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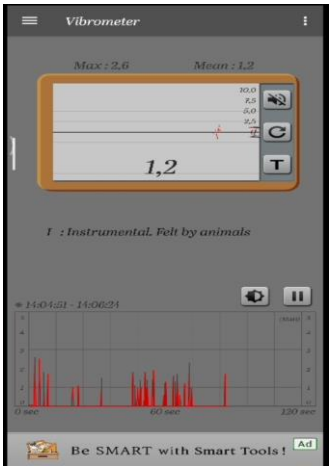
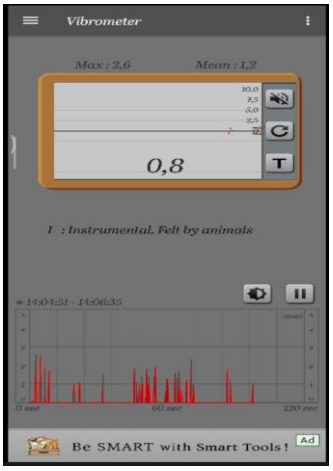
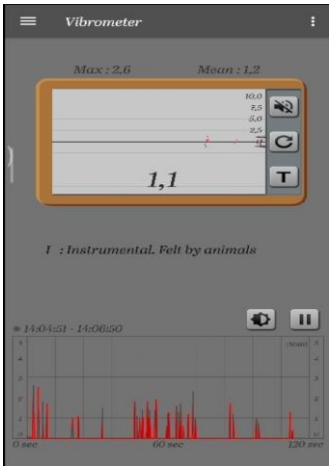
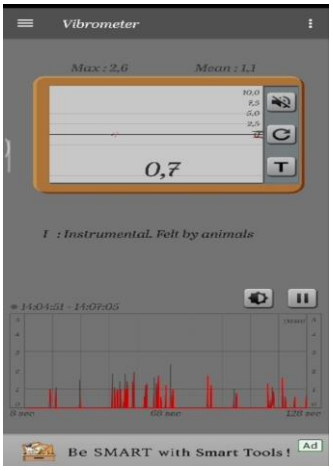
LAMPIRAN 1

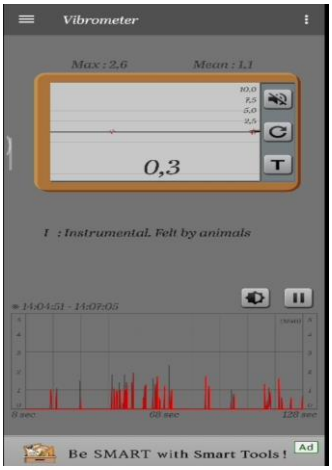
Gambar Data Aplikasi Vibrometer dan Dokumenter

