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WiFi Based Remotely Environment Monitoring System

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ABSTRACT: For most couple of years, recent difficulties of checking and control of far off natural parameters precisely has developed as new field of research.The idea of Internet of Things (IOT) is additionally developing quickly where everything around us accompanies web availability for observing and control. Monitoring the environmental parameters and initiating a control action from internet is also part of this concept. In proposed work, design an environment monitoring system, capable of monitoring and control of environmental parameters like temperature, pressure and humidity. Also, focuses on design of a low cost system that is capable. Which is not just remotely observing the earth factors like temperature, Pressure and humidity additionally starts some control activity like exchanging devices ON/OFF from the web? This system uses Wireless sensor Networks for sensing the environment parameters in the area under supervision.Sensors Node has been intended to gauge the temperature, weight and mugginess. The Control node has been designed to initiate the control action. The Central Monitoring is based on ARM11 raspberry pi board.

KEYWORDS: RASPBERRY PI, Humidity Sensor, moisturizer sensor, temperature sensor

I. INTRODUCTION

Environment monitoring system is a system that is capable of measuring few environmental parameters like temperature, stickiness, and weight and so on. These parameters are imperative in numerous applications like in industry, brilliant homes Greenhouse and climate determining. Advanced Environment monitoring systems offer many features like remote access to the measurement data and furthermore can start some control activity from inaccessible area. These frameworks utilize Wireless sensor Networks for detecting the environment parameters. Wireless Sensor Network (WSN) has sensors to detect the physical parameters and they are interconnected wirelessly to trade information. They have a central monitoring system that is associated with the web to access the information remotely. A few sensors are equipped in each remote area to measure environmental parameters and these measurements are sent to the focal office for capacity and analysis reason. Likewise, the focal office can offer charge to remote area for yield control execution. These elements offer an approach to keep up condition and permit acquiring alert on event of any abnormal conditions like parameters exceeding. A WSN permits organization of number of sensor hubs which design themselves depending on the system topology and neighborhood circumstance. After sensing their physical condiion and processing the acquired information locally, nodes communicate their information (or an extract) towards a network sink, where information is further handled and made accessible for readout. As transmitted information should find the best route towards its goal automatically, the network can be remotely controlled and along these lines be taken care of as one estimation handled as one large mapping instrument. Few systems also offer the remote logging facilities that are the parameters can be stored at regular intervals at the remote server so that they can be alluded whenever. The rapid development and miniaturization ofsensor devices, and the recent advances in wirelesscommunication and networking technologies, are permittingresearchers and engineers to create networks of little sensors thatcan be utilized to continuously monitor the health and stability ofthe environment we live in. Wireless Sensor Networks (WSNs)comprise of various spatially distributed sensors withcomputing, handling and communication capabilities that cancontinuously detect and transmit information to a base station, whereinformation can be processed and observed in

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real time. This paperprovides a detailed study and implementation of a WSN for ongoing and continuous environmental monitoring of nurserygases. A tree-topology WSN comprising of two sensor nodes and abase station was successfully fabricated and tested using open sourceand inexpensive hardware to measure the concentration level offew nursery gasses.

II. MOTIVATION

One of the best issues that the world is confronting today is that Environmental contamination. It consists of soil, water and air contamination. The as a matter of first importance Environmental contamination is air contamination which causes Global warming and Climate change. It also effect on human health. Environment monitoring is one of the major benefit of wireless sensor network's comprise of different sensors which are widely distributed to monitor different environment parameters like temperature, dampness, gases, pressure , wind speed and so on. WSN comprise of sensor nodes which are minimal cost devices with restricted power. Energy efficiency is the most serious issue when these sensors are utilized for large scale environment monitoring as the sensors are battery powered. In this way it is important to improve the energy efficiency of monitoring system. A few methods are utilized to improve the energy consumption. This paper plays out the audit on various environmental air contamination observing systems and techniques to improve the energy efficiency of the system.

III. LITERATURE SURVEY

Wireless sensor networks (WSNs) are becoming a ubiquitous technology resulting from the development of low cost and low power wireless technology. WSNs are a group of spatially distributed sensing nodes with low maintenance requirements, which can automatically monitor environmental parameters and cooperatively transfer the data through a gateway to a main database using wireless networking. There are a multitude of applications for WSN ranging from environmental monitoring to health care. Civil engineering is one area in which WSNs are having a significant impact with the development of 'smart infrastructure'.

1. GeorgeMois, TeodoraSanislav, andSilviu C. Folea, Member of IEEE Presented A Cyber-Physical System for Environmental Monitoring in 2016.
This paper presents the development of a cyber physical system that monitors the environmental conditions or the ambient conditions in indoor spaces at remote locations. The resulted solution provides the possibility of logging measurements from locations all over the world and of visualizing and analyzing the gathered data from any device connected to the Internet. This work encompasses the complete solution, a cyber-physical system, starting from the physical level, consisting of sensors and the communication protocol, and reaching data management and storage at the cyber level. The experimental results show that the proposed system represents a viable and straightforward solution for environmental and ambient monitoring applications.
2. Kadri et al. [8] in 2013 presented real time air pollution monitoring based on Machine to machine communication.
The system was implemented with various monitoring station which consist of different gaseous and meteorological sensors. Each monitoring station communicates with the backend server through M2M communication which uses GPRS network.

