IOT Based Production Task Using Raspberry PI

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ABSTRACT

Internet of Things (IoT) is propagating and florescent technology. IoT is the collection of the data through embedded system and this embedded system upload the data on internet. There are many challenges to IoT and Industrial Automation such as data and service security, Trust, data integrity, information privacy, scalability and interoperability Automation Domain Constrains. This paper combines the concept of Raspberry Pi Industrial production monitoring and Industrial Automation using IoT. The system uses the raspberry pi as controller and server, the programing is done in the python language. The webpage is designed in HTML. All sensor data are collected through raspberry pi. The IR sensor count the huge amount of object on conveyer belt and DHT11 sensor monitor the temperature and humidity. All the This system demonstrates successful counting the object and monitor the industrial parameter. It also senses the workstation temperature.

Keywords: IoT, Industrial Internet of Things (IIOT), Python Language Raspberry Pi.

I.INTRODUCTION

From last few years the industrial IOT based application is developed. It was developed from RFID technology, whereas microchips transmit the classifying information to a reader through wireless communication system And that technology goes to the wireless sensor networks , which is mainly use interconnected intelligent sensors to sense and monitoring purpose. Internet of Things (IoT) is a concept that having general presence in the environment of a different objects that through wireless and wired connections and exclusive addressing schemes are able to connect with each other and cooperate with other things to create new applications, services to reach common goals. The IoT applications are; smart cities, smart hospital, smart energy and the smart grids, smart transportation and enabling traffic management and control.

The Raspberry Pi is a single-board device having size same as ATM card which uses Linux based OS which can be directly used in the electronics projects because it has general purpose input/output (GPIO) pins on the board. This project having the Industrial production monitoring task using Raspberry Pi kit and Internet connection. The automation may be semi or fully controlled and monitors. This project is a description of how to design and build a production monitoring system that can switch any industrial acuter by accessing a Raspberry pi, which is programmed to control the systems inside industrial environment, when the person is away from work station

and enable to get the related information on mobile. The system will provide feedback indicating the current state of the system

II.PROBLEM FORMULATION

The main point of view of the system is to create a small industrial environment, where sensor are use to monitor and controlled only based on the data received from the industrial site sensors.

The system has to be implemented in one loop, so no human intervention is allowed. This means that the system is flexible to the environment.

The whole control device of the system is a small Raspberry PI. Hence the system is used to prove that the whole industrial environment can be automated just with a card size computing system or a microchip. And the industrial data can be observed or monitored from IoT.

A. GOALS AND OBJECTIVES

We develop a counting a production task and monitor the industrial parameter such as temperature and humidity due to this industrial person take a decision by using concept of IOT. Industrial person decides our product target is completed or not and product long term life.

B. NEED OF SYSTEM

In small scale industry counting and monitoring is done by manually. It is manually written by employ in some cases misunderstanding to write the count or parameter this is the huge problem. This all reason to avoid this situation this system reduce the efforts. The system gives quick result or output with the help of technology

III.OVERVIEW OF SYSTEM

In this paper we use Internet of Thing (IOT) Technology. In previous few years and now a few days in every industry the main thing is how to reduce the time and increase the production or product. In any industries various automation techniques is created and due to this doing work is comfortable. This paper develops the counting the production task and monitoring temper ature and humidity by using proximity and DHT11 sensor with reference to this employ feel work is comfortable and less effort for monitoring. The internet of sensor (Proximity sensor, Temperature sensor, Humidity sensor) is used for free to the environment and object condition. The proposed concept of system is shown in ideal figure.
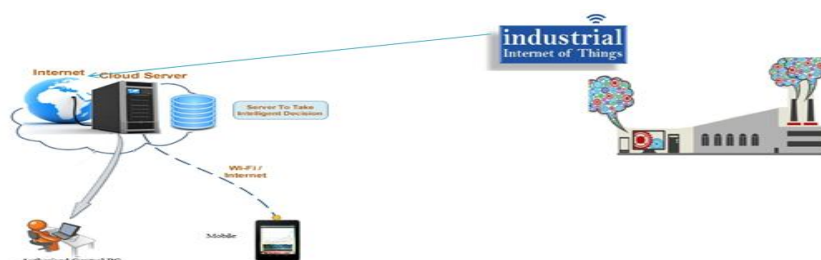
Concept of the System

The system is used in any industry to find out the things with the help of sensors and provide a particular result or solution. The sensor's output given to the controller after that controller takes action. In controller during the process if the sometime sensor creates a difficult condition that time controller overcome this difficult condition according to particular any program (C, C++, JAVA, HTML, Python, etc.) and give the appropriate result or output.

