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Internet of Things Based Environmental Safety and Communication through Integrated Multi Sensors by Esp8266 for Industries

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ABSTRACT

The proposed work deal with the scenario that we come across in industries. The primary thing in all types of industries is safety, in this paper the concept enhanced the program based control of the parameters like heat, wateretc to be monitored at proper levels. Here the scenario has been developed in such a way that prefixed ranges of temperature, level of height, humidity level in particular place with above range prefixed crossed then they must alert us. So there will be instantaneous alert of a place. The system mainly comprises of ESP8266 which acts as a overall controller of all the sensors to sense the parameters at proper time periods. Thus the system has a proximity sensor, gas sensor, temperature sensor. A Bluetooth module share the information the information of sensor sensed parameter and send the information alert point react whether there is some sort of alert needed thus the alert given by indicating system. The results clearly shows that when the system has some response from the sensors it will immediately alert the personal with alarm and also helps to protect the industry from danger and ensure complete protection. The estimation of results shows that the temperature limit was set as 25 degrees and humidity level were monitored in detail

KEY WORDS: BLUETOOTH MODULE, ESP8266, PROXIMITY SENSOR

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INTRODUCTION

Many global industries are seeking for proper safety protection of machineries and their people. They normally require manual operating unit which is ancient piece of model. But the large scale industries usually make possible of SCADA based control which is favorable for the higher end industries. And the SCADA is quite complex in design perspective.So in order to make a module which is conventional and also simplistic in the size and cost. (Saranya A., Dinesh kumar S. (2017))

This lead to development of smart module control of the IoT platform which will have a quick response once the sensor senses the value based on the programming system which will intimate the buzzer alarm if any one of the parameter considered exceed the limit. And the display unit made up of LCD will clearly indicates the value currently recorded in sensors. (Suresh, Balaji. Anto, Jenith (2014). Hence user can clearly have better control and hence forth he will be able to monitor periodically on all sorts of danger, (Leong, 2017)

The controller should be programmed proper that it should provide not only the values sensed and time of sensing but the most important work was to alert when the range goes beyond the fixed. Safety measure are essential in All references must be without variousindustry. IoT based safety operating device is new technology that is incorporate to societal, environmental sustainability and development of new technology reduce the risk in industrial operating device.

The system developed may be useful in protection of filter design circuits. (Shajahan. A. H., Anand A. (2013)). It may be also managed to develop voltage stability in system process. Thus power sector where protection is vital it is mandatory to have the similar system in power sector also.

MATERIALS AND METHODS

EXISTINGSYSTEM

The existing system has coordination disadvantages that they are sending and receiving information was not shared properly. Especially in the case of the micro controller and ARM processors even it was based on the programming in C. Sometimes this will make some serious issues imbalance in alerting the system controlling region. Another major issue is there in the designing without any interruption in supply for control unit.

The system parameters are analyzed in the technical point of view. The most essential control in operating the device is very critical due to many boundaries. Temperature level in devices is varied based on ambient temperature and running of device cause major route case of this problem. The system is embedded with sensors. Most of the industrial safety is ensure by a safety engineers. The web server is also a major role in the system. Controller function in time of operation is also an important device.

IMPLEMENTATION

The complete module of the system is shown in block diagram (Shajahan and Anand 2013). The bluetooth module is very critical such that it make clear communication to all parts of the system based on the program embedded in the controller ESP8266. So the clear idea is to utilize all the sensors in a proper way to alert the system working in the robust.

Figure 1 clear portrays that the system is vital in guarding the accessories in any type of industries which need a safety as their primary goal. In this framework, the user can utilize the sorts of danger that can arise in their working places that will be minimized and alert them in all type of danger like temperature rise, gas discharge and also water level indication and interruption in the given place (Dinesh kumar, Praveen Daniel Senthilnathan, 2015). Also IR sensors provides guide lines towards radiation intervention in the place, The information which we have displayed in LCD can also be viewed by means of the simple software which can have message alert in it.

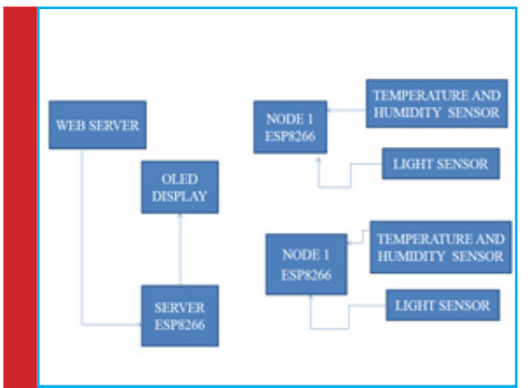

Figure 1. Proposed System

By sending a character from our mobile phone we can monitor the appliances in industry.

