THE UNIVERSITY OF FAISALABAD

IoT Based Energy Monitor

INTRODUCTION

In Pakistan, plug load devices in building sectors are consuming close to 40 percent of the total electricity consumption. Though the share of plug load in building energy is increasing, very few studies exist on the plug level energy usage and consumption. In order to address the growing energy use of miscellaneous and electronic load , some measures need to be taken.

Hence identifying needs, this project focuses on designing the devices that have built-in capability to measure and report the energy use or receive control input over the network.

By measuring current and voltage, we can analyze energy consumption, make the world smarter place and make better decisions using Internet of Things.

PROBLEM STATEMENT

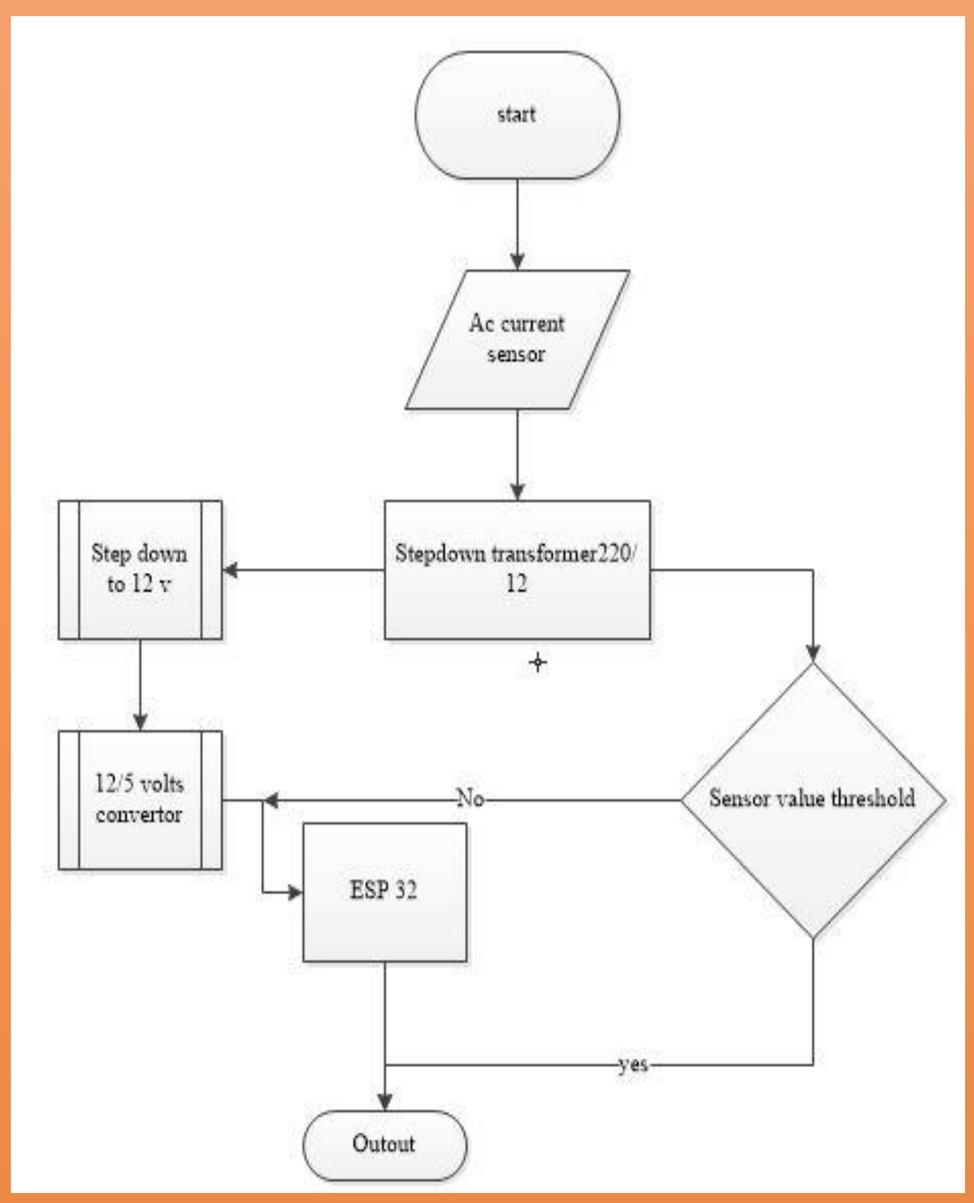
More than 85% of systems are unconnected, and do not share data with each other or the cloud. One such technology that facilitates the interconnection is the INTERNET OF THINGS.

