An Iot Based Reconfigurable Smart Sensor Interface for Industrial Monitoring System

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ABSTARCT:

Internet of things (IoT) is rapidly increasing technology. IoT is the network of physical object or things embedded with electronics, software, objects to collect and exchange data. In this paper we are developing a system which will automatically monitor the industrial applications and generate alerts or take intelligent decisions using concept of IoT has given us a promising way to build powerful industrial systems and applications by using wireless devices, android and sensors. In main contribution of this review paper is that it summarises uses of IoT in industries with wifi technology to monitor and control the industry and uploading the data on web.

INTRODUCTION: In recent years a wide range of industrial IoT applications have been developed and deployed. Evolution of this starts from RFID technology, which allows microchips to transmit the identification information to a reader through wireless communication. By using RFID readers, people can identify, track, and monitor any objects attached with RFID tags automatically. Another technology is the wireless sensor networks (WSNs), which mainly use interconnected intelligent sensors to sense and monitoring. Its applications include environmental monitoring, industrial monitoring, traffic monitoring. Both RFID and WSN are used to develop IoT. The development of wireless sensor networks was motivated by military applications such as battlefield surveillance; today such networks are used in many industrial and consumer applications, such as industrial process monitoring and control, machine health monitoring, and so on. Provide a bridge between the real physical and virtual worlds. Allow the ability to observe the previously unobservable at a fine resolution over large spatiotemporal scales. Have a wide range of potential applications to industry, science, transportation, civil infrastructure, and security. The WSN is built of "nodes" – from a few to several hundreds or even thousands, where each node is

International Journal of Research

Available at https://edupediapublications.org/journals

e-ISSN: 2348-6848
p-ISSN: 2348-795X
Volume 05 Issue-01
January 2018

connected to one (or sometimes several) sensors. Each such sensor network node has typically several parts: a radio transceiver with an internal antenna or connection to an external antenna, a microcontroller, an electronic circuit for interfacing with the sensors and an energy source, usually a battery or an embedded form of energy harvesting.Then upcoming technology is IoT with wi-fi technology. In previous years, Industry was monitored manually, but this paper introduces wi-fi technology to monitor as well as control the Industry autonomously without human intervention and uploading data on web.The fundamental of this venture is to build up a sensor interface gadget is basic for sensor information gathering of mechanical remote sensor systems (WSN) in IOT situations. This persistently observing the numerous sensors(LDR, Temperature, IR impediment, and so forth) information and gives as information flag to the LPC2148 microcontroller, with the goal that micron roller screen these adc esteems and shows on the LCD constantly. On the off chance that a Particular sensor will cross the limit level then this microcontroller quickly plays the alarm through ringer and furthermore this data go to the head office however web. So this task would be exceptionally helpful for enterprises and autos to give prompt to people groups and pass ready data to server/head office

however Internet. In this venture the Android advanced cell is utilized as screen the every one of the sensors data remotely utilizing Internet correspondence.

Android is a product stack for cell phones that incorporates a working framework, middleware and key applications. Android telephone has great availability alternatives, including Wi-Fi, Bluetooth, and remote information over a cell association (for instance, GPRS, EDGE (Enhanced Data rates for GSM Evolution), and 3G). Android gives access to an extensive variety of helpful libraries and apparatuses that can be utilized to fabricate rich applications. Likewise, Android incorporates a full arrangement of devices that have been developed starting from the earliest stage the stage furnishing designers with high efficiency and profound knowledge into their applications.

The controlling gadget of the entire framework is a Microcontroller which acknowledges charges from android telephone and controls transfers which are interfaced to the Microcontroller. The information got by the from Android advanced cell is encouraged as contribution to the microcontroller. Likewise, the status of the electrical apparatuses can be seen on 16*2 LCD show. So as to perform required the errand the controller is stacked with

a program composed utilizing Embedded 'C' dialect.

HIGHLIGHTS:

1.   IOT (Internet of Things) based correspondence framework.

2.   Multiple senor based Environment checking.

3.   WI-FI based easy to use interfacing.

4.   Android advanced cell/Desktop application based checking.

5.   Live status shows on LCD.

6.   Automatic Alerting through ringer.
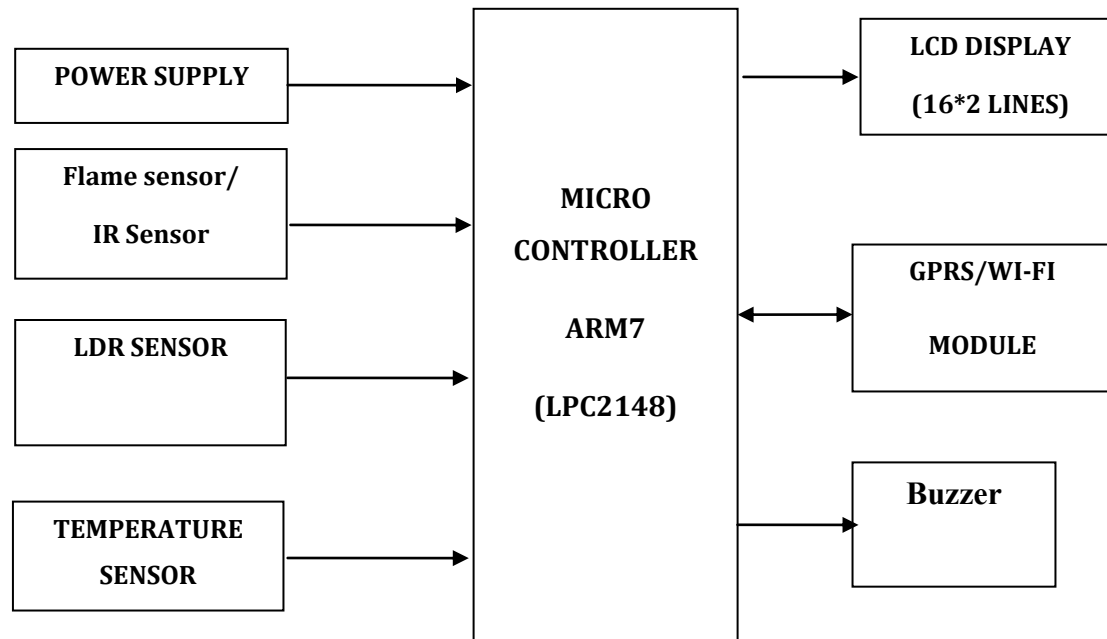
7.   Reliable and simple to work framework

