

Industrial Automation Using Various Applications for the Internet of Things

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Abstract

The internet of things is a network of physical object that contain embedded technology essence communicate with extrinsic environment. The industrial internet of thing is part of internet of thing that focuses on devices and object used in business setting. It helps to connect everything around you to internet including wearable devices, metering devices and environmental sensor. These devices will connect to internet to share different types of data. We have proposed Industrial Automation using cloud computing and sensing based applications for Internet of Things. In these paper we use sensing device to check different behaviour like fire, humidity, temperature of room.

Keywords: Internet, Wearable Devices, Metering Devices, Environmental Sensor.

Introduction:

IoT stands for Internet of Things. It refers to connecting devices other than computers and smartphones to the Internet. Devices in the IoT range from automobiles, kitchen appliances, alarm systems, and medical devices such as heart monitors. In this wide scope, Mobile communication skill is playing a main role in the world of modernization[4]. Basically anything that can connect to the internet. It is not traditionally considered connecting to the Internet. Smart intelligent systems include automation and security. The smart system has been smartest when the highest security system has been added on it. A smart system is highly automated system. This is called intelligent because of having a computer system to monitor the whole system and take a decision after taking corresponding signal from the sensor. A Smart intelligent industrial security system is one that has highly advanced automatic systems for controlling lighting and temperature, multimedia equipment for monitoring and activating security apparatus (alarms and alerts) associated with windows and doors and many other functions.

This system appears "intelligent" because its computer systems can monitor many aspects of daily life. It is packed with various technologies and sensors to gather information about the current status in the smart home (e.g. where is the user located, what does the occupant do, current temperature etc.) and the other hand the target of such a house is to increase the quality of life of the user. Besides protecting home against intruders, there are many advantages to investing in a home security alarm system [5][7].

Internet of things (IoT) is the network of physical devices, vehicles, buildings and other it Ems embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data. The IoT allows Objects to be sensed and controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world into computerbased systems, and resulting in improved efficiency, accuracy and economic benefit. When IoT is augmented with sensors and actuators, the technology becomes an instance of the more general class of cyber physical systems, which also encompasses technologies such as smart grids, smart homes, intelligent transportation and smart cities. Each thing is uniquely identifiable through its embedded computing system but is able to interoperate within the existing Internet infrastructure

The IOT industry protection system using Arduino is a system designed to protect industries from losses due to accidents using Internet of things. Gas leaks can lead to fires, resulting in huge production losses, and even in situations such as furnace explosions, immediate fire detection is required. In addition, poor workplace lighting can create poor working conditions, increasing the likelihood of accidents. The system uses an Arduino to achieve this function. The system uses temperature measurement in conjunction with light and gas sensors to detect fires, gas leaks and low light levels to prevent occupational accidents and prevent losses. The system consists of light, gas and temperature sensors paired with an Arduino and an LCD display. It continuously scans sensor data to log values, check for fires, gas leaks, or low light, then send the data online. The WIFI module is used to achieve the function of the Internet. The Wi-Fi module obtains the grasp from mobile phone and permits to relay circuit. As per the assumed signal from the user, the relay circuits swapped ON/OFF the respective devices. The main drive of by Wi-Fi wireless technology is to deliver a better level to variety and better feasibility [3]

CHALLENGE:

Today is the age of smartphones, so people prefer smart work. The same goes for industry. The term automation has revolutionized the industry. Some industries are fully automated while others are partially automated. In short, automation has become an important term both at home and in industry. Our project is dedicated to industrial automation. The machine can be operated manually over long distances.

NEED OF SYSTEM

Industry alert are based on manual intervention. Notification for any circumstances in Industry not provided. Appropriate action for this condition taking.

OVERVIEW OF SYSTEM

In this modern era of automation and advanced computing using IoT with Artificial Intelligence offer promising solutions towards the automation of Industry. In order to understand the development of IoT in industries, this paper reviews the current research of IoT, key enabling technologies, major IoT applications in industries, and identifies research trends and challenges. The Internet of Things allows objects to be sensed and Controlled remotely across existing network infrastructure.

