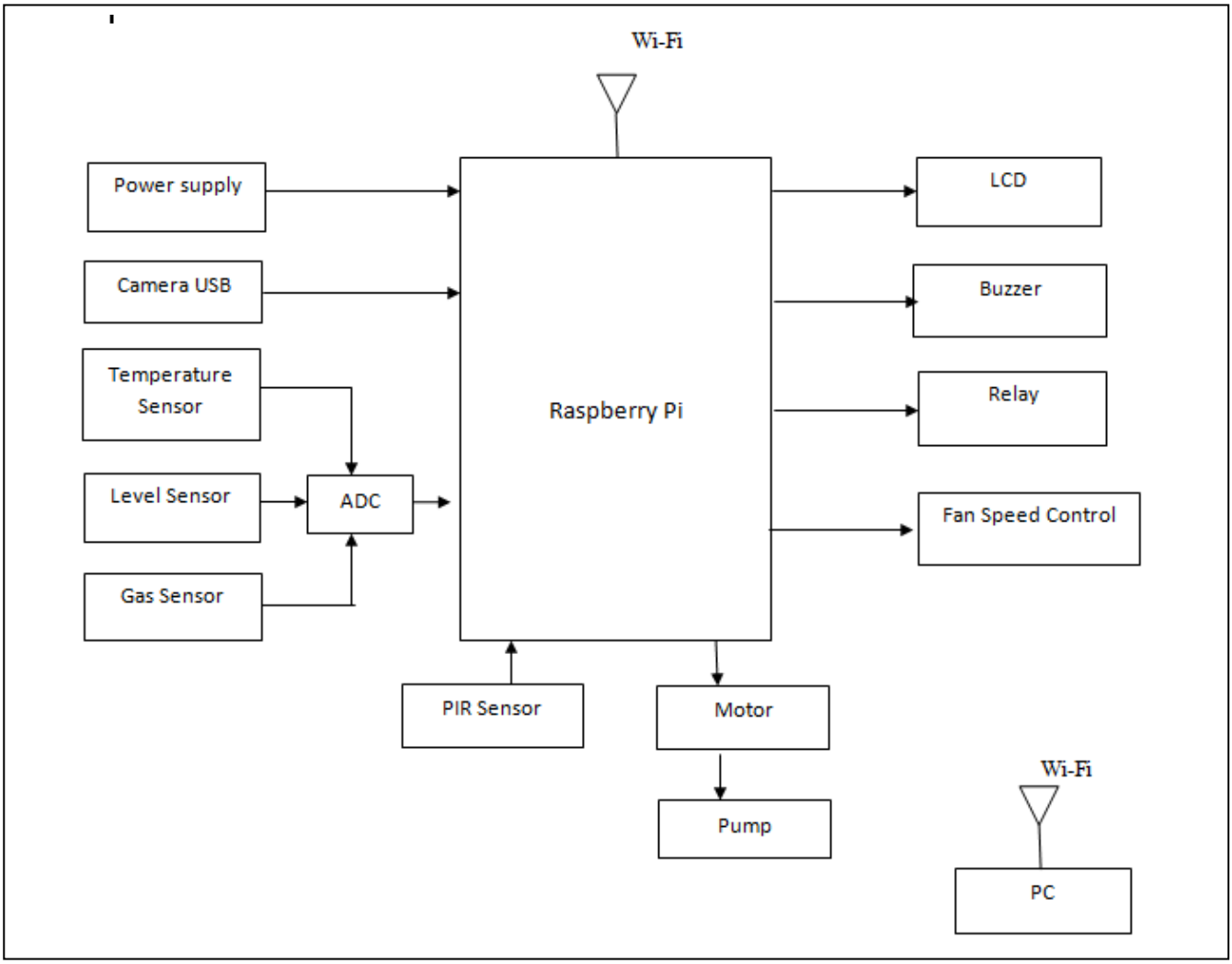

Figure 1: Block Diagram of Home Automation System

Fig.1 shows block diagram of Raspberry Pi based home automation system through internet of things. Raspberry Pi is an open source hardware technology combined with a programming language and an Integrated Development Environment (IDE). The three sensors sense the physical experience and convert it into stream info data. Raspberry Pi sensor network are used for sensing and monitoring while raspberry is collecting the data and monitoring the data at the same time. By using this data it will manage the output device. Temperature sensor is a device to measure temperature through an electrical signal. Here we set the temperature 37 degree Celsius, if the temperature goes high above 37 degree, then automatically fan will on.

Level sensor detects the level of liquid and other fluid. We set the specified water level range; if the water level goes above this specified range then motor will automatically off. PIR sensor detects changes in the amount of infrared radiation impinging upon it, which varies depending on the temperature and surface characteristics of the objects in front of the sensor. When any object, such as a human, passes in front of the background, the

temperature at the point in the sensor will rise from room temperature to body temperature, and then back again. The sensor converts the resulting change in the incoming infrared radiation into a change in the output voltage. These sensors also capture the image of any object such as human and send it to the user. Gas sensor sense the smell of the gas leakage and then buzzer starts ringing.

III.EXPERIMENTAL SETUP

Figure2 Experimental setup of home automation system

IV.CONCLUSION

This idea is based on the new device which provides flexibility and high economy for home automation solutions in our daily life. Because nowadays the users are scared about the technology. The users don't want "something more", but they prefer "something known" with some "intelligence". The best solution is the automation of home through the internet of things.

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