

LUNGS BREATHE RESPIRATORY HEALTH ANALYZER AND MONITORING OVER IOT USING ARDUINO

AIM:

Design and development of Lungs breathe respiratory health analyzer and monitoring over IOT.

PURPOSE:

Now a days everything becomes digital. Lot of advantages when any system becomes digital. It could have advanced feature like wireless, IOT, Storage and analytics. Especially Medical equipment needs digital integration to evaluate data. Here we want to digitalize spirometer and update data to IOT server. Using this we can know lungs capacity over IOT. Here the project title is Lungs breathe respiratory health analyzer and monitoring over IOT using Arduino.

DESCRIPTION:

ESP8266 (IOT module) interfaced to Arduino serial port. Three IR sensors connected to Arduino digital pins. Button and buzzer connected to Arduino digital pin.

WORKING:

Three IR sensors placed at top of spirometer and those can detect Spirometer reading. Spirometer can detect lungs capacity when any person inhales air by keep spirometer pipe into mouth. If one ball raise then lungs capacity 600cc/sec. If two balls raise then lungs capacity 900cc/sec. If three balls raise then lungs capacity 1200cc/sec. User needs to press button while inhaling air. This will tells us about lungs respiration capacity and data uploads to IOT server. We can see this data from anywhere.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
WIFI	:	Esp8266 (IOT module)
IR Sensor	:	5v DC
Button	:	2 pin push
Buzzer	:	5v DC
Power Source	:	12v 1 amp DC battery

SOFTWARE:

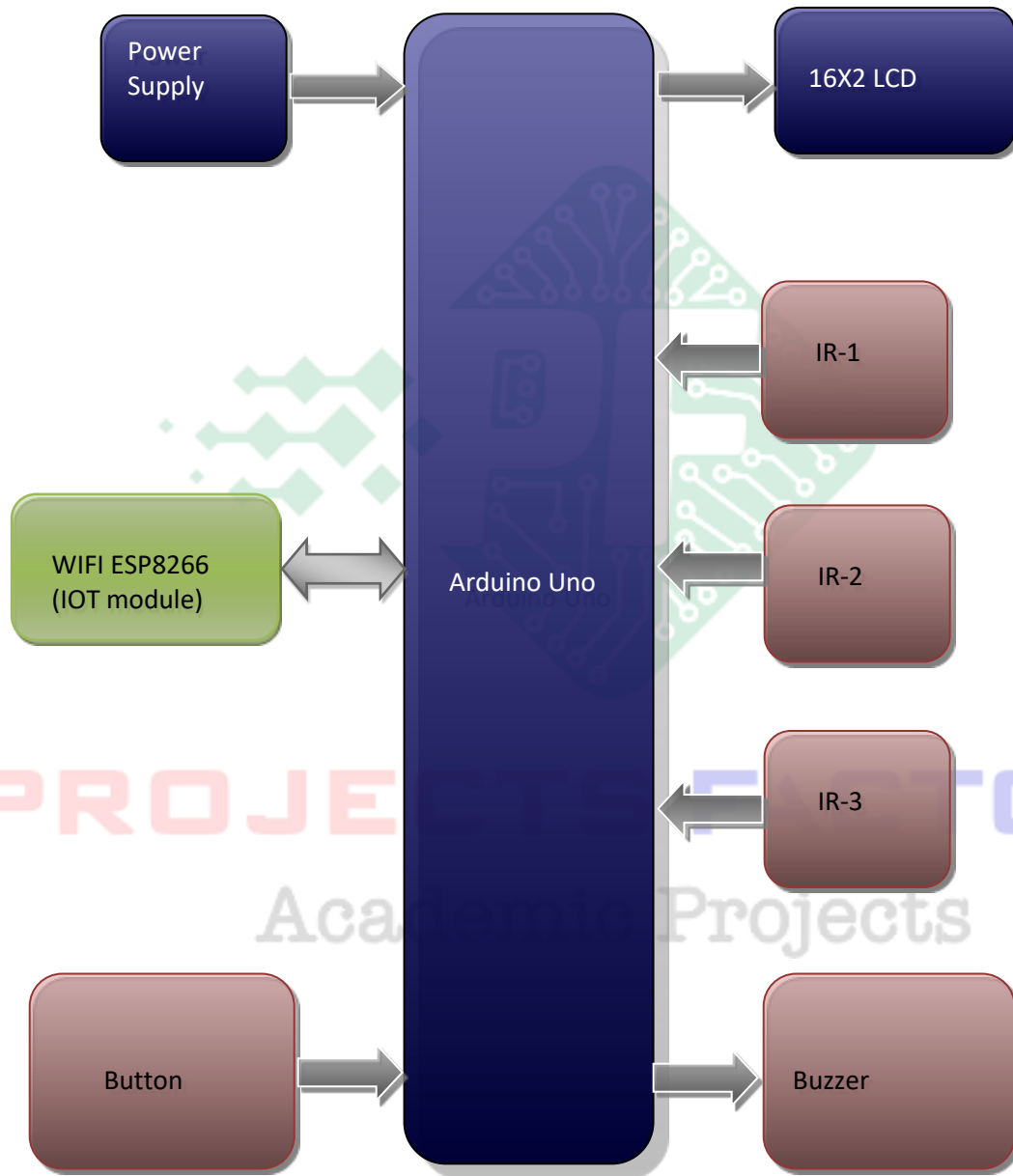
Arduino IDE

Proteus based circuit diagram

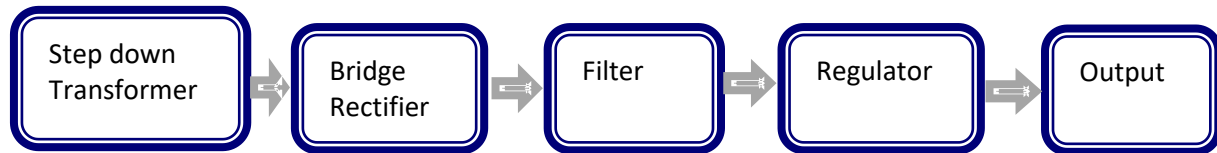
APPLICATIONS:

- Breath Respirator
- Digital spirometer
- IOT Lung health analyzer

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered WIFI (ESP8266/IOT) module interfacing
- IR sensors, Button and Buzzer Interfacing

PROJECTS FACTORY
Academic Projects