

SUBSTATION MONITORING AND CONTROLLING BASED ON MICROCONTROLLER BY USING IOT

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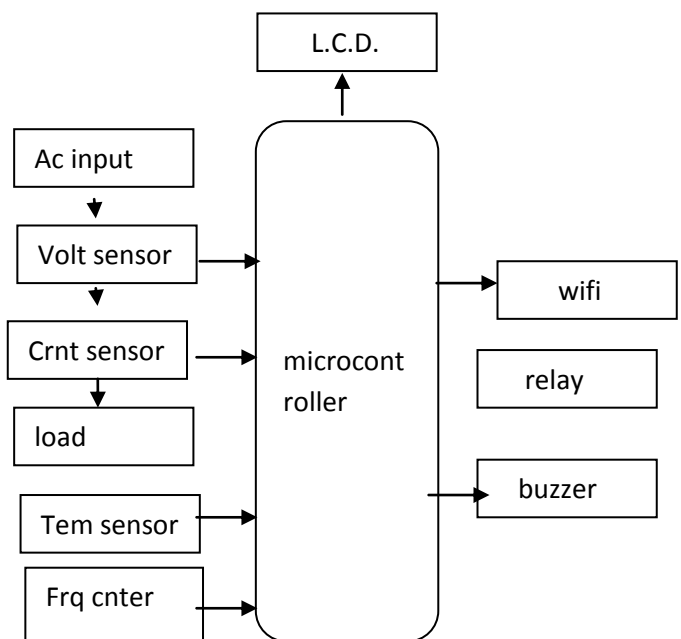
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Abstract - Substations are the main structure block in a power system. Any damages in Substation negatively affect the balance of a power system. The damages are substantially being due to overfilling and hamstrung cooling. downsides of the conventional monitoring system and the biggest problem in the electricity distribution grid are utmost of the distribution are ever located in a pastoral area, where regular monitoring by mortal observation is delicate to perform due to inadequate force. Being monitoring systems aren't supported for real time operations. There are too numerous failure cases are detected every day. Not allowed for planning operation time-out. The main ideal of the real time monitoring of the health conditions of the distribution motor using IOT technology. The parameters similar as oil position, temperature, voltage and current of a transformer are covered, reused and recorded in waiters. For this purpose, we use four detectors connived with Arduino. The recorded data can be shoot using Wi- Fi module and penetrated from anywhere around the world using IOT technology using HTTP protocol. This helps in relating without mortal reliance. This helps in relating and working a problem before a failure without mortal reliance.

1. INTRODUCTION

The aim of project is to acquire electrical readings like current, voltage. to send and receive real time readings everywhere around the world through Wi-Fi modem or GSM module along with the temperature with it. another motive of this project is to provide safety for the circuit by operating an electromagnetic relay. The relay will be releases when there is a misreading in the above-mentioned parameters. the system is designed in a way to send an alert message to users whenever the circuit breaks. the components used are current sensor, voltage sensor, temperature sensor for storing the reading MySQL server is used and the controllers are coded using embedded c

2. Block diagram



2.1 abbreviation for the block diagram

1. crnt- current
2. tem- temperature
3. frq cnter – frequency counter

3. HARDWARE IMPLEMENTATION

3.1 CURRENT SENSOR



Fig 1.2 current sensor

A current sensor is a device which is capable

Of detecting the current flowing in a circuit and generates a signal parallelly to that current. the output of signal may be analog or digital

3.2 VOLTAGE SENSOR



Fig 1.3 voltage sensor

A voltage sensor is a device that measures and monitors system voltage. Voltage sensors will be used to Determine either the ac voltage or the degree of dc voltage.

3.3 RELAY



Fig 1.4 Relay

Relays are circuit-closing and circuit-opening switches that operate both electrically and electromechanically. It is in charge of controlling the opening and closing of electrical circuit contacts. When the relay link is open (NO), the relay does not energise.

3.4 BUZZER



Fig 1.5 buzzer

A buzzer, often known as a beeper, is an auditory signalling device that is either mechanical, electromechanical, or piezoelectric (piezo for short). Warning systems, timers, and user input validation, such as a mouse click or keystroke, are examples of common buzzer and beeper applications.

3.5 LCD



Fig 1.6 L.C.D

A liquid-crystal display (LCD) is a flat-panel display or other electronically controlled optical device that use the light-modulating characteristics of liquid crystals in conjunction with polarizers. Liquid crystals do not directly emit light; instead, they use a backlight or reflector to create colour or monochrome images.

3.6 INTERNET OF THINGS

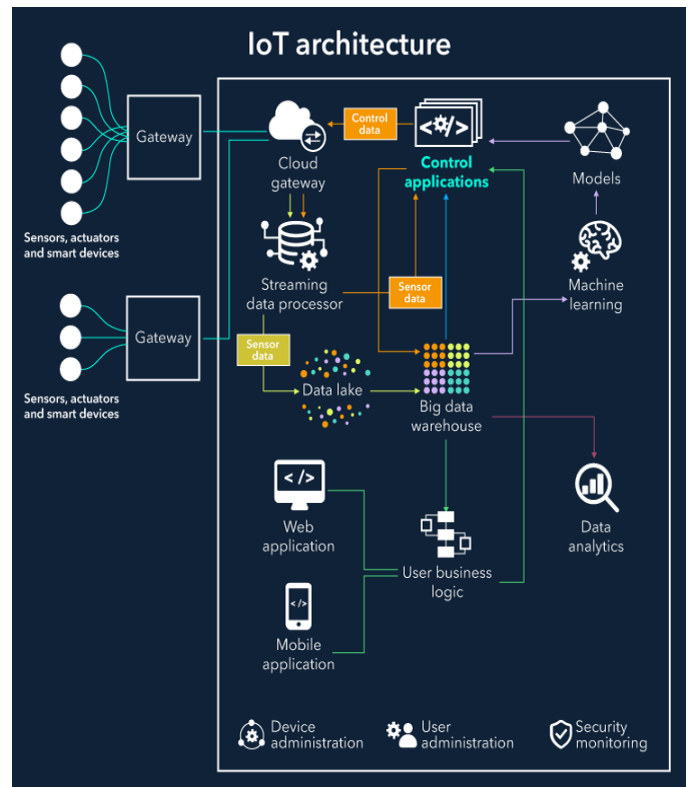


Fig 1.7 architecture of IOT

The Internet of Things (IoT) is a network of interconnected, internet-connected gadgets that can gather and transmit data without human intervention across a wireless network. The possibilities for personal or professional development are limitless. A linked medical device, a biochip transponder (think livestock), a solar panel, a connected automobile with sensors that warn the driver to a variety of potential concerns (fuel, tyre pressure, needed maintenance, and more), or any object equipped with sensors that has the ability to acquire and send data via a network can all be considered a 'thing.'

4. CONCLUSION

It outlined how all of the hardware components were to be integrated. Each module's existence was reasoned out and properly positioned, resulting in the unit's greatest performance. Second, with the support of developing technology, the project was successfully completed employing extremely advanced ICs. As a result, the project was successfully planned and tested.

5. REFERENCES

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