1. Temperature sensor
2. Gassensor
3. IRsensor
4. Bluetooth
5. Water level sensor
6. GPRS
7. LDR

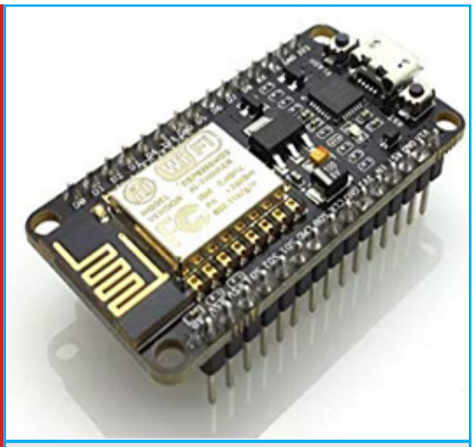

Figure 2. UNO Board

RESULT AND DISCUSSION

Figure 3 Gives a clear clarity on sensor monitoring the humidity and temperature measurement at nominal level.

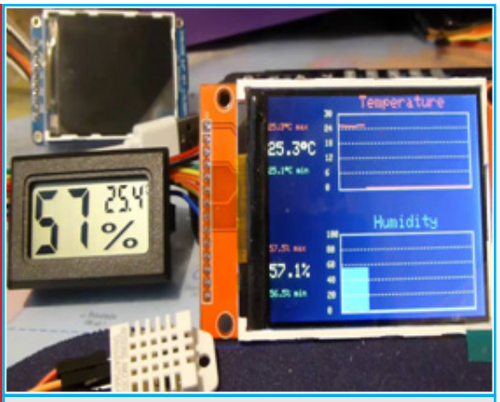

Figure 3. Humidity and Temperature measurement

Bluetooth:

Bluetooth Module is well designed with Bluetooth SPP (Serial Port Protocol) module, proposed for clear remote serial affiliation setup.

Water level sensor:

The sensing probe is attached with the system where the indication water level was clearly judge.

OLED:

An organic light emitting diode (OLED) is a light emitting diode (LED) in which the electric illumination of light is emitted by means of component which is specially portrayed.

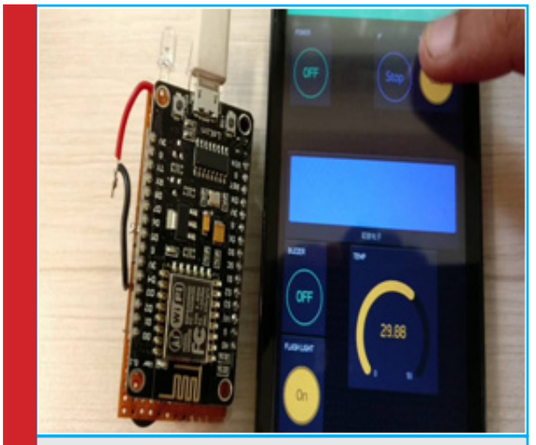

Figure 4. Mobile application based control

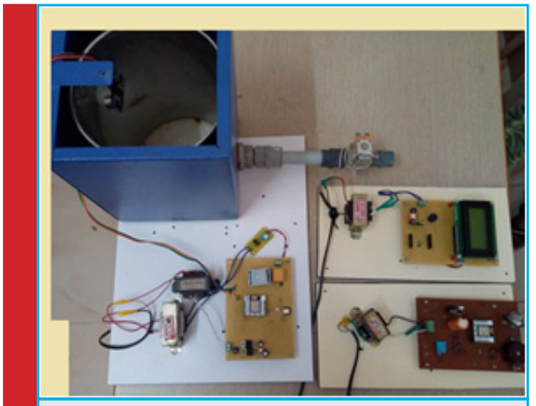

Figure 5. Proposed System Setup

DHT:

A distributed hash table (DHT) it provides decentralized approach towards the working of look up table to get the information, (Suresh Balaji, Anto; Jenith, 2014).

COMPONENTS RATING:

Component name	Ratings
Temperature and humidity sensor	5V
Gas level sensor	5V
Water level sensor	5V
IR sensor	5V
ESP8266	12 E module
Transformer	9V

PROPOSED SYSTEM SETUP

A clear clarity on sensor monitoring the humidity and temperature measurement at nominal level, (Ramlee Leong 2017). The proposed system measure temperature

rating upto alimit of 25 degree after which if there is a rise in temperature will be alerted through buzzer. The overall proposes system is given below in figure 5.

CONCLUSION

The major purpose of paper is to control the various sensors and parameters in industries. If any emergency occurs in the industries like leakage of gas, reduction in water level will be intimated automatically to the server then the information will be sent to the client through IOT for controlling purpose. From the hardware results seems the better result compare to other system. Each of system parameter is analyzed. From Each of sensor is gave the accurate value of measure for safest operation of system, every aspect in the control parameters gave good respond to system.

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