SYNOPSIS

ON

Smart Home

Submitted by:

Aman Singh(171500036)

Akash Chaudhary(171500026)

Course: B.tech

Branch: CSE

Section : C

Submitted To:

Mr. Amir Khan -

Technical Trainer

INTRODUCTION

While the cost of living is going up, there is a growing focus to involve technology to lower those prices. With this in mind the Smart Home project allows the user to build and maintain a house that is smart enough to keep energy levels down while providing more automated applications. A smart home will take advantage of its environment and allow seamless control whether the user is present or away. With a home that has this advantage, you can know that your home is performing at its best in energy performance. A low cost and efficient smart home system is presented here. This system has two main modules: the hardware interface module and the software communication module. At the heart of this system is the Arduino UNO microcontroller which is also capable of functioning as a micro web server and the interface for all the hardware modules. All communication and controls in this system pass through the microcontroller. The smart home system offers feature such as environmental monitoring using the temperature, humidity, gas and smoke sensors. It also offers switching functionalities to control lighting ,fans/air conditioners, and other home appliances connected to the relay system. Another feature of this system is the intrusion detection which it offers using the motion sensor and all these can be controlled from the Android Smartphone app.

EXISTING SYSTEM

The Existing system based on with the GSM Module & Bluetooth Module only. The recent developments in technology which permit the Use of Bluetooth and Wi-Fi have enabled different devices to have capabilities of connecting with each other. In this system we can control our all electronic equipments through our cell phone .But this system does not has the smart sence .We can produce the smart sence by using various sensors.

PROPOSED SYSTEM

Our proposed system is an arduino based home automation done with Arduino connected to a wifi and controlled via android app. This system deals with the safety in home and smart home technologies which will be cost efficient. Arduino can sense the surroundings by receiving input signal from a variety of sensors and can affect its environment via actuators. The Passive Infra-Red (PIR) sensors allow one to sense motion, almost always and are used to detect whether a human has moved in orout of the sensors range. The PIR sensor is a pyroelectric device thatdetects motion by measuring changes in the infrared level emitted by surrounding objects.

USES OF THE PROJECT

1. Heating, ventilation and air conditioning: it is possible to have remote control of all home energy monitors over the internet incorporating a simple and friendly user interface.

2. Lighting control system: we can control our lights by using our cell phone.

3. Automatic warning system when anyone tries to enter in the home without admin's permission.

4. Counts no. of persons entered in the house.

FUNCTIONAL SPECIFICATION

1. We can control our all lights through using our android cell phone.
2. It will give you the count of persons entered in the room
3. Rain detection system
4. Smart security system

SOFTWARE SPECIFICATION

1. Technology Implemented: IoT
2. Language Used: Embedded C
3. User Interface: Android Application

HARDWARE REQUIREMENTS

1. Arduino
2. Wifi module
3. Connecting wires
4. Power sourse
5. Resistance
6. Bread Board
7. PIR sensor
8. Rain sensor
9. Multi coloured LED lights

FUTURE SCOPE

Future scope for the home automation systems involves making homes even smarter. Homes can be interfaced with sensors including motion sensors, light sensors and temperature sensors and provide automated toggling of devices based on conditions. More energy can be conserved by ensuring occupation of the house before turning on devices and checking brightness and turning off lights if not necessary. The system can be integrated closely with home security solutions to allow greater control and safety for home owners. The next step would be to extend this system to automate a large scale environment, such as offices and factories. Home Automation offers a global standard for interoperable products. Standardization enables smart homes that can control appliances, lighting, environment, energy management and security as well as the expandability to connect with other networks.