In this project we use the Proximity Sensor in that we use IR sensor An IR is an electronic device that emits in order to sense some aspects of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. IR sensor have two led such as transmitter and receiver transmitter led emits infrared radiation receiver receive this infrared rays in simply IR sensor emits infrared rays it is called as a passive IR sensor. IR sensor count the object on conveyer belt randomly and over all counting data going to Raspberry pi memory because IR sensor is interfaced with raspberry pi also Liquid Crystal Display (LCD) is interfaced with raspberry pi. In industry employ work on that particular position he see the production task or count on Liquid Crystal Display (LCD).
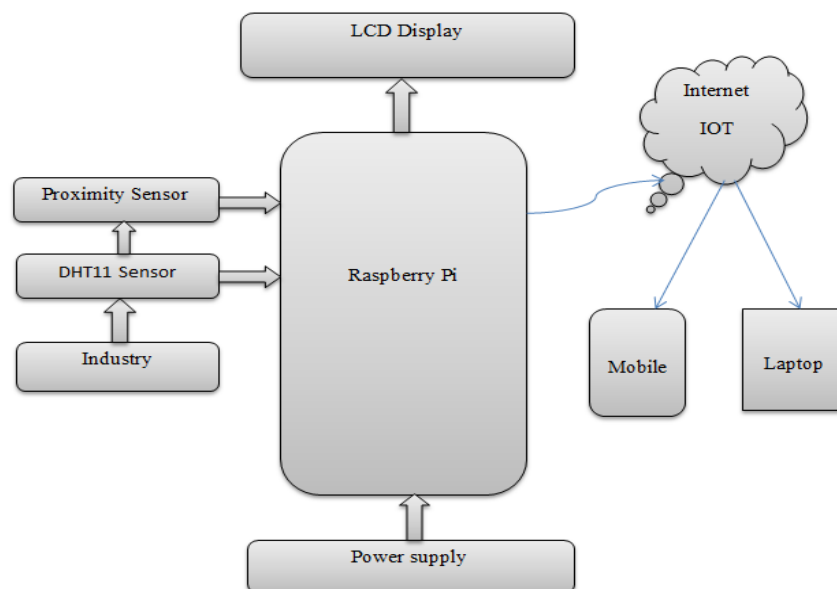

Fig-Block Diagram of System

Another sensor we use in this project the name is DHT11 sensor. This sensor is monitoring the temperature and humidity. The DHT11 sensor is interfaced with raspberry pi kit. The DHT11is digital temperature and humidity sensor. it is a composite Sensor contains a digital signal output of the temperature and humidity. The overall data stored in memory raspberry pi have a inbuilt Wi-Fi. The stored data going to the particular server the authorized person in industry he cans achieve data on his laptop or PC. If the authorized person is not in industry he can achieve data with the help of mobile in anywhere by using server or server address. The application of a DHT11 sensor is dedicated temperature and humidity sensing technology, to ensure that the product has high

reliability and better long-term life. We use 16*2 Liquid Crystal Display (LCD) and interfaced with raspberry pi. Separate 5v regulated power supply is designed for raspberry pi.

IV.RESULT

In our proposed system we are using Raspberry pi 3 module which is having inbuilt wireless functionalities that support Wi-Fi. We have used IOT (Internet of Thing) wirelessly monitor all the parameters and authorized person see this data on his PC and if authorized person not in industry he can achieve data by using android mobile. He can achieve data in every minute or every hour. The screen shots of results obtained are as shown below:

V.APPLICATION

Industry and office:-We can use sensors in wide area over the machines and instruments. Control and Monitor elements by using concept of Artificial Intelligence and IoT.

Hospital and Labs: -We can plot sensors on patient's body and Doctor can check current status on his android phone and also take necessary actions and decisions towards it.

Home:-We can implement sensors to household appliances and monitor and control with the help of authorized person.

VI.FUTURE SCOP

With reference to this system we add the various parameters and make the industry is fully automated. We use weight sensor, PH sensor, color sensor, length and domination sensor. Using this sensor to reduce the time, effort of employ and authorized person take quick decision and improve the production. The overall this thing can be done by Internet Of Thing (IOT).

VII.CONCLUSION

In our country every industrial work is computerized. In the industry parameter is monitor by help of sensor. In this project our main target is to reduce time manual work. This can be overcome by Internet Of Things

(IOT).IOT is generated in industry and monitor the various parameter and give the appropriate information to the authorized person make the system is comfortably automated which will take a perfect decision.

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