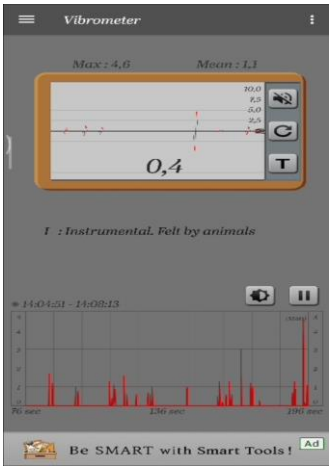


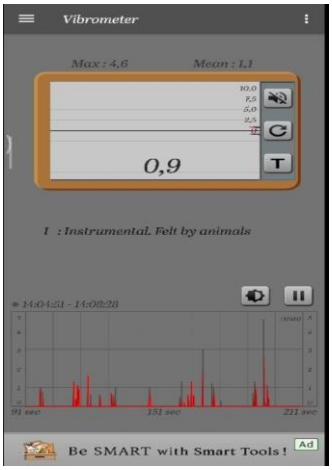


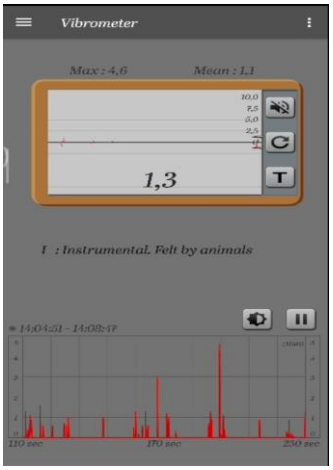


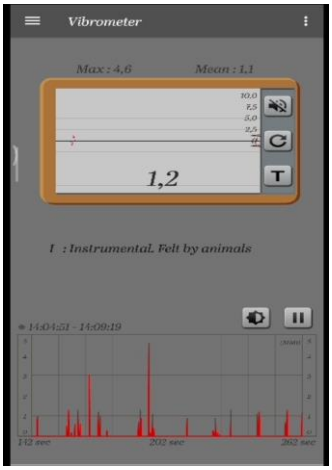


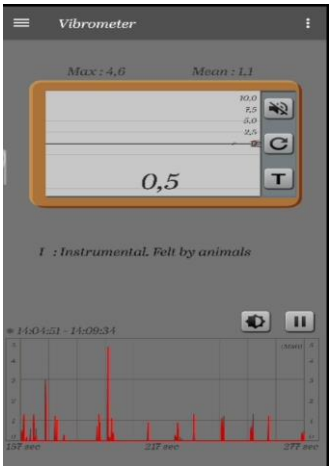

Vibrometer
Max : 2,6
Mean : 1,1
0,3
I : Instrumental. Felt by animals
Be SMART with Smart Tools !
Ad

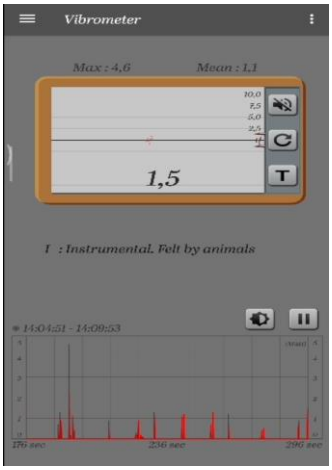

Vibrometer
Max : 4,6
Mean : 1,1
0,4
I : Instrumental. Felt by animals
Be SMART with Smart Tools !
Ad


Vibrometer
Max : 4,6
Mean : 1,1
0,9
I : Instrumental. Felt by animals
Be SMART with Smart Tools !
Ad

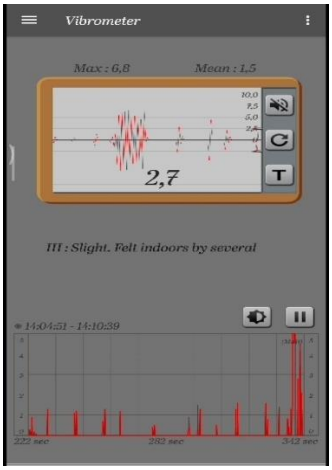

Vibrometer
Max : 4,6
Mean : 1,1
1,3
I : Instrumental. Felt by animals


Vibrometer
Max : 4,6
Mean : 1,1
1,2
I : Instrumental. Felt by animals
14:04:51 - 14:09:19
152 sec
202 sec
252 sec

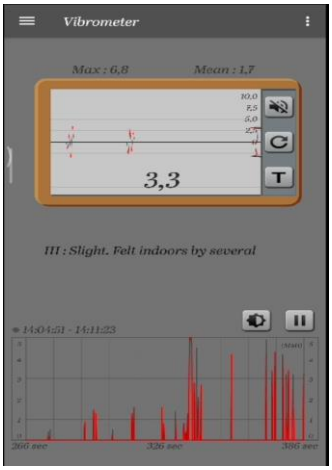

Vibrometer
Max : 4,6
Mean : 1,1
0,5
I : Instrumental. Felt by animals
14:04:51 - 14:09:34
157 sec
217 sec
277 sec

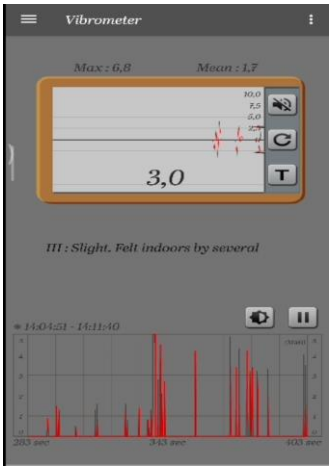

Vibrometer
Max : 4,6
Mean : 1,1
1,5
I : Instrumental. Felt by animals
14:04:51 - 14:09:53
176 sec
236 sec
296 sec

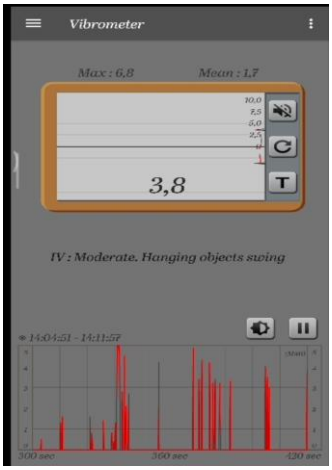

Vibrometer
Max : 4,6
Mean : 1,1
1,6
II : Weak. Felt indoors by a few people
14:04:51 - 14:10:22
205 sec
265 sec
325 sec

