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IoT based Motor Monitoring System

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Abstract - *IOT has become a part of the modern world. The significance and utilization are increasing with each passing day. This approach is to design an efficient and real-time wireless networks to monitor voltage, current and speed of motor. A sensor is set at the heap to ascertain current, a circuit is utilized to figure voltage and with these two, power can be computed. Proximity Sensor is used to monitor the speed of the motor. Microcontroller can take input from the device they controlling and retain control by sending the device signals to Wi-Fi module. Wi-Fi module is a self contained TCP/IP protocol stack that can give any microcontroller access to Wi-Fi network. Data are stored in cloud database. A web facilitating is made to get the data from thing speak. Thing speak is the open IOT platform with MATLAB Analytics. This project permit to get the voltage, current, speed values of motor from anywhere. Industrial Monitoring and Control is essential to collect all the relevant information, statistics and data related to the various industrial processes, motors, machines and devices employed in industry premises. This aims at controlled access, better productivity and high quality results of industrial products being manufactured. In this new era of technological developments remote control and monitoring via communication techniques such as Wi-Fi techniques has been used in Industries.*

Key Words: **Internet of Things, Sensors, Wireless Network, Things speak, Smart Monitoring.**

1. INTRODUCTION

Internet is an interconnection of computers all over the world. Internet links billion of devices worldwide, and is used to send, receive data all over the world. Internet has vast uses and applications in many fields and domain. One of the important applications of the internet is IoT. IoT is interconnection of physical objects mixed with various other fields like embedded systems, sensors, software which helps to collect, transfer and exchange information. The heart of the system is a Microcontroller. A microcontroller is a small computer on a single integrated circuit. A microcontroller contains one or more CPUs (processor cores) along with memory and programmable input/output peripherals. Program memory in the form of Ferroelectric RAM, NOR flash or OTP ROM is also often included on chip, as well as a small amount of RAM. Microcontrollers are designed for embedded applications. Microcontrollers are used in automatically controlled products and devices, such as automobile engine control systems, motor, remote controls, office machines, appliances, power tools, toys and other embedded systems. PIC Microcontroller 16F877A is used in this project because it easy to control. This project presents a wireless sensor network (WSN) to support power management using Web services. The system is designed by the integration of WSNs with Ethernet/ Internet/ Web Service communications to acknowledge the power management and provide information services using IOT platform. In this project, the main context revolve around energy conservation. In order to maintain healthy flow of energy, load has to be taken into control. If the control of load is confined over a small area or a single network does not give the required efficiency. The solution for this opting cloud computing. The system comprises of a brilliant detecting unit that identifies and controls the electrical apparatuses utilized for day by day exercises by taking after various levy rates.

1.1 OBJECTIVE

Industrial Monitoring and Control is essential to collect all the relevant information, statistics and data related to the various industrial processes, motors, machines and devices employed in industry premises. In this paper, to monitor the voltage, current, power and speed of motor through IOT.

1.2 ADVANTAGES

- The IoT based industry automation using microcontroller is used for remote control and remote monitoring of industrial devices and equipment.
- The IoT based industry automation using microcontroller is reasonably cost effective and offers a low-cost solution for smart control of industrial machines.
- Additional relays could be added in order to increase its device control capacity.

