HAZARDOUS AREA MONITORING FOR INDUSTRIAL PLANT POWERED BY IoT

ABSTRACT:

Internet of Things (Iot) represents a general concept for the ability of network devices to sense and collect data from the world around us, and then share that data across the Internet where it can be processed and utilized for various practical purposes in different aspects of life. The reach of IoT based systems in industrial areas is still limited, but it has huge potential. In this project, we create an IoT based hazard monitoring system specifically suited to requirements of mining, refining and manufacturing industries. The system actively records, processes and analyzes the temperature of surroundings, which is a prime safety parameter in areas where molten metal is processed, manufacturing is done or welds are made. Also, it keeps track of high levels of dangerous gases present in the environment (LPG/Natural Gas). If a parameter is violated, the system sends an immediate notification to a set of preset list of users on their smartphones, and continues logging and monitoring data for further analysis to suggest improvements in the safety regulations of the industry. The sensors used in this prototype model can be modified with industry requirements (for example more robust temperature sensor may be required in very harsh conditions) whenever the need arises .

INTRODUCTION :

Technology advancement is a never ending process; thus, we must be well equipped and informed about new developments Day-to-Day human life has gotten more convenient as a result of these technological improvements. Automation has evolved into a must needed. The internet today provides access to all dataand systems, and web technology is continually expanding. A network interface enables remote management and control of embedded devices using a web based embedded system Controlling Internet of Things (IoT) devices is done through web controllers, often known as E-controllers. A web controller, often known as an E-controller, is a set of embedded system and software stacks that is the most extensively used method of web development in the world. Instead of employing large server systems for monitoring, administering, and handling data, e-rate login and monitoring using a distributed web control system produced using web pages generated in web applications are increasingly used instead of big server systems for monitoring, administering, and processing data. Web control systems that leverage IoT has three characteristics: energy savings, comfort, and efficiency. Our main objective is to adapt the Internet control systems to the Internet of Things, allowing users to access the application over the internet from anywhere in the globe. IoT monitoring allows you to analyze dynamic systems and analyze billions of events and alerts. Iot monitoring also enables you to bridge the gap between devices and businesses by collecting and analyzing a wide range of lo data at a web scale across connected devices, consumers, and apps. The industrial monitoring system connects itself with the open source app Blink. Blink connects itself with esp8266 for virtual control of the devices along with getting updates. The Arduino Mega is the brain of the project connected to the component and operates them with the code embedded in it. Sensors like smoke sensors, humidity and temperature sensors are used to monitor the surroundings of the machine .

LITERATURE SURVEY:

  IoT is a platform which has varied applications in day-to-day life ranging from domestic to industrial. The system we are going to implement aims to provide a low cost, low maintenance and robust architecture for analyzing hazardous situations in heavy industries Various papers published in the field of lot have touched different aspects of this project.

   Remote Temperature Monitoring Using LM35 sensor and Intimate Android user via C2DM Service presents a WSN prototype for remote room temperature monitoring, which can be wood for fire safety operations, via an Android platform. The proposed system provides an Android user interface for registered user to access the current temperature and a flash/ beep message in case of fire. This paper influenced our work in selecting the platform for alerting the user and connecting it with central controller Online Analysis And Fault Finding System For Distribution Trans formers Using IOT is about design and implementation of embedded system to monitor and record key parameters of a distribution transformer like load currents, oil level, oil quality and ambient temperature...tion to the web page. This is similar to the web interface we have implemented in our project.

   Industrial Temperature Monitoring and Control System Through Ethernet LAN in which temperature sensor measures the temperature and produce corresponding analog signal which is further processed by the central micro controller. The wired approach is less efficient in industrial areas, and thus we were motivated to implement a wireless system.