

## IOT SMART AGRICULTURE

### **AIM:**

Design and development agriculture parameters monitoring and controlling using IOT smart agriculture.

### **PURPOSE:**

Agriculture is main important sector in the earth. Now a days all sectors adapting technology very fast. But in agriculture sector adaption of technology is far away. Doing some part of work automation is very helpful to formers and saves time. So that they can spend same time on other works parallel.

### **DESCRIPTION:**

This project consists DHT11 (temperature and humidity) sensor and soil moisture sensor. Two sensors connected to Arduino through digital and analog pins respectively. WIFI (Esp8266/IOT module) also connected to Arduino through UART pins. AC pump, DC fan and heaters are controlled through relays. These three control are few control parameters of Agriculture.

### **WORKING:**

DHT11 (temperature and humidity) sensor sense environmental temperature /humidity and sends to Arduino. Soil moisture sensor sense soil moisture Dry and Wet conditions. Arduino takes all these sensor values and displayed on LCD. At the same time Arduino sends to server through WIFI (Esp8266/IOT module). Farmer can monitor all these values from anywhere. Also Farmer can control AC pump for soil moisture, DC fan for temperature and heating element (heater) for humidity from IOT server.

## TECHNICAL SPECIFICATIONS:

### HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
WIFI	:	Esp8266 (IOT module)
Temp/Humidity Sensor	:	DHT11
Relays	:	12V Electromagnetic coil
Pump	:	AC pump 230v
Fan	:	DC pump 12V
Heater	:	230v AC heating filament
Power Source	:	12v 2 amp Adaptor

### SOFTWARE:

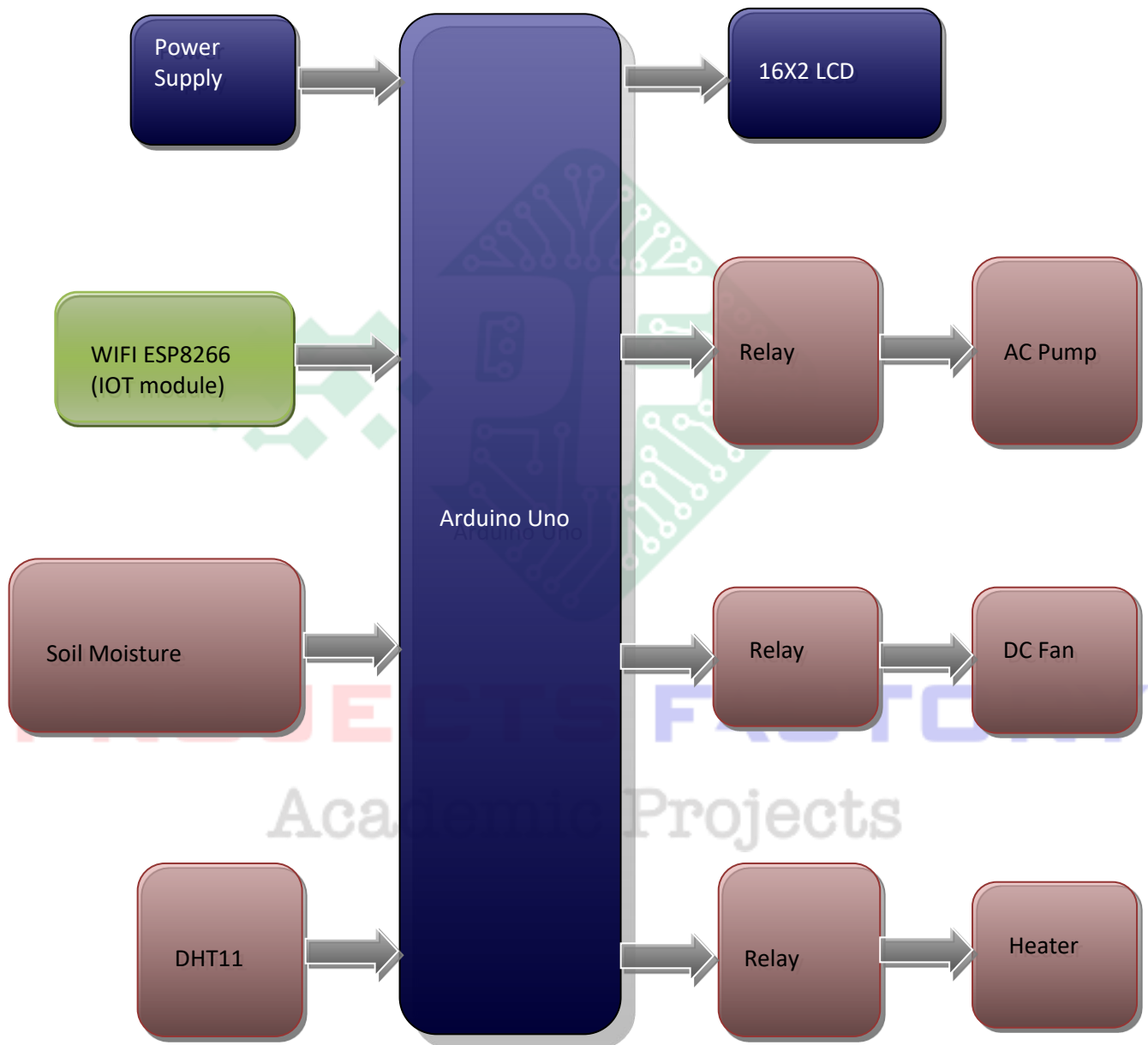
Arduino IDE

Proteus based circuit diagram

### APPLICATIONS:

- Farming
- Agriculture
- Hydroponics

**BLOCK DIAGRAM:**



## POWER SUPPLY BLOCKDIAGRAM:



## INTERFACES COVERD:

- In this project we have covered WIFI (ESP8266/IOT) module interfacings. Also DHT11 (Temperature and humidity) and Soil Moisture sensors along with relay Loads control.

PROJECTS FACTORY  
Academic Projects