
PC BASED SCADA FOR INDUSTRIAL APPLICATIONS

AIM:

Design and Development of PC based SCADA for Industrial Applications.

PURPOSE:

SCADA is a supervisory control and data acquisition system. This is used for monitoring and controlling of industrial parameters. Few SCADA applications don't have control section. Based on industry type SCADA will be monitoring type or control type or both. General SCADA systems implemented with PLC boards and expensive. Customization and further changes is complicated in regular SCADA. But we don't know what kind of change need for industries. The best solution is to implement SCADA application with microcontroller. Microcontrollers are inexpensive and easy to modify. Here project title is PC based SCADA for industrial applications using Arduino.

DESCRIPTION:

Arduino and USB-TTL cable connected with UART communication. DHT11 and LDR connected to Arduino digital pins. Light, Fan and humidifiers controlled by three relays which are connected to Arduino digital pins.

WORKING:

In SCADA, based industries based on parameters loads will be controlled automatically. To read industrial parameters like temperature, humidity and light intensity we are using DHT11 and LDR sensor. Using DHT11 sensor we can read temperature and humidity. Using LDR sensor we can read light and dark conditions. If temperature greater than desired value then Fan will be ON, otherwise OFF. If Humidity below than desired value then humidifier will be ON, otherwise OFF. Based on light and dark condition light will be OFF and ON. All this sensors data and loads (light, fan, humidifier) data will be upload to PC and PC has inbuilt C# or VB application. This application displays sensors data and data will be stored in text file. This text file used as local database and can be accessed at any time.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontrollers	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
Communication Cable	:	USB-TTL
Temp-Hum Sensor	:	DHT11
Light Sensor	:	LDR
Relay	:	12VDC
Fan	:	12VDC
Light	:	230V AC
Humidifier	:	Ultrasonic Humidifier
Power Source	:	12VDC Adaptor

SOFTWARE:

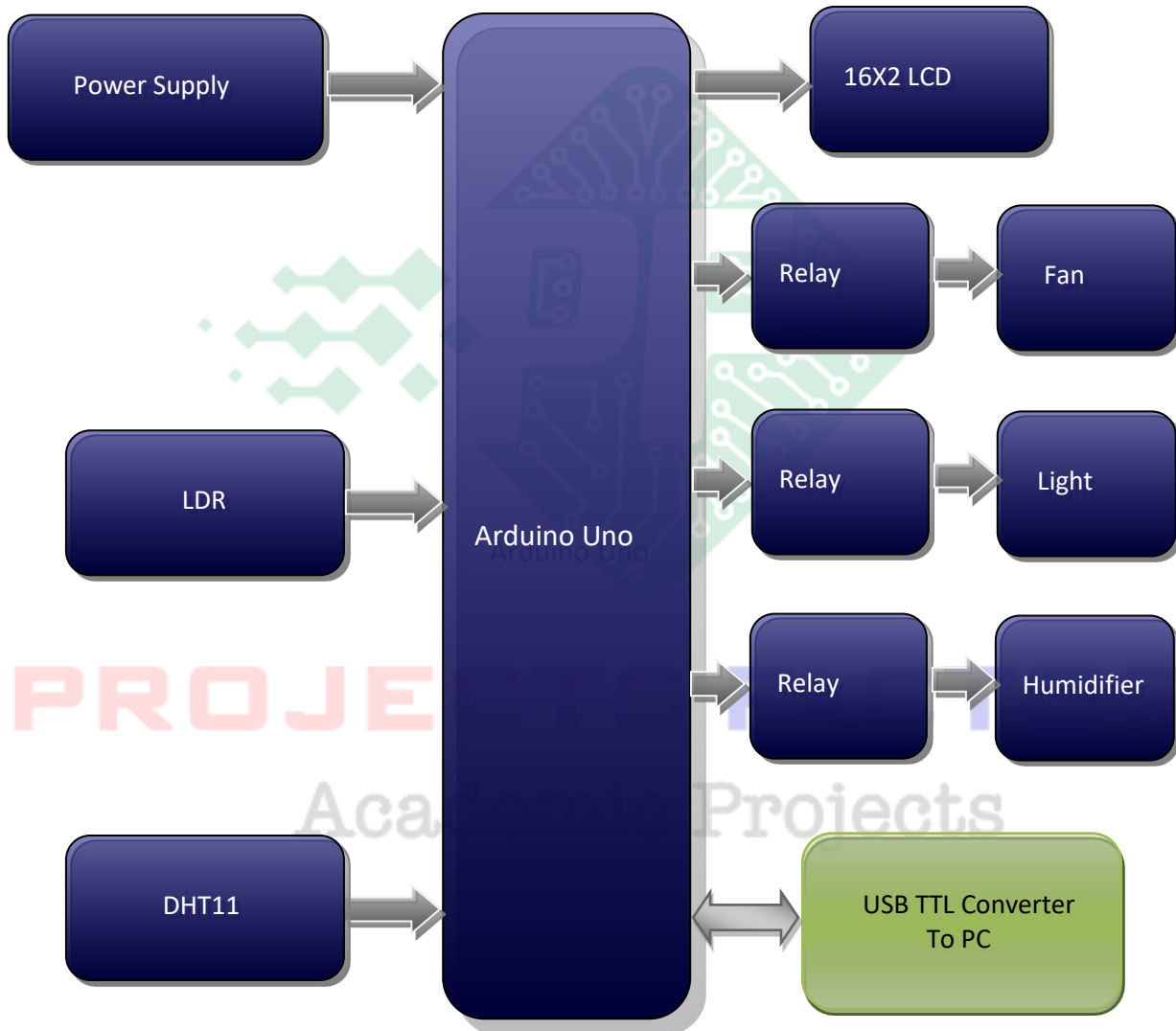
Arduino IDE

Proteus based circuit diagram

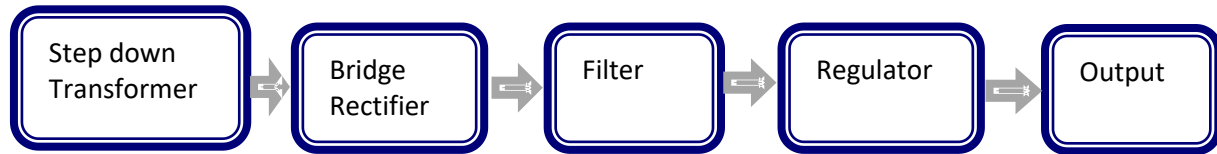
APPLICATIONS:

- SCADA Applications
- PLC Applications
- Industrial Applications

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered Arduino and PC interface
- Sensors like DHT11 and LDR

PROJECTS FACTORY
Academic Projects