Chapter 1

Introduction

The project titled “SMART HOME POWER METER” is project which designed basically on the concept of “INTERNET OF THINGS”. We all are very versed with the concept of SMART CITIES. In lieu of the same we tried to solve some of the issues that were needed to be addressed which included the problem with the power meters installed in our houses.

That’s why we tried to solve all the shortcomings that were present in it.

Section 1.1 – WHAT IS SMART HOME METER?

Smart home meter is the convenient, safe, and reliable way that is designed to replace the current existing power meters. This smart meter can be installed in millions of houses all across India and can revolutionize the way we pay our electricity bill and save millions for the nation by preventing electricity theft.

Subsection 1.1.1 - Shortcomings present in the current power meters:

* Bill not readily available
* Can’t detect electricity theft
* Not user friendly
* Hard to install
* Need a person to physically be present to take readings

Subsection 1.1.2 - So we developed the following project to meet all the shortcomings

Some of the features which include:

* Cloud connectivity
* Live current, units consumed, bill calculator all on the single click
* User friendly
* Simple to install
* Can easily detect electricity theft
* Includes smart home automation and live statistics which includes temp, pressure etc.
* Lcd display to show the live current statistics

Subsection 1.1.3 – Transcript of Smart Home Meter

* Ac voltage coming in the house from the local grid is first passed through the current sensor (ACS712).
* The current sensor (ACS712) which in turn is connected to the arduino uno microcontroller (ATMEGA 328)
* The arduino uno microcontroller is in turn connected to the raspberry pi using USB port.
* The arduino uno also includes a LCD panel is being used for live display of the current and power consumption.
* The raspberry pi is connecter to the internet using WIFI or ETHERNET cable and also to the relays boards which can control the appliances in the house using a simple user friendly android app or website from anywhere anytime in the world.
* The raspberry pi also packs a Temperature, Pressure as well as Altitude sensor (BMP180), and a Human presence sensor (PIR) which can further used for security purposes.
* But the main aim of the project which is fulfilled by allowing the user to access all the live statistics of the power consumed, units consumed, as well as live current usage anywhere anytime in the world.
* Not only the current usage and power it also calculates the amount of bill which is pending and also the live bill statistics is being displayed on the website.