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LAMPIRAN A
Program Arduino IDE

```
#include <FirebaseESP32.h>
//library
#include <WiFi.h>

//Wifi
#define FIREBASE_HOST "https://pemmograman-ed872-default-rtdb.asia-southeast1.firebasedatabase.app/"
#define FIREBASE_AUTH "KOfs6lVUwvqQ6P2FagPxlADCJDAOZqZUUtEB83l1"
#define WIFI_SSID "aku"
#define WIFI_PASSWORD "tampansekali"



//Define FirebaseESP32 data object
FirebaseData firebaseData;
FirebaseJson json;
FirebaseJson json2;
FirebaseJson json3;


//BPM
boolean countStatus;
int beat,bpm1,bpm;
unsigned long millisBefore;

//v02max
int vo;


//tekanan
float sistole, lastmmhg, diastole, mmhg, mmhgx;
int mark = 0;
int sistolex,diastolex;
float dataadc,adc,kPa;
```

```
//pompa
int a;
const int b = 5;

void setup()
{
  pinMode(b,OUTPUT);

  Serial.begin(115200);



  WiFi.begin(WIFI_SSID, WIFI_PASSWORD);
  Serial.print("Connecting to Wi-Fi");
  while (WiFi.status() != WL_CONNECTED)
  {
    Serial.print(".");
    delay(300);
  }
  Serial.println();
  Serial.print("Connected with IP: ");
  Serial.println(WiFi.localIP());
  Serial.println();

  Firebase.begin(FIREBASE_HOST, FIREBASE_AUTH);
  Firebase.reconnectWiFi(true);

  //Set database read timeout to 1 minute (max 15 minutes)
  Firebase.setReadTimeout(firebaseData, 1000 * 60);
  //tiny, small, medium, large and unlimited.
  //Size and its write timeout e.g. tiny (1s), small (10s), medium (30s)
and large (60s).
  Firebase.setwriteSizeLimit(firebaseData, "tiny");

  /*
    This option allows get and delete functions (PUT and DELETE
HTTP requests) works for device connected behind the
    Firewall that allows only GET and POST requests.
```

```
  Firebase.enableClassicRequest(firebaseData, true);
 */

 //String path = "/data";


 Serial.println("------------------------------------");
 Serial.println("Connected...");

;


}

void kondisi1 () {
  // read the input on analog pin 0:
 int sensorValue = analogRead(A0);
 Serial.print("sensorValue : ");
 Serial.println(sensorValue);
 // print out the value you read:
 //Serial.println(sensorValue);
 if (countStatus == 0) {
  if (sensorValue > 600) {
   countStatus = 1;
   beat++;
   Serial.println("Beat Detected!");
   Serial.print("Beat : ");
   Serial.println(beat);
  }
 } else{
  if (sensorValue < 500) {
   countStatus = 0;
  }
 }
 if (millis()-millisBefore>60000){
  bpm=beat*4;
  beat=0;
  Serial.print("BPM : ");
```

```
    Serial.println(bpm);
    millisBefore=millis();

  }
   if (bpm > 60) {
      vo = 15*(200/bpm);
      Serial.println(vo);
    }
    else {
      Serial.print("No V02Max");
  }
  delay(1);        // delay in between reads for stability
}

void prs(){

  if (a==1) {
  digitalWrite(b,HIGH);
  dataadc = analogRead(A3);
  mmhgx = (dataadc - 46.222) / 3.2;
  mmhg = (dataadc - 46.222) / 3.2;
  Serial.print("MMhg : ");
Serial.println(mmhg);
if((mmhg >= mmhgx + 10)&&(mmhg > 100)&&(mark == 0)){
//digitalWrite(motor,LOW);
Serial.println("SISTOLE");
sistole = mmhg;
mark = 2;
digitalWrite(b,LOW);
}

 mmhg = (dataadc - 46.222) / 3.2;

if((mmhg >= mmhgx + 10)&&(mmhg > 100)&&(mark == 0)){
//digitalWrite(motor,LOW);
Serial.println("SISTOLE");
sistole = mmhg;
mark = 2;
digitalWrite(b,LOW);
```

```
}
if((mmhg >= mmhgx + 5)&&(mmhg > 50)&&(mmhg < 90)&&(mark
== 2)){
//digitalWrite(motor,LOW);
Serial.println("DIASTOLE");
diastole = mmhg;
mark = 3;
mmhgx = mmhg;



if((mark == 3)&&(mmhg < 50)){
delay(1000);
mark = 0;
sistolex = sistole;
diastolex = diastole;
digitalWrite(b,LOW);
}


}

delay(1);
  }

else {
  digitalWrite(b,LOW);
}
}


void loop() {



if (Firebase.getInt(firebaseData,"Kipas")){
    a = firebaseData.intData();
    Serial.println(a);
  }
```

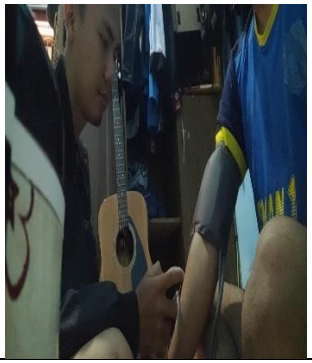
```
  prs();
  kondisi1();


 json.set("/data", bpm);
 json2.set("/data2",mmhg);
 json3.set("/data3", vo);

 Firebase.updateNode(firebaseData, "Sensor", json);
 Firebase.updateNode(firebaseData, "Sensor 2", json2);
 Firebase.updateNode(firebaseData, "Sensor 3", json3);

}
```

LAMPIRAN B
Dokumentasi Kegiatan

<table>
<tr><th colspan="2">Pengambilan Data Pengukuran</th></tr>
<tr><td>  </td><td>  </td></tr>
<tr><th colspan="2">Pengujian alat</th></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td></td><td></td></tr>
</table>

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Email	:muhamadariqrijalfaza@gmail.com
Telepon/Hp	: 089609116653
Hobi	: musik
Motto	: terus mencoba hal yang baru

Riwayat Pendidikan

Sekolah / Institusi/ Universitas	Jurusan	Periode
SD Negeri 3 Prapatan	-	2007-2013
SMP Negeri 1 Sumberjaya	-	2013-2016
SMA Negeri 1 Sumberjaya	IPA	2016-2019
Politeknik Negeri Cilacap	D3 Teknik Elektronika	2019-2022

Penulis telah mengikuti seminar Tugas Akhir pada 22 Agustus 2022 sebagai salah satu persyaratan untuk memperoleh gelar Ahli Madya (A.Md).