The predicament at hand is that our conservative energy meters do not provide us of real time statistics of energy consumption. There needs to be a system in place that can record and store all the data of power demand and furnish the data to the user when desired. Our IOT energy meter proves to be a valuable asset in addressing that need.

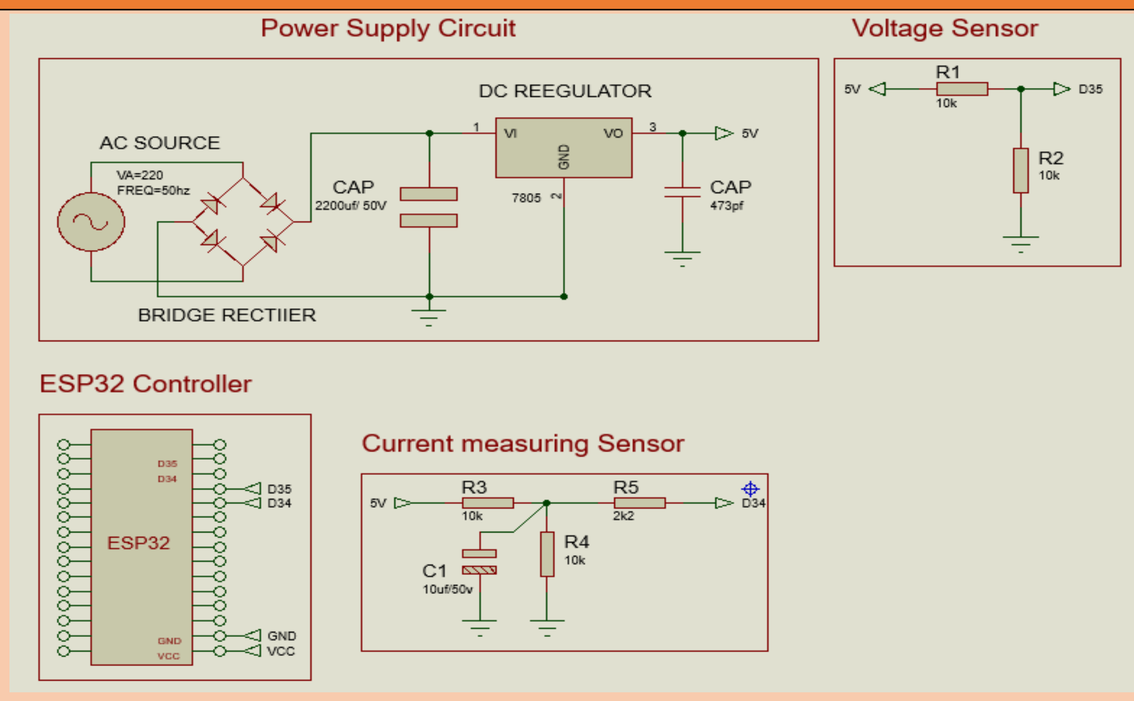
OBJECTIVES

The main goal is to devise such an efficient system that can carry out energy monitoring of all the appliances. Through this, we can have real time picture of voltage demand and power consumption of every appliance that is connected in our homes and offices. We can virtually monitor and oversee all the required electrical appliances.

METHODOLOGY



CIRCUIT DIAGRAM/ SCHEMATICS



RESULTS AND DISCUSSION

FUTURE WORK

- **There can be a system where Automatic Switching of electric equipment by the use of IoT is applied.**
- **A system can be introduced where user can receive SMS, if one crosses threshold of electricity usage.**
- **A strategy can be implemented where user can monitor energy consumption and pay electricity bill online.**
- **A system in which a user receives SMS when theft is detected at consumer end.**
- **Application of IoT based theft detection buzzer with Energy Meter can be designed.**

CONCLUSIONS

This project is based on IoT and Energy monitoring. Practical model of 'IoT and Controller based Energy monitoring' has been successfully designed. Energy consumption of connected appliances is carried out and displayed on LCD screen as well as on web server.

The proposed IoT based Energy Meter is implemented using two nodes, one on the consumer end and one for the Web server. One can save the electricity and detect theft. Hence, the project mainly focuses on the billing, power theft and to curb the wastage of electricity.

REFERENCES

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DEPARTMENT OF ELECTRICAL ENGINEERING