HOME ENERGY MONITORING AND CONTROLLING SYSTEM USING IOT

**AIM:**

The main aim of the project is to design “**HEM** operation performance how each load performs when being controlled by the HEM unit electrical measurements for the different loads”.

**COMPONENTS:** Energy Meter, microcontroller, GPRS modem, Loads.

**PROPOSED METHOD**

**HEM system**comprises *an HEM unit* that provides monitoring and control functionalities for a homeowner, and *load controllers* that gather electrical consumption data from selected appliances and perform local control based on command signals from the HEM system. A gateway, such as a smart meter, can be used to provide an interface between a utility and the data base for the electrical consumption is also maintained through internet.

**BLOCK DIAGRAM:**

**MICRO CONTROLLER**

**(LPC 2148)**

**LCD DISPLAY**

**POWER SUPPLY**

**OPTO COUPLER**

**MAINS SUPPLY**

**(230VAC)**

**ENERGYMETER**

**GPRS MODEM**

**RELAYS**

**LOADS**

**APPLICATIONS :** Used to provide an interface between a utility and a homeowner in a real-life HEM deployment.

**ADVANTAGES : E**fficient use of electric power generation and transmission assets.

**Target device :** 8051

**Tools** : Keil ide, flash magic