## ULTRASONIC SENSOR

```
#include "NewPing.h"
#define TRIGGER_PIN 13
#define ECHO_PIN 12
#define MAX_DISTANCE 400
NewPing sonar(TRIGGER_PIN, ECHO_PIN, MAX_DISTANCE);
float duration, distance;
 void setup()   {
        Serial.begin(115200);  }
void loop()
{       distance = sonar.ping_cm();
        Serial.print("Distance = ");
  Serial.print(distance*10);
         if (distance >=400 || distance <=5)
{  Serial.print("out of range");
}                Serial.print(distance);
                 Serial.println(" mm");
        delay(1000); }
```

## TEMP AND HUM disp serial board

```
#include "DHT.h"

#define DHTPIN 4

#define DHTTYPE DHT11

DHT dht (DHTPIN, DHTTYPE);

float h,t;

void setup()  {

 Serial.begin(115200);  }

void loop() // multiple execution

{  h = dht.readHumidity();

  t = dht.readTemperature();

 Serial.print("temperature:");

 Serial.println(t);

 Serial.print("Humidity:");

 Serial.println(h);

 delay(1000);  }
```

## BLUETOOTH LIGHT ON OFF

```
#include "BluetoothSerial.h"
#if !defined(CONFIG_BT_ENABLED) || !defined(CONFIG_BLUEDROID_ENABLED)
#error Bluetooth is not enabled! Please run `make menuconfig` to and enable it
#endif
BluetoothSerial SerialBT;
String state;  void setup() {
pinMode(2, OUTPUT);   pinMode(4, OUTPUT);
Serial.begin(115200);  SerialBT.begin("umesh");
Serial.println("The device started, now you can pair it with bluetooth!");
} void loop()  {  if (Serial.available()) {
SerialBT.write(Serial.read());
Serial.println("hello"); }
if (SerialBT.available())  {
state=SerialBT.read();
Serial.print("State :");   Serial.println(state);
if (state.equals("55"))  {
digitalWrite(2, HIGH);   Serial.println("Light On"); }
else if (state.equals("56")){
digitalWrite(2, LOW);       Serial.println("Light Off"); }  }
state="";  delay(1000);   }
```

## TEMP IN CLOUD for app also

```
#include <WiFi.h>
#include "DHT.h"
#define DHTPIN 13
#define DHTTYPE DHT11
DHT dht (DHTPIN, DHTTYPE);
const char* ssid     = "paramesh";
const char* password ="connectchesko";
const char* host = "api.thingspeak.com";
const char* privateKey = "AWP1OE9EFUY0QIPW";//read key
const char* privateKey1 = "8NEU7G8XEKAGEG55";//write key
float h,t;
void setup() {
  Serial.begin(115200);
  dht.begin();  delay(10);
  Serial.print("Connecting to ");
  Serial.println(ssid);
  WiFi.begin(ssid, password);
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);    Serial.print("");  }
  Serial.println("");     Serial.println("WiFi connected");
  Serial.println("IP address: ");
```

```
  Serial.println(WiFi.localIP());   }
void loop()  {  h = dht.readHumidity();
  t = dht.readTemperature();
  Serial.print("temperature:");  Serial.println(t);
  Serial.print("Humidity:");
  Serial.println(h);  upload();   delay(100);  }
void upload()  {  Serial.print("connecting to ");
  Serial.println(host);    WiFiClient client;  const int httpPort = 80;
  if (!client.connect(host, httpPort)) {
    Serial.println("connection failed");
    return;   }  String url = "/update";
  url += "?api_key=";  url += privateKey1;
  url += "&field1=";  url += t;
  url += "&field2=";   url += h;   Serial.print("Requesting URL: ");
  Serial.println(url);
  client.print(String("GET ") + url + " HTTP/1.1\r\n" +
               "Host: " + host + "\r\n" +
               "Connection: close\r\n\r\n");
  delay(1000);  while(client.available())   {
  String line1 = client.readStringUntil('\r');
  Serial.print(line1);  }   Serial.println();
  Serial.println("closing connection");   }
```

## WIFI LIGHT ON OFF

```
#include <ThingSpeak.h>  #include <WiFi.h>

WiFiClient client;

const char* ssid = "digAbug";

const char* password = "digabug@9";

const char* host = "api.thingspeak.com";

const char* privateKey = "ZKGM9KOBPPJ76UA9";//read key

const char* privateKey1 = "J9CXGI82A81Z6OXT";//write key

void setup()  {  Serial.begin(115200);

 pinMode(4, OUTPUT);

 ThingSpeak.begin(client);

 delay(10);

 Serial.println();

 Serial.println();

 Serial.print("Connecting to ");

 Serial.println(ssid);

 WiFi.begin(ssid, password);

 while (WiFi.status() != WL_CONNECTED){

 delay(500);

 Serial.print(".");

 }

 Serial.println("");
```

```
 Serial.println("WiFi connected");
 Serial.println("IP address: ");
 Serial.println(WiFi.localIP());   }        void loop() {
int d= ThingSpeak.readIntField( 1304610,1);
Serial.print(d);
if(d==1)    {       digitalWrite(4,HIGH);
Serial.print("LED ON");
Serial.println("");     }     if(d==0)
{digitalWrite(4,LOW);
Serial.print("LED OFF");
Serial.println("");  }   delay(1000);  }
```