SMART HOME C.A.R
[Controlling ,Analyzing and Reading]

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ABSTRACT

In the modern world, electricity becomes one of the fundamental necessities of human beings under domestic, industrial and agricultural purposes. Power Consumption has been raised because it is highly efficient for many resource usage. Mostly Power consumption for unwanted purpose also happens drastically without knowing. Monitoring the power consumption for every electronic device by people is very difficult. IOT monitoring system proposed for the solution of high power consumption. Usage of IOT monitoring system leads to have proper reading for power consumption under each device and using individual IOT for each electronic device, Cost plays a major drawback under IOT monitoring system. It is highly depend on the internet for reading purpose New technique has been considered to overcome the problem of IOT usage called LoRa. LoRa is a device used as monitoring system with the enable of connection. The proposed system can achieve the high accuracy and minimize the cost

Keywords— Data collecting, Current load monitoring, Switch controller, Power Consumption Readings.

1. INTRODUCTION

The electricity drastically demand under every industrial and domestic purpose. One of the essential source in our daily life. This electricity is also called as power. Power is the backbone of any electronic system and the power supply is what feeds the system. The power supply consists of both AC and DC power supply. Power supply helps to deliver under different environment. This environment are using the power at a higher rate and it is highly difficult to detect the power usage for unwanted purpose and fraud of power consumers leads to affect others consumers by giving high bill amount for consuming large amount of electricity**.** For avoiding the we are considering the LoRa device, which helps to detect, control and analyze the power supply with the help of Bluetooth.

2. LITERATURE SURVEY

LITERATURE SURVEY 1

CONCEPT USED

It helps to find fraud of electricity consumers' power utilities which leads to lose large amount of money for every year. It is difficult to distinguish between honest and fraudulent customers. Realistically, electric utilities will never be able to eliminate fraud. It is possible by considering IOT device to take measures, detect, prevent and reduce fraud within the sector.

LITERATURE SURVEY 2

CONCEPT USED

It is based on represents an affordable and flexible, power consumption monitoring system that is based on electrical sensors which are connected to the building's own power grid. Using IOT concept we have prototyped a real time power monitoring system that is to be implemented in an autonomous smart home for power management.

LITERATURE SURVEY 3

CONCEPT USED

It makes a subsequent validation of EnerMon a flexible, efficient, edge-computing based Internet of Things (IoT) LoRa (Long-range) System to monitor power consumption. This system provides real-time information and a descriptive analytics process to provide a 'clear view' about energy consumption over time and identify power waste.

3. EXISTING SYSTEM

Power consumption and monitoring system of the area that continuously monitor the consumption of consumer. If the consumption is beyond the limit of the meter in that case it cut off the power supply of the whole area. The whole process is based on the ohm's law. IOT concepts are used so that the information regarding meter status will be send wirelessly from the place where the meter is placed to the server from there it sends the information to the main station or substation.

4. PROPOSED SYSTEM

This system is based on the offline monitoring system using LoRa and Arduino. Here we are considering switch board and each switches are considered under algorithm for ensuring ON/OFF. If a particular device is ON then we can detect that device's power consumption. After ON, switch will connect to particular room where that corresponding device being placed and Then it will connect to main room where LoRa has been placed with the help of bluetooth+.

Two LoRa are used in this system:

One used as transmitter. Another used as receiver.

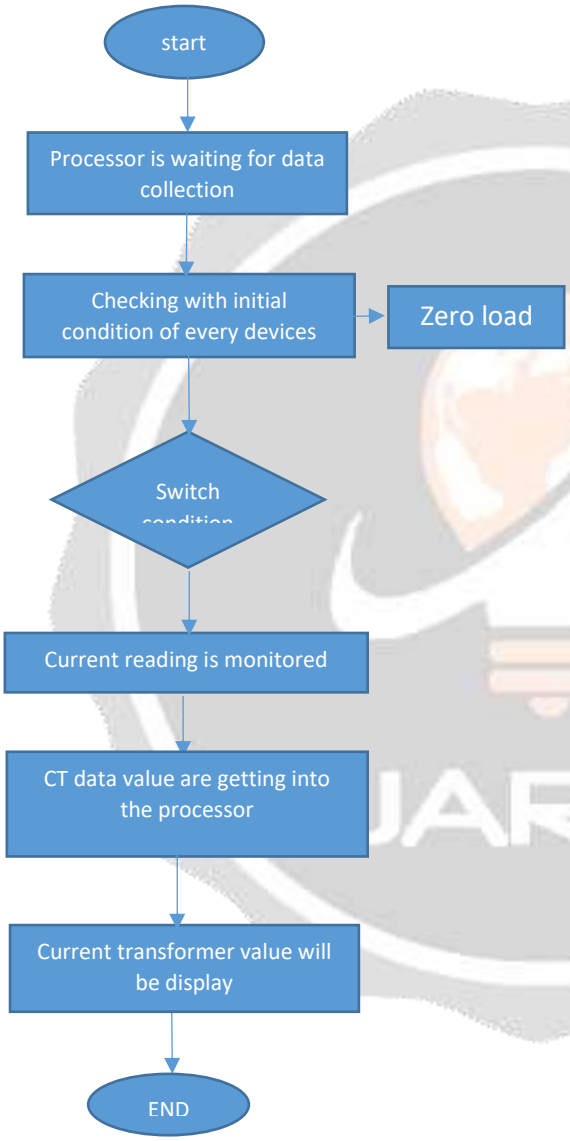
This LoRa will give reading of power consumption to consumer through Bluetooth connection and Algorithm used under Arduino is c , c++ and java. Controlling switches ,Analyzing process and Reading the load[power] is termed as C.A.R.

4.1 ALGORITHM

- **A.** Start to giving power supply.
- **B.** Processor is waiting for data collection.
- **C.** The devices like Lora, Current transformer, Bluetooth device, switches are checking with initial conditions.
- **D.** If switch is ON current transformer value will be displayed otherwise switch is OFF.
- **E.** CT data value are getting into the processor.
- **F.** IT processing the data to display the current reading.
- **G.** Stop monitoring

4.2 WORKING PRINCIPLE:

Two LoRa are used one is transmitter and another one is receiver for reading the power consumption with backend coding of C language and arduino codes. This process is starts with giving power supply and the process is waiting for data collection. The devices like Lora, Current transformer, Bluetooth device, switches are checking with initial conditions. If switch is ON current transformer value will be displayed otherwise switch is OFF. CT data value are getting into the processor. Which get the data to display the reading.



5. Conclusion and future enhancements:

With the help of designed model power consumption of a customer is monitored. When the user exceeds his limit of power consumption the supply of power will cut off automatically. The usage of every consumer in the region or sector will have individual data under power consumption. The supplier can also use for monitoring the power usage by the user as well as the entire region.

The power consumption data sheet of the entire region is generated and analyzed using this device. If the generated data is provided to the customers, they can compare their usage with the data sheet. So this will help to identify the fraudulent user who is stealing the user's power by direct hooking method.

In future the remote sensing capacity will be increases above more than 200km. Accuracy of measuring the current load for electronic devices will be increases.

6. REFERENCES

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