GOALS AND OBJECTIVES: To monitor the sensor data using IOT Technique. To collect the data without loss and response in real time environment and monitor the sensor data everywhere using IP address.

EXISTING SYSTEM: No ways to detect un-even condition in industry. Manual intervention

BLOCK DIAGRAM:

required for monitoring. CCTV used which only monitor but no Alert generation. Alert and their appropriate actions not present manually.Time consuming approach to detect and generate Alert Manually and whenever we want data can be accessed from the web easily.

OVERVIEW OF THE SYSTEM: In this modern era of automation and advanced computing using IoT with Artificial Wi-Fi 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.The designed system is by using PIC micro controller which supports different features and algorithms for the development of industrial automation systems

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┌──────────────────┐                    ┌──────────────────┐
│  POWER SUPPLY    │───────┐            │  LCD DISPLAY     │
└──────────────────┘       │     ┌─────▶│  (16*2 LINES)    │
                           │     │      └──────────────────┘
┌──────────────────┐       ▼     │
│  Flame sensor/   │    ┌────────────┐
│  IR Sensor       │───▶│  MICRO     │
└──────────────────┘    │ CONTROLLER │  ┌──────────────────┐
                        │  ARM7      │◀▶│  GPRS/WI-FI      │
┌──────────────────┐    │            │  │  MODULE          │
│  LDR SENSOR      │───▶│ (LPC2148)  │  └──────────────────┘
└──────────────────┘    │            │
                        │            │  ┌──────────────────┐
┌──────────────────┐    │            │─▶│  Buzzer          │
│  TEMPERATURE     │───▶│            │  └──────────────────┘
│  SENSOR          │    └────────────┘
└──────────────────┘
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TEMPERATURE SENSOR: The LM35 series are precision integrated-circuit temperature devices with an output voltage linearly proportional to the Centigrade temperature. The LM35 device has an advantage over linear temperature sensors calibrated in Kelvin, as the user is not required to subtract a large constant voltage from the output to obtain convenient Centigrade scaling. The device is used with single power supplies, or with plus and minus supplies. As the LM35 device draws only 60 μA from the supply, it has very low self-heating of less than 0.1°C in still air. Features: Calibrated Directly in Celsius (Centigrade) Linear + 10-mV/°C Scale Factor 0.5°C Ensured Accuracy (at 25°C) Rated for Full −55°C to 150°C Range Suitable for Remote Applications Low-Cost

Due to Wafer-Level Trimming Operates from 4 V to 30 V Less than 60-μA Current Drain Low Self-Heating, 0.08°C in Still Air Non-Linearity Only ±1⁄4°C Typical Low-Impedance Output, 0.1 Ω for 1-mA Load

SMOKE SENSOR MQ-6 sensor is composed by micro AL2O3 ceramic tube, Tin Dioxide (SnO2) sensitive layer, measuring electrode and heater are fixed into a crust made by plastic and stainless steel net. The heater provides necessary work conditions for work of sensitive components. The enveloped MQ-6 have 6 pin4 of them are used to fetch signals, and other 2 are used for providing heating current. Resistance value of MQ-6 is difference to various kinds and various concentration gases. So, when

usingthese components, sensitivity adjustment is very necessary. Some features are: High sensitivity to LPG, iso-butane, propane Small sensitivity to alcohol, smoke. Fast response Stable and long life Simple drive circuit

APPLICATIONS Industry and office:We can implement sensors in wide area over the machines and instruments. Control and Monitor circumstances by using concept of Wi-Fi technology and IoT.Home:We can implement sensors to household appliances and monitor and control with the help of Wi-Fi technology. Environment: we can implement sensors to monitor environmental changes with the help of Wi-Fi technology with IoT.

CONCLUSION: Nowadays we need everything computerized. Earlier we can only monitor the situations with the help of cameras. In industries to reduce manual overhead we have implemented Internet of Things (IoT) in Industry to monitor as well as to inform the responsible person to take appropriate measures, but this will partially fulfil our requirement. As sometimes it will be late in this process and it will harm to property as well as life. For this purpose we are developing a system for Industrial monitoring using Wi-Fi with IoT to make system automated which will take intelligent decisions.

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