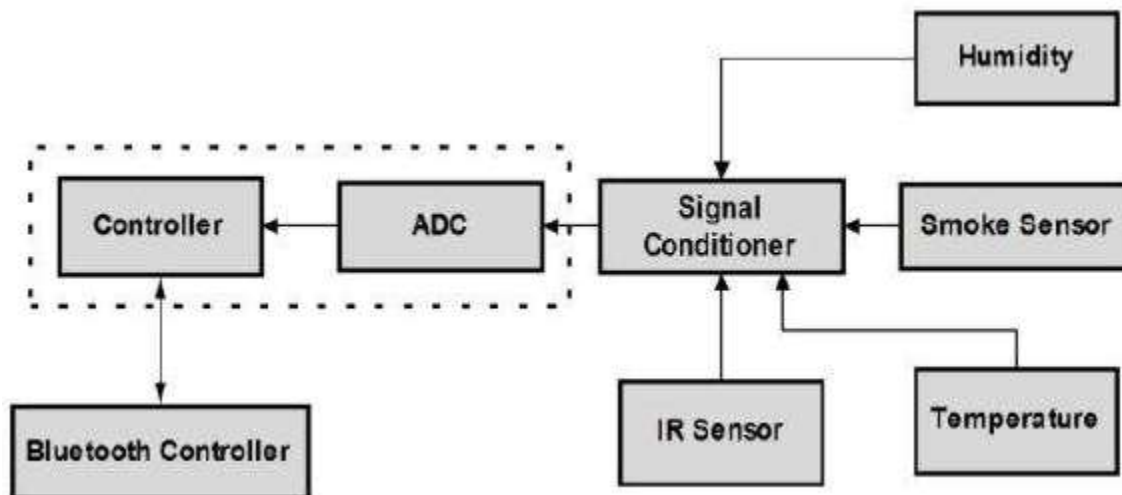


Fig. Constructor Block diagram

This is implemented as in figure1. Sensors (Temperature sensor, Pressure sensor, Humidity sensor, Vibration sensor, Intrusion sensor) are used to percept the environment and object conditions. Analog signal are provided to

android device produced by sensors. Admin set threshold to every sensors placed in Industry. Android check this threshold against incoming analog signal. When it encounter an uneven condition devices (Buzzer, Alarm, motor, fan) are use to take accurate measures such as Alarm/Alert are generated, it send messages and email to Admin. Then with the help of adequate steps to solve the problems. This can be possible through past experience and similar previous condition stored in database. In this we use cloud as database for scalability.

APPENDIX

Billions of devices are connected to the Internet and sensors. Here is a sample list of things based on the Internet of Things. one. Monitoring and control of railway tracks, ship tracking systems. 2. Air or water quality management system. 3. Earthquake or Tsunami Early Warning System. 4. Heating and air conditioning systems. 5. Entertainment and home security devices. 6. Intelligent traffic control or vehicle control system. 7. Electronic toll collection system.

Conclusion

As a complex cyber-physical system, the Internet of Things combines a variety of devices with recognition, identification, processing, communication and networking capabilities. In particular, sensors and actuators are becoming more powerful, cheaper, and smaller, and their use is becoming more common. The industry is showing great interest in deploying IoT devices to develop industrial applications such as automated monitoring, control, management, and maintenance. Due to the rapid development of technology and industrial infrastructure, IoT is expected to be widely applied in industrial fields. For example, the food industry is integrating WSN and RFID to build automated systems for tracking, monitoring, and tracing food quality along the food supply chain in order to improve food quality. This paper reviews the recent researches on IoT from the industrial perspective. We firstly introduce the background and SOA models of IoT and then discuss the fundamental technologies that might be used in IoT. Next, we introduce some key industrial applications of IoT. Afterward, we analyzed the research challenges and future trends associated with IoT

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