CMR COLLEGE OF ENGINEERING & TECHNOLOGY

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Home Automation

**Abstract**

With advancement of Automation technology, life is getting simpler and easier in all aspects. In today’s world Automatic systems are being preferred over manual system. With the rapid increase in the number of users of internet over the past decade has made Internet a part and parcel of life, and IoT is the latest and emerging internet technology. Internet of things is a growing network of everyday object-from industrial machine to consumer goods that can share information and complete tasks while you are busy with other activities. Wireless Home Automation system(WHAS) using IoT is a system that uses computers or mobile devices to control basic home functions and features automatically through internet from anywhere around the world, an automated home is sometimes called a smart home. It is meant to save the electric power and human energy. The home automation system differs from other system by allowing the user to operate the system from anywhere around the world through internet connection.

In this project we present a Home Automation system(HAS) using Arduino Board that employs the integration of cloud networking, wireless communication, to provide the user with remote control of various lights, fans, and appliances within their home and storing the data in the cloud. The system will automatically change on the basis of sensors’ data. This system is designed to be low cost and expandable allowing a variety of devices to be controlled.

**Components**

**Hardware Requirements**

* Arduino Board & Cable
* Breadboard
* Ultrasonic sensor
* Temperature sensor
* Relays
* LCD
* ESP-8266
* Baseboard
* Buzzer
* LED’s
* Switch
* Connecting wires
* Bulb holder & Bulb

**Software Requirements**

* Arduino IDE
* Embedded C/C++
* Things Speak

**Pictorial Representation (Flow of Data)**

LCD

Sensor (Buzzer)

Temperature Sensor

ESP-8266 (Wi-Fi module)

**Arduino Board**

Ultrasonic Sensor

Mobile Application

Cloud

**Procedure**

This project is about Home Automation where home AC devices are controlled or operated, monitored through a Mobile application. The set of connected sensors that collects data from the environment and sends it to the Arduino Board for further processing are timely uploaded to the cloud through ESP-8266(Wi-Fi module). Then based on the sensor results the AC devices at home are triggered on/off. The devices can be easily controlled from anywhere.

The Arduino Board act as a microcontroller to process the information from sensors. The code written in Arduino IDE is dumped onto the microcontroller.

Then the data can be monitored online in Things Speak account using Field labels.

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