IOT PATIENT HEALTH MONITORING

AIM:

Design and development of IOT patient health monitoring using Arduino.

PURPOSE:

Now a day's health care is primary important field among all fields. Adding IOT technology to it and monitoring health parameters through wireless is very useful and effective. But existing health care devices are static and data will visible only on display. Here we design and develop IOT based patient health monitoring to monitor data remotely.

DESCRIPTION:

This project includes MAX30100/11 sensor. This sensor can read heart beat and SPO2 (oxygen values for blood). MAX30100/11 sensors interfaced with Arduino through I2C communication. On other hand WIFI (Esp8266/IOT module) module connected to Arduino through UART port. Temperature sensor (LM35) also connected to Arduino through analog pin. Buzzer also connected to Arduino digital I/O and will ON after reading sensor values.

WORKING:

One hand finger of patient has to keep on temperature sensor (LM35) sensor to monitor temperature and another hand finger has to keep on MAX30100/11 sensor, it takes few seconds time to read heart rate and SPO2 values. After successful read, Arduino gives buzzer sound and displayed values on LCD. As well Arduino sends Heart rate, SPO2 and temperature values to IOT server using WIFI (ESP8266/IOT module) module. In IOT server data will be visible in text format and graphical format. Doctors can access this data from anywhere and easily analyses with graphical representation.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
WIFI	:	Esp8266 (IOT module)
Heart rate	:	Max30100/11
SPO2	:	Max30100/11
Temperature Sensor	:	LM35
Buzzer	:	DC 5V
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

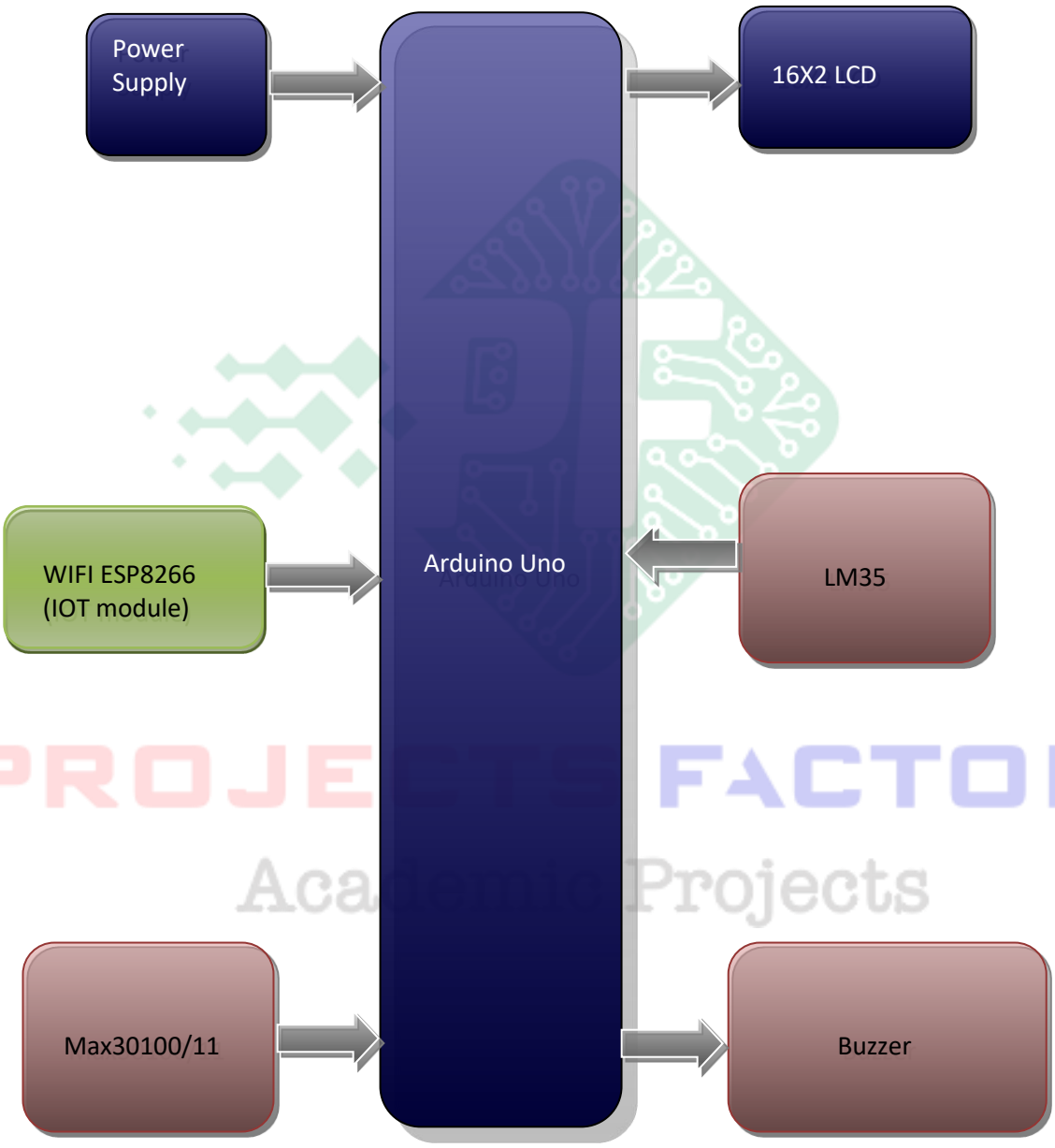
Arduino IDE

Proteus based circuit diagram

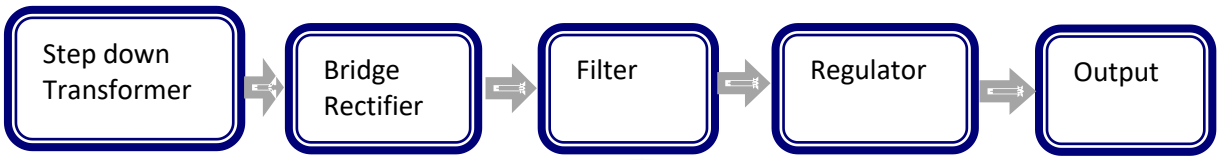
APPLICATIONS:

- Hospital
- Health Care
- Cardiology

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- In this project we have covered WIFI (ESP8266/IOT) module interfacings. Heart beat and SPo2 parameters monitoring from max30100/11. Temperature sensor (LM35) which can be interfaced to Analog pins.