IOT UNDER GROUND CABLE FAULT DETECTION

AIM:

Design and development of IOT based underground cable fault detection using Arduino.

PURPOSE:

Underground cables are more reliable and effective way for cable communication. It is very less maintenance than regular pole hanging cables. But it is very difficult to identify faults when cable is in underground. Here we have solution that IOT underground cable fault detection using Arduino. Using this project user can easily fault location from remote location using IOT technology. Generally every wire has some resistance according to length. Wire resistance is directly proportional to wire length. In this project we measure wire resistance at some particular locations. Those locations indicated through slide switches. Based on slide switch ON/OFF, it assumes No fault and fault.

DESCRIPTION:

This project includes WIFI (Esp8266/IOT module) which is connected to Arduino through UART interface. Three relays connected to Arduino through digital IO pins to provide 3 phase. Some resistors connected in series to perform cable fault resistance. All resistors connected to analog pin of Arduino.

WORKING:

Initially first will be ON and remaining two will be OFF. In this condition Arduino calculates resistance of R-phase, Based on switches action Arduino identifies fault. Same thing repeat for two more phase (Y-Phase and B-Phase). Fault information of three phases will be displayed on LCD. Same data will be transmitted to IOT server through WIFI (ESP8266/IOT). Monitoring can be done from anywhere using IOT server.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
WIFI	:	Esp8266 (IOT module)
Relays	:	12v Magnetic Coil
Resistors	:	1K and 10K
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

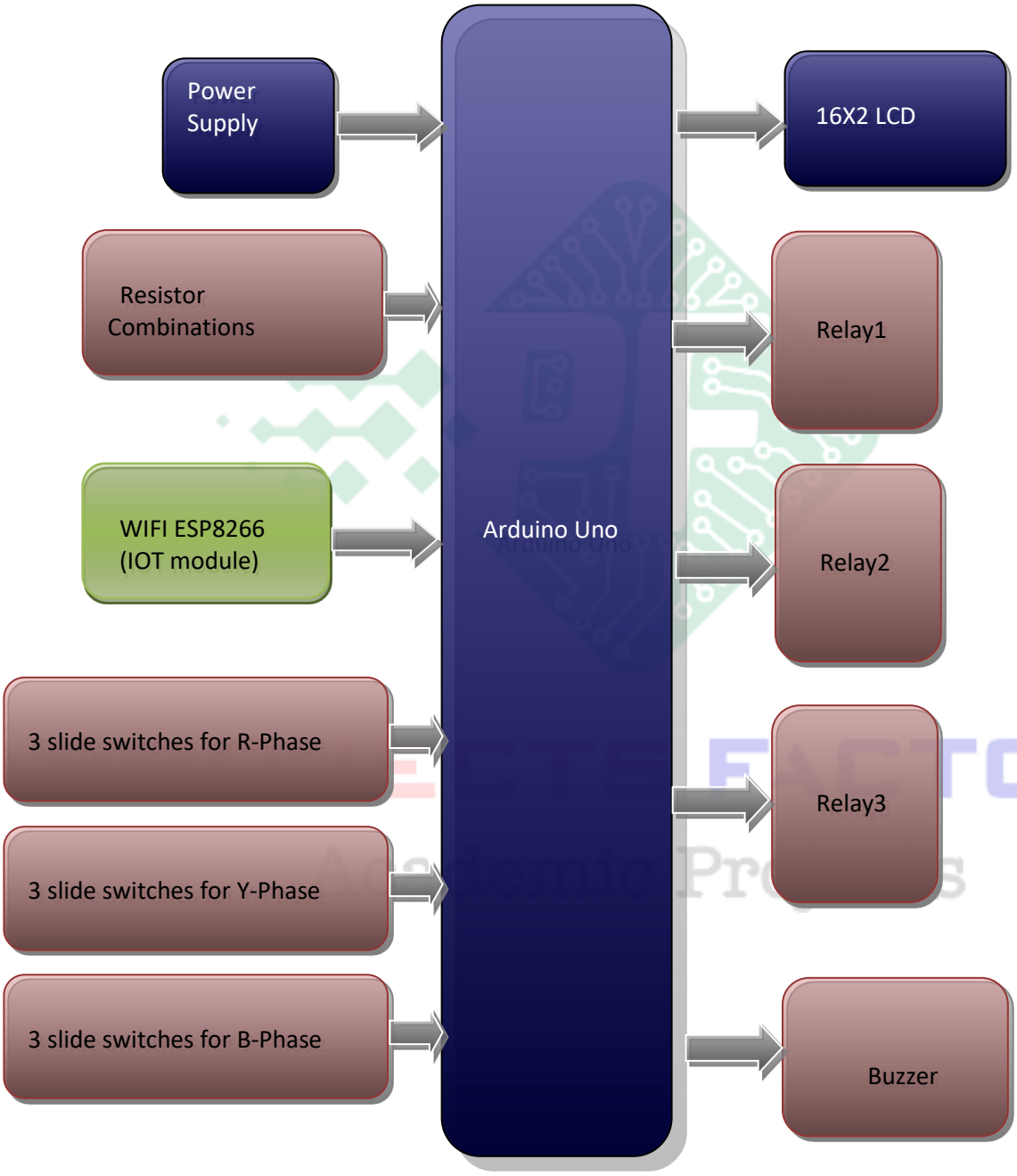
Arduino IDE

Proteus based circuit diagram

APPLICATIONS:

- Cable Fault Detection
- Electrical Applications

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:

INTERFACES COVERD:

- We have covered WIFI (ESP8266/IOT) module interfacing
- Three relays interface
- Voltage divider resistor combinations