POWER METER BILLING AND LOAD CONTROL USING GSM

AIM:

Design and development of Power Meter Billing and load control using GSM With Arduino.

PURPOSE:

Power meters are more important to read power consumption of home, offices and industries. But all existing Power meters are static and wattage information displayed on display of Energy meter. Wireless and remote kind of power meters are helpful to monitor from remote places. As well load control from remote place. If bill not paid with in time electricity department can switch off loads by SMS. There is no such kind of power meters used in our country wisely due to cost ineffectiveness. Here we have solution that Power Meter Billing and Load Control Using GSM.

DESCRIPTION:

This project includes GSM (Sim800c) module, which is connected to Arduino through UART interface. Power Meter signal taped through optocoupler to Arduino digital IO pin. Power Meter gives signal through LED while calculating wattage. In this project we are considering LED signal as unit. Multiple loads connected to Power Meter through relays.

WORKING:

Power meter output loads can be control from GSM module. When loads ON, Power Meter calculates power and amount will increase based on power units. This information displayed on LCD. For every three units SMS will send through GSM modem. If bill not paid within time, electricity department can turn off loads. By sending notification request to GSM modem, it will send units and amount data.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
GSM	:	SIM800C
Energy meter	:	Single Phase
Buzzer	:	5vDC
Relay	:	12v DC Coil type
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

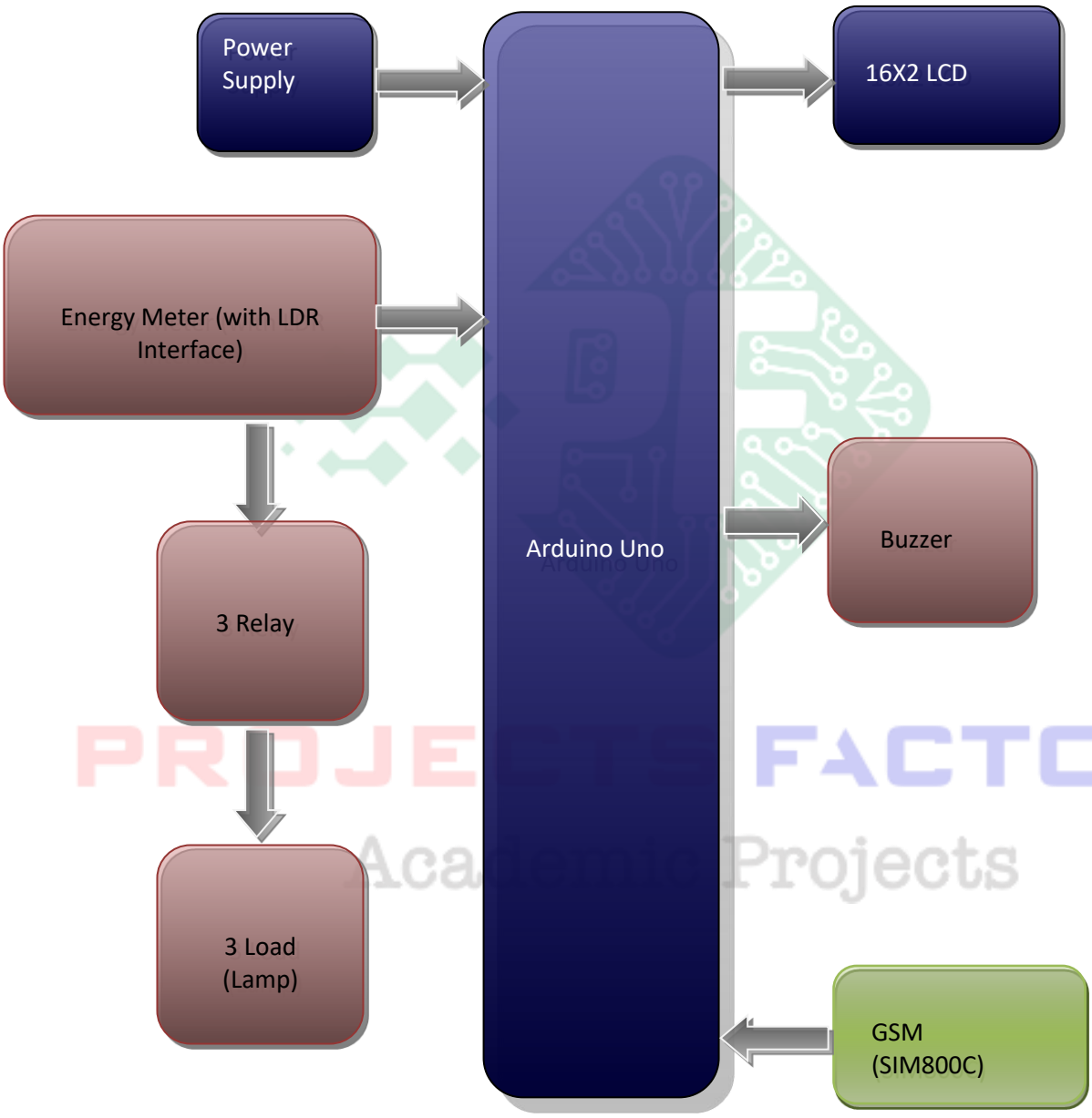
Arduino IDE

Proteus based circuit diagram

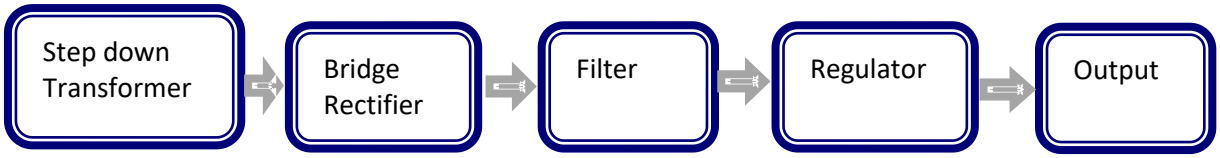
APPLICATIONS:

- Home purpose
- Electricity Department
- Industries

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- We have covered GSM (SIM800C) module interfacing
- Energy Meter and relay interfacing