

EMACS: DESIGN AND IMPLEMENTATION OF INDOOR ENVIRONMENT MONITORING AND CONTROL SYSTEM

ABSTRACT

After more than 20 years of development, Internet of things has a lot of applications in the actual scene, which greatly facilitates people's work and life. 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. The system uses sensors to obtain environmental information, 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.

EXISTING SYSTEM

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. In recent years, the continuous expansion of colleges and universities and the social rising demands of graduates' practical abilities, not only results in a sharp increase in the amount of experimental teaching work at the, but also put forward a huge challenge to the laboratory construction and management. Especially computer labs have higher environmental requirements: equipment composition is complex, the use of time is very long, the user has uncertainty and mobility. The current backward management approach which needs special staff to control access, air conditioning and other facilities, is a great waste of manpower.

DRAWBACKS

- Cost is high.
- It is difficult to integrate with existing facilities.

PROPOSED SYSTEM

In this paper we present a set of lightweight intelligent solutions for the management of computer rooms after studying the key technologies of IoT. The system uses sensors to obtain environmental information, 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.

ADVANTAGES

- Friendly user interface which changes according to environmental.
- Simple and compact structure, stable and reliable.
- Automatic adjustment combined with remote control of user.
- High scalability. More sensors more data, better sensors better control.
- Cost is low
- It is easy to expand, for specific needs.

SYSTEM REQUIREMENTS

H/W System Configuration:-

- Processor - Pentium –IV
- RAM - 4 GB (min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse

- Monitor - SVGA

S/W System Configuration:-

- Operating System : Windows 7 or 8 32 bit
- Application Server : Tomcat5.0/6.X
- Programming Language : Java
- Java Version : JDK 1.6 and above