IOT BASED HOME AUTOMATION

Contents:

Abstract:

- As people paying more and more attention to environmental quality, the application of Internet of Things in indoor environment monitoring and control has become an important branch.
- In this paper we present a set of lightweight intelligent solutions for the management of computer rooms after studying the key technologies of IoT.

Introduction

- Internet of things, IoT, as an important part of the new generation of information technology, have developed rapidly both in theory and practice since proposed, and gradually derived many applications such as smart home, intelligent environmental monitoring.
- At present, remote monitoring and control for indoor environment by using the embedded technology combination of wireless sensor network to construct Internet of Things has become the development trend and research focus in the smart home.

Existing system:

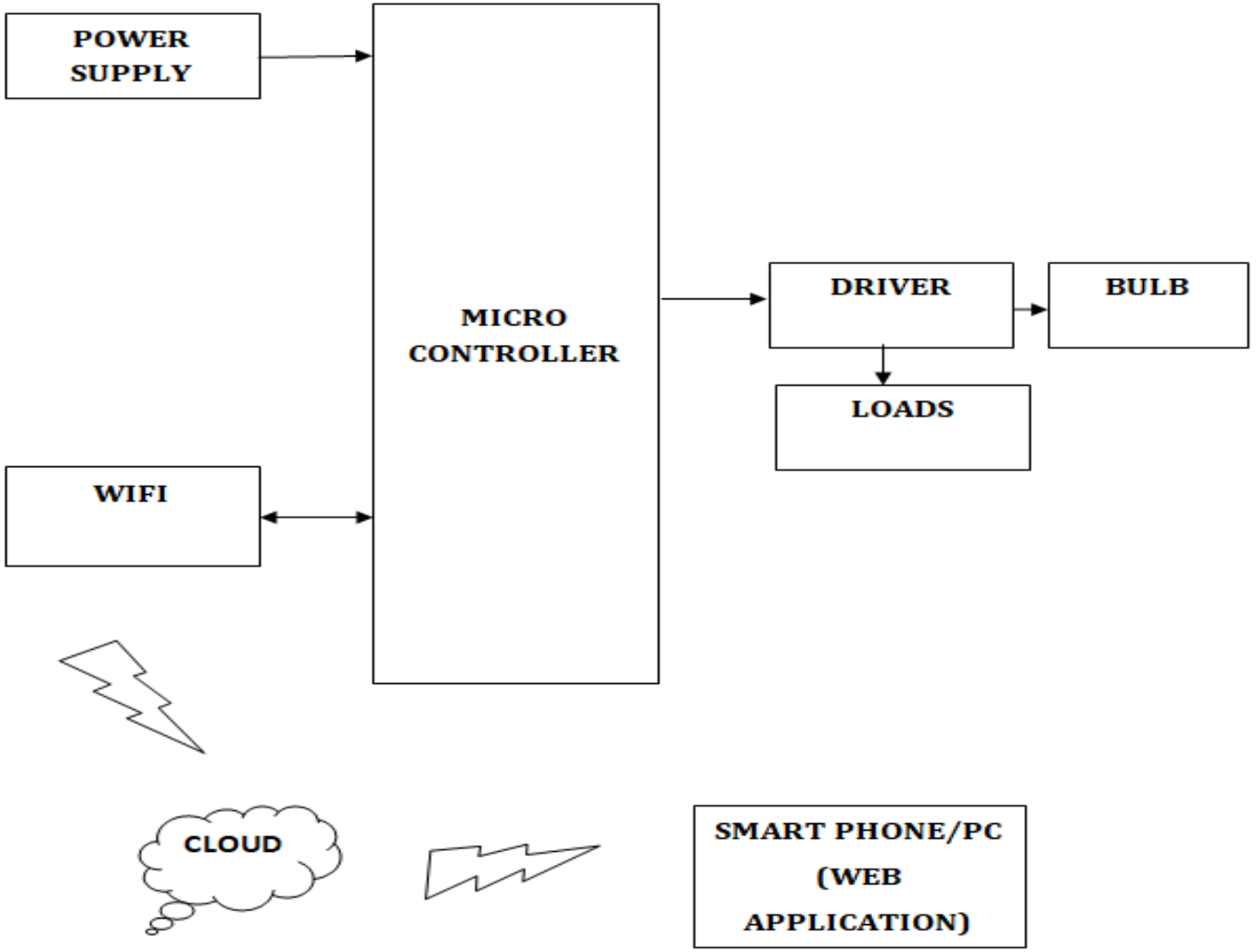
In the existing control system

- Designed a system of an intelligent switch model based on the Internet of things. The model defines the indoor environment through various sensors, uses the Zigbee wireless network to access the information gateway, and then forwards the information to the servers in the Internet.
- The project Assistive Housing was developed focusing on the elderly comfort, allowing home automation by using the television set and its regular remote control as an interface.

Proposed system:

- **The system uses Node MCU development board to obtain server communication, through the process of Raspberry Pi, controllers will make adaptive response, such as turn on the air conditioner, alarm users.**
- **The experiments demonstrates the system can be a good solution to the backwardness of current room management, especially college computer room, and provides a new application for IoT.**

Block diagram:



Software:

The programming part of the project is done by using

- C/Embedded C
- Arduino IDE

Working principle:

- Intelligent smart switch based electrical device control system as a IoT system, it is generally divided into two parts, hardware and software.
- The main task of hardware is to collect switching condition data and pass the parameters to the software.
- The software is mainly used as a user interface, receiving and analyzing parameters, and controlling the hardware to respond which consists of high voltage load (Electrical device).

Advantages

- Friendly user interface which can be extended to multiple switches or multiple loads.
- Simple and compact structure, stable and reliable.
- Automatic adjustment combined with remote control of user.
- High scalability. More switches more data, better server better control.

Future scope

- The scope of smart switch testing and control is limited, user's other requirements will possibly leading to the problems of the application of system.

- Therefore, we need to increase the system function to effectively reflect the application value of the system.