

IOT HEART RATE MONITORING

AIM:

Design and development of IOT heart rate monitoring for patients.

PURPOSE:

Cardiology department is very important department among all departments in medical sector. Doctors can estimate heart life based on heart beat values in several days continuously. The heart beat values in graph wise is easy to estimate heart functionality easily. But continuous heart beat monitoring in presence of doctor is not possible. To solve this we have implementing IOT heart rate monitoring using MAX30100/11 sensor.

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. Buzzer also connected to Arduino digital I/O and will ON after reading sensor values.

WORKING:

After keeping finger on MAX30100/11 sensor, it takes few seconds time to read heart rate and SPO2 values. After successful read, Arduino displayed values on LCD. As well Arduino sends Heart rate and SPO2 values to IOT server using WIFI (ESP8266/IOT module) module. Arduino uploads data to server for every one minute. Buzzer will be ON when data uploads to server. 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
Buzzer	:	DC 5V
Power Source	:	12v 2 amp Adaptor

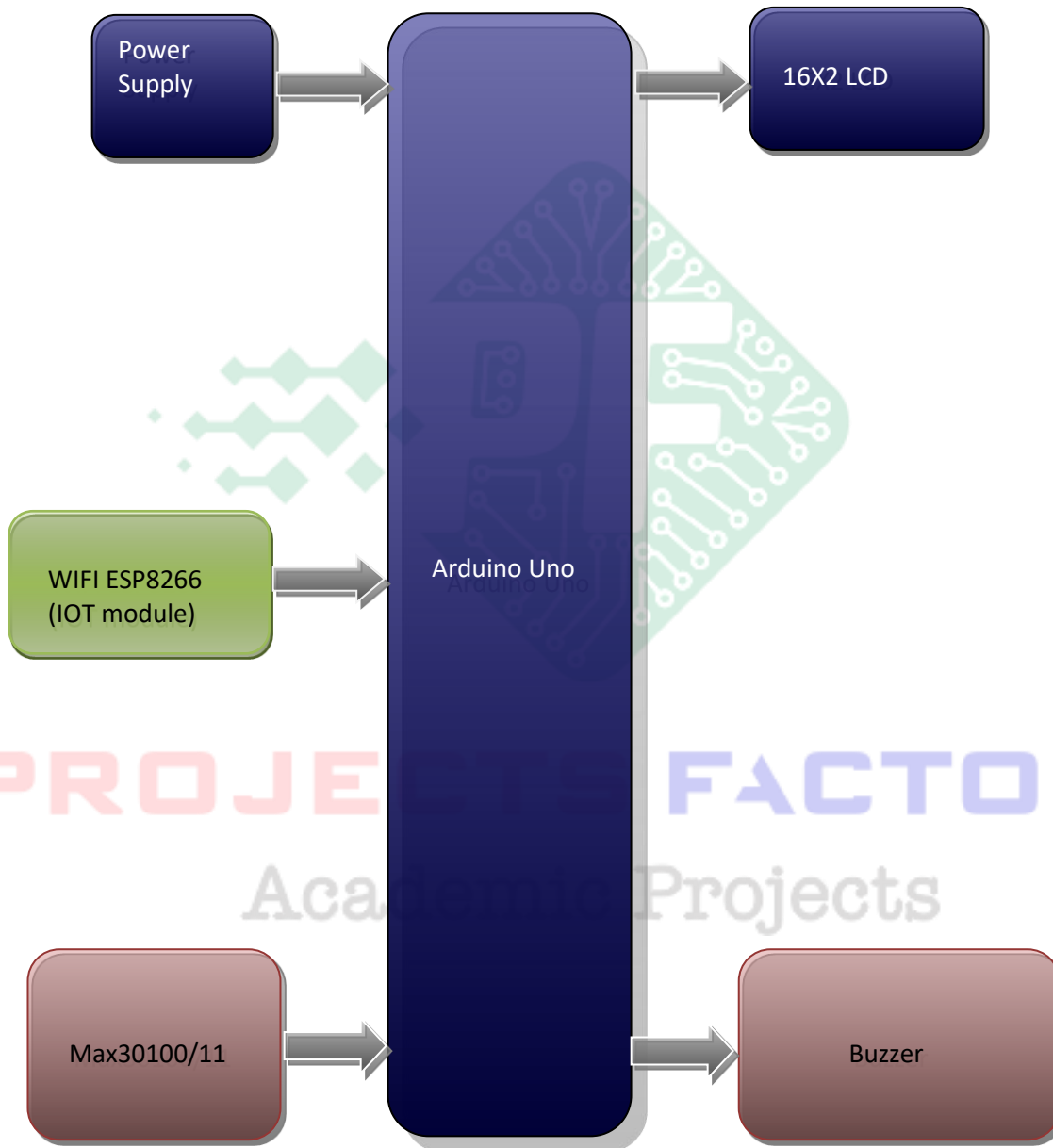
SOFTWARE:

Arduino IDE
Proteus based circuit diagram

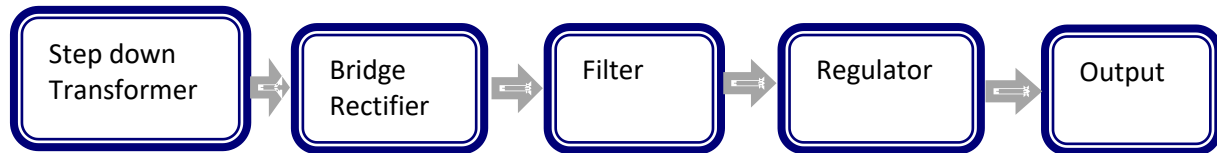
APPLICATIONS:

- Hospital
- Health Care
- Cardiology

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- In this project we have covered WIFI (ESP8266/IOT) module interfacing. Also Heart beat and SPO2 parameters monitoring from max30100/11.

PROJECTS FACTORY
Academic Projects