IOT TRAFFIC SIGNAL MONITORING SYSTEM

AIM:

Design and development of IOT traffic signal monitoring system using Arduino.

PURPOSE:

Traffic signal system is to control traffic. But monitoring of traffic density is important to estimate traffic routes. Based on this government can take decisions to provide extra roads to control traffic. To provide this we proposed system that IOT based traffic signal monitoring system using Arduino.

DESCRIPTION:

This project includes WIFI (Esp8266/IOT module), which is connected to Arduino through UART interface. Four IR sensors connected to Arduino through digital IO pins to monitor density of traffic.

WORKING:

Here Arduino controls traffic led signals with time delay. At a time it allow one road and remaining three roads blocked. Like that it rotates four roads continuously. When IR sensor activates more time that means traffic is more. When traffic is more in any road green light comes immediately to that road. This information always updated on LCD. At the same time information transmitted to IOT server through WIFI (Esp8266/IOT module). User can see data in IOT server from anywhere.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
WIFI	:	Esp8266 (IOT module)
IR sensors	:	Digital Type
Leds	:	Red, Orange/yellow and green
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

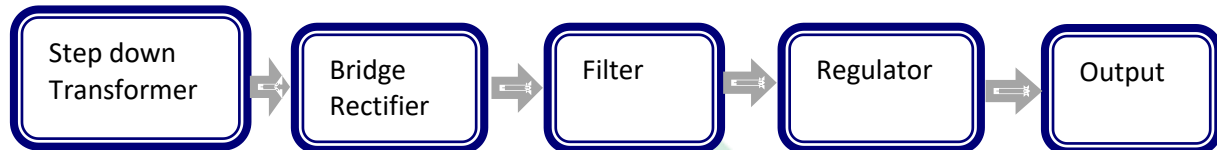Arduino IDE

Proteus based circuit diagram

APPLICATIONS:

➢ Traffic management
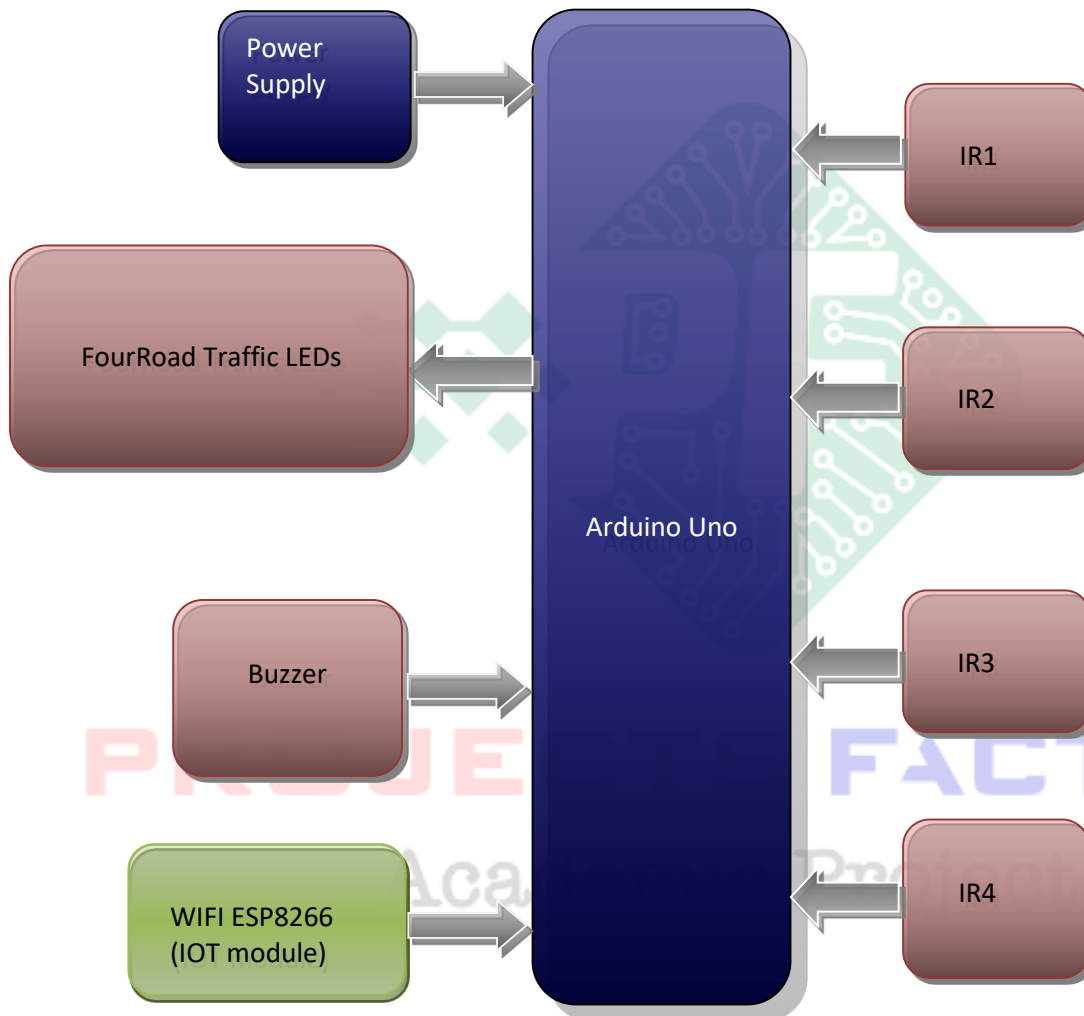
BLOCK DIAGRAM:

POWER SUPPLY BLOCKDIAGRAM:

Step down Transformer → Bridge Rectifier → Filter → Regulator → Output

INTERFACES COVERD:

- We have covered WIFI (ESP8266/IOT) module interfacing
- Four IR sensors
- Four road traffic leds