

## Appendix C. Code for the communication between Blynk server and wireless sensors

**Listing A.** Arduino code for communication between Blynk server and wireless sensors

```
#define BLYNK_TEMPLATE_ID "TMPLiQfymOsk"
#define BLYNK_DEVICE_NAME "MuhammadDevice"
//
//#define BLYNK_TEMPLATE_ID "TMPLiQfymOsk"
//#define BLYNK_DEVICE_NAME "MuhammadDevice"
// Fill-in information from your Blynk Template here
//#define BLYNK_TEMPLATE_ID          "TMPLxxxxxx"
//#define BLYNK_DEVICE_NAME          "Device"

#define BLYNK_FIRMWARE_VERSION      "0.1.0"
#define BLYNK_PRINT Serial
//#define BLYNK_DEBUG
#define APP_DEBUG

// Uncomment your board, or configure a custom board in Settings.h
//#define USE_SPARKFUN_BLYNK_BOARD
//#define USE_NODE_MCU_BOARD
//#define USE_WITTY_CLOUD_BOARD
//#define USE_WEMOS_D1_MINI

#include "BlynkEdgent.h"

#include "DHT.h"
#include <Wire.h>
#include "MMA7660.h"
MMA7660 accelemeter;

#define DHTPIN D7      // Digital pin connected to the DHT sensor

// Uncomment whatever type you're using!
//#define DHTTYPE DHT11   // DHT 11
#define DHTTYPE DHT22   // DHT 22  (AM2302), AM2321
//#define DHTTYPE DHT21   // DHT 21 (AM2301)

DHT dht(DHTPIN, DHTTYPE);
////////////////////////////////////

//ddd();
```

```

void setup()
{
  Serial.begin(115200);
  delay(100);

  BlynkEdgent.begin();

  // BlynkEdgent.begin();

  accelemereter.init();

  Serial.println(F("DHTxx test!"));

  dht.begin();
}

void loop() {
  BlynkEdgent.run();
  ddd();
  Grov();
}

//////////
void ddd(){

  // Reading temperature or humidity takes about 250 milliseconds!
  // Sensor readings may also be up to 2 seconds 'old' (its a very slow sensor)
  float h = dht.readHumidity();
  // Read temperature as Celsius (the default)
  float t = dht.readTemperature();
  // Read temperature as Fahrenheit (isFahrenheit = true)
  float f = dht.readTemperature(true);

  // Check if any reads failed and exit early (to try again).
  if (isnan(h) || isnan(t) || isnan(f)) {
    Serial.println(F("Failed to read from DHT sensor!"));
    return;
  }

  // Compute heat index in Fahrenheit (the default)
  float hif = dht.computeHeatIndex(f, h);
  // Compute heat index in Celsius (isFahreheit = false)
  float hic = dht.computeHeatIndex(t, h, false);
  Serial.print(F("Humidity: "));
  Serial.print(h);
  Serial.print(F("%  Temperature: "));

```

```

Serial.print(t);
Serial.print(F("°C "));
Serial.print(f);
Serial.print(F("°F  Heat index: "));
Serial.print(hic);
Serial.print(F("°C "));
Serial.print(hif);
Serial.println(F("°F"));

    // You can send any value at any time.
    // Please don't send more that 10 values per second.
    Blynk.virtualWrite(V1, h);
    Blynk.virtualWrite(V0, t);
}
void Grov()
{
    int8_t x;
    int8_t y;
    int8_t z;
    float ax,ay,az;
    accelerometer.getXYZ(&x,&y,&z);
    Serial.print("x = ");
    Serial.println(x);
    Serial.print("y = ");
    Serial.println(y);
    Serial.print("z = ");
    Serial.println(z);

    accelerometer.getAcceleration(&ax,&ay,&az);
    Serial.println("accleration of X/Y/Z: ");
    Serial.print(ax);
    Serial.println(" g");
    Serial.print(ay);
    Serial.println(" g");
    Serial.print(az);
    Serial.println(" g");
    Serial.println("*****");

    Blynk.virtualWrite(V2, ax);
    Blynk.virtualWrite(V3, ay);
    Blynk.virtualWrite(V4, az);
    delay(50);
}

```