2. HARDWARE DESCRIPTION

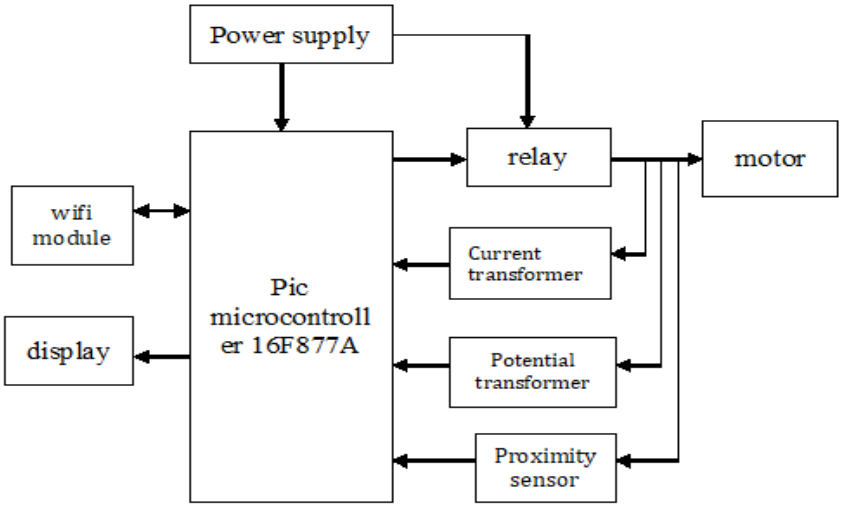

FIG 2.1 Block Diagram

2.1 RESULT

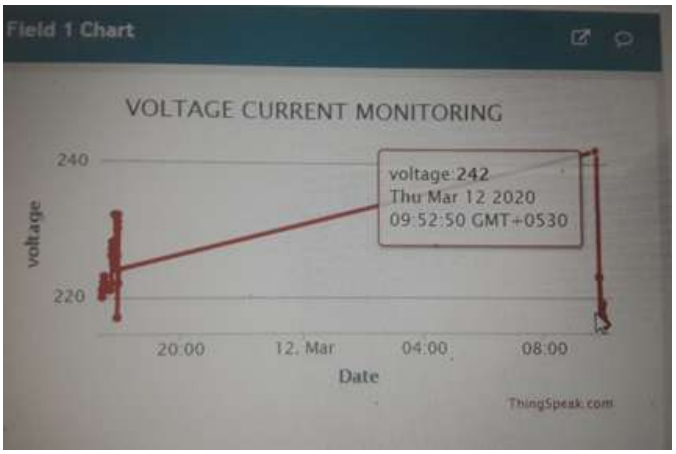

FIG 2.2 Voltage Monitoring Graph

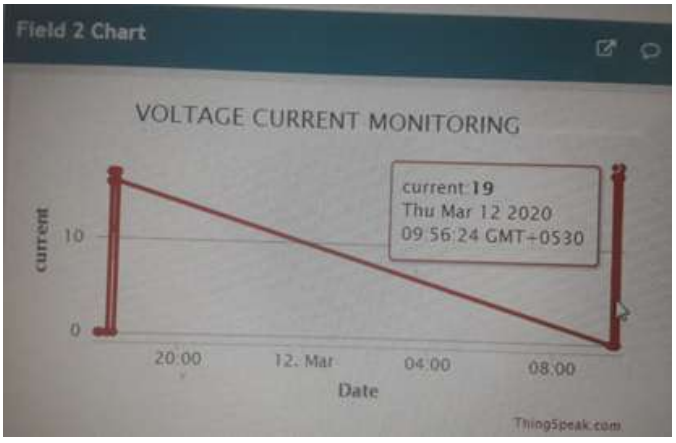

FIG 2.3 Current Monitoring Graph

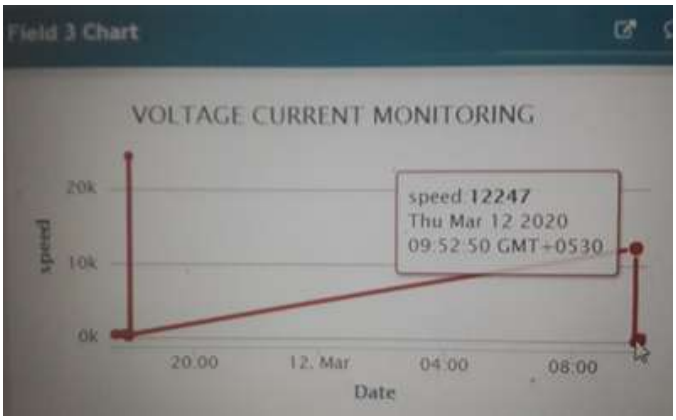

FIG 2.4 Speed Monitoring Graph

3. CONCLUSION

Our paper "IOT Based Motor Monitoring System" has been successfully executed with each of the proposed components of the system working according to commercial standards. The system designed in our project has been so designed in order to improve existing security systems by modernizing traditional systems into an IOT system for feasible monitor and access. Monitoring of motor can be done from a stationary point without having to move. This system is exclusively used to keep surveillance on the motor working condition and also to monitor the on/off functionality. It improves efficiency of the system by sending alert signal in case of any defect. The graphical App based mobile controlling gives a user friendly and easily accessible

platform to the user. The user can view the data from the remote area with the help of internet or Wi-Fi connection.

4. SNAP SHOT OF PROJECT

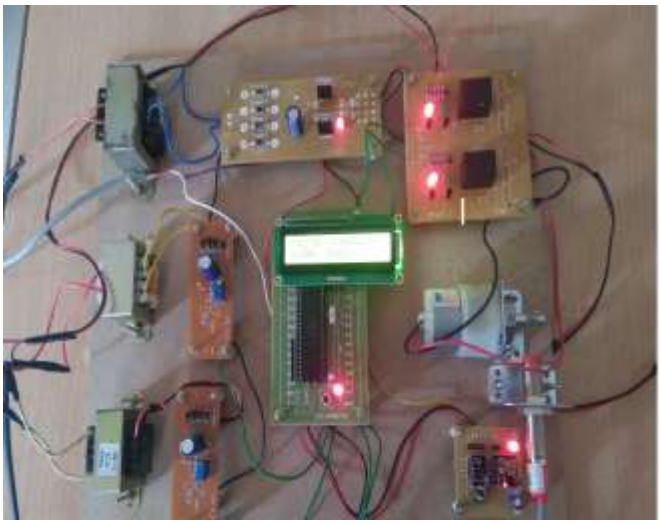

FIG 4.1 Snap Shot Of Project

FIG 4.2 LCD Display

5. REFERENCES

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