3. Anuj Kumar et 2013 conducted a review on environmental monitoring system. review discussed different techniques and various hardware used in the environment monitoring systems. It also considered the parameters like low cost, low power consumption, reliability, and signal to noise ratio and RF interference.

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IV. PROPSED METHODOLOGY

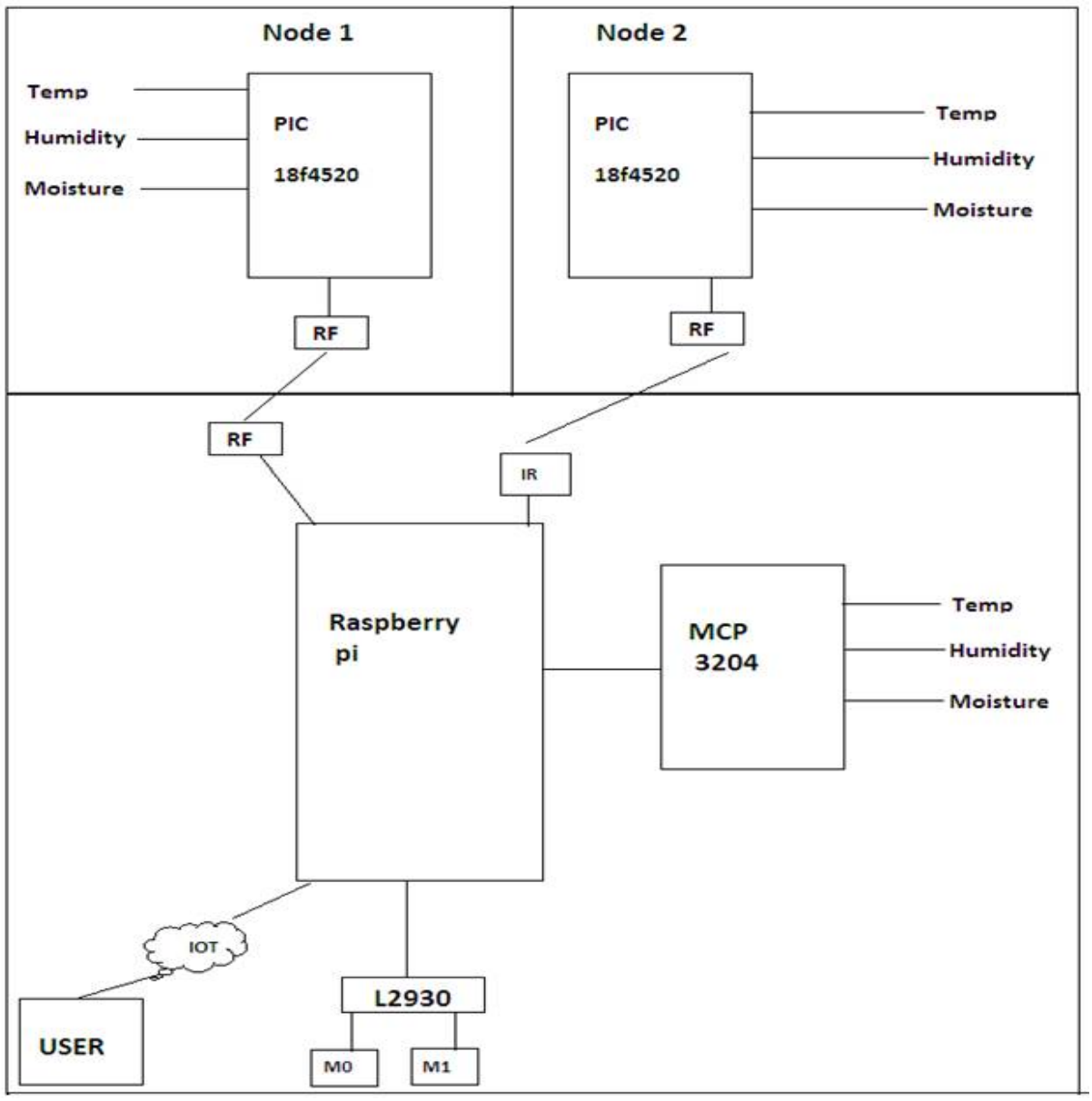

Fig.- Block diagram of environment quality monitoring system by using sensor array

Here we design a system for environment monitoring. In this we monitor the temp, humidity, moisture using IOT. here we design two node which is sense the temp, humidity, moisture for that pic18f4520 controller is used , the both node connected to main server which is install in raspberry pi using Rf module . Both nodes communicate to server by RF link. All parameter is sense and send to Raspberry pi and raspberry by shows that parameter on web page. If any node fail for any reason then main server that fault is sense and display notification of failure on web page in that case the server moves to that location and replace that node by own that means all sensor is connected to server also and those parameter is show on web page at location of that node is fail. In this way we can easily monitor environmental

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parameter without any interruption. Here two motor are connected to server for moving the robot and also interface the IR sensor for detecting node location

V. CONCLUSION

Wireless Sensor Network is designed and implemented for the purpose for which it has been designed. On observation of the performance it is concluded that the present system is reliable and variety of applications can be applied. Application parameters calculation and monitoring is precise and automatic even over the larger area. System can be monitor globally using uploaded data over internet. Parameters threshold can be changed depending upon the environment

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