

GSM BASED POWER MONITORING SYSTEM FOR DC LOADS

AIM:

Design and Development of GSM based power monitoring system for DC loads.

PURPOSE:

DC loads consumes less power than AC loads. Especially DC lights and DC fans consumes less power with high efficiency. Sometimes they consume milliamps. But milliamps current reading is difficult. But we should read low current for battery based applications. Here we proposed solution like GSM based power monitoring system for DC loads.

DESCRIPTION:

This project includes GSM (Sim800C) module, which is connected to Arduino through UART. Two DC fans controlled by two relays which are connected to digital pins. Shunt resistor connected to Arduino analog pin. Voltage divider connected to Arduino analog pin which is voltage sensor.

WORKING:

In this project we will read voltage, current and power of DC loads. Here DC loads are DC fans. We can control DC fans with SMS commands. Current consumption is directly proportional to number of loads. If number of loads increase then power consumption also increased. We will get voltage, current and power information as SMS in two ways. Arduino sends SMS in time interval based and request based. Time interval means – every one minute it sends SMS. Request based means – by sending request SMS to GSM we will get voltage, current and Power information.

TECHNICAL SPECIFICATIONS

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
GSM	:	SIM800C
Voltage Sensor	:	Resistor voltage divider
Current Sensor	:	Shunt Resistor
Relay	:	DC 12V
Fan	:	DC 12V
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

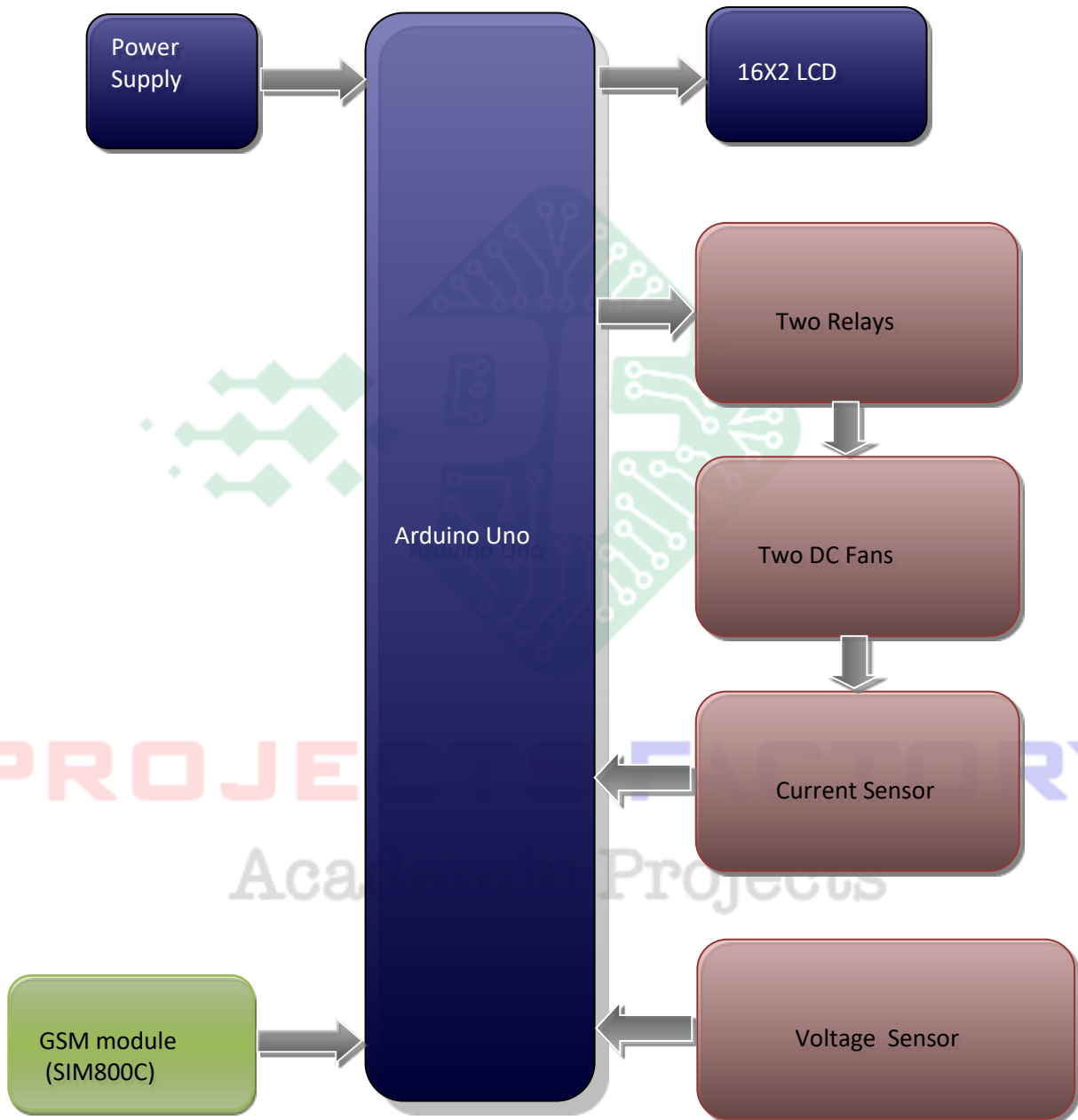
Arduino IDE

Proteus based circuit diagram

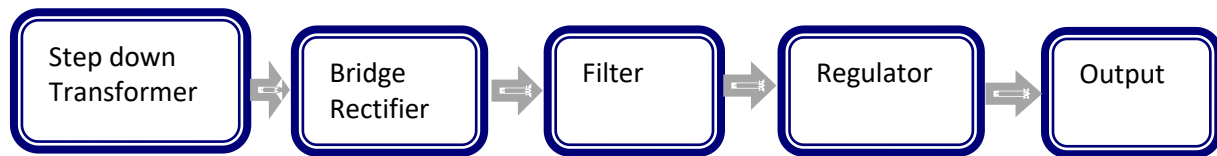
APPLICATIONS:

- Power Meter Applications
- Power Reading of DC loads

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered GSM (SIM800C) module interfacing
- Voltage and Current sensor interfacing
- Relay and DC Fan interfacing

PROJECTS FACTORY
Academic Projects