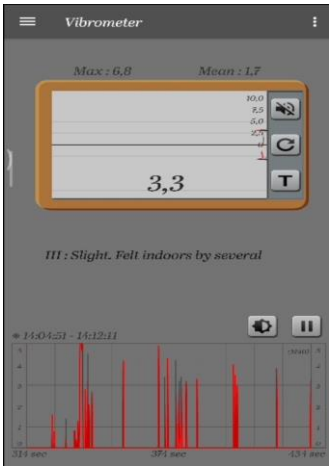

Vibrometer
Max : 6,8
Mean : 1,5
2,7
III : Slight. Felt indoors by several
14:04:51 - 14:10:39

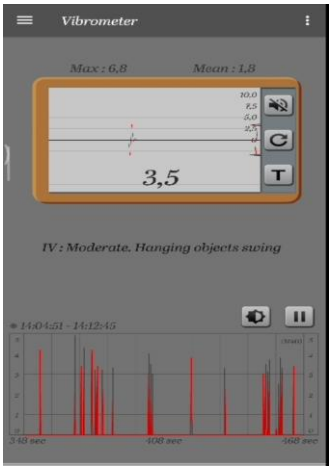

Vibrometer
Max : 6,8
Mean : 1,5
2,0
II : Weak. Felt indoors by a few people
14:04:51 - 14:10:52
Be SMART with Smart Tools !
Ad


Vibrometer
Max : 6,8
Mean : 1,7
3,3
III : Slight. Felt indoors by several
14:04:51 - 14:11:23

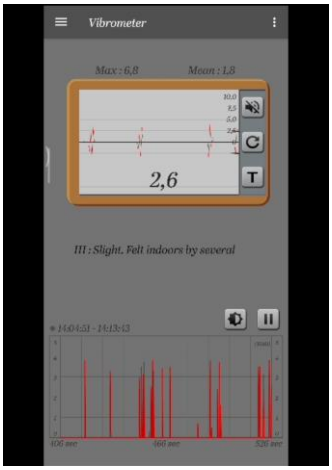

Vibrometer
Max : 6,8
Mean : 1,7
3,0
III : Slight. Felt indoors by several
14:04:51 - 14:11:40


Vibrometer
Max : 6,8
Mean : 1,7
3,8
IV : Moderate. Hanging objects swing

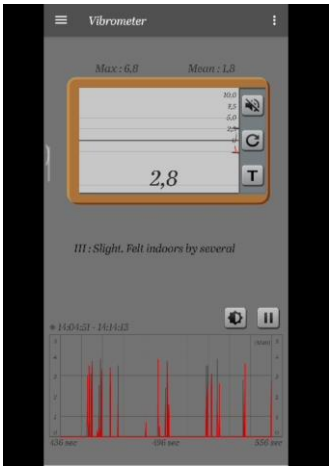

Vibrometer
Max : 6,8
Mean : 1,7
3,3
III : Slight. Felt indoors by several

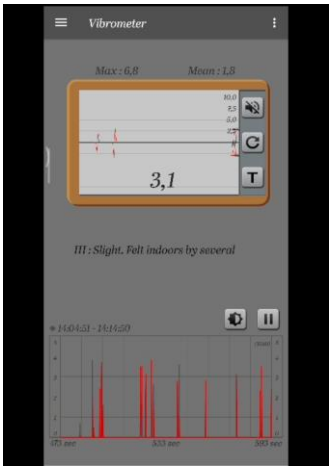

Vibrometer
Max : 6,8
Mean : 1,8
3,5
IV : Moderate. Hanging objects swing

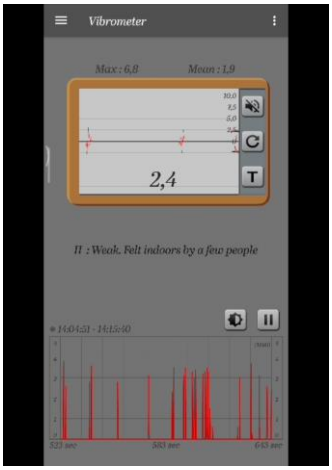

Vibrometer
Max : 6,8
Mean : 1,8
3,7
IV : Moderate. Hanging objects swing

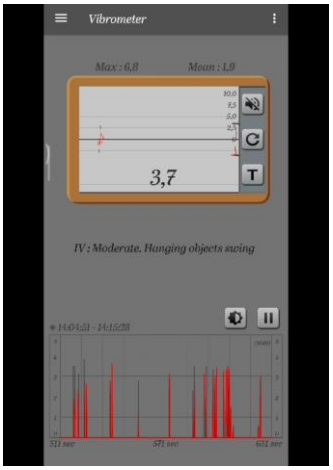

Vibrometer
Max : 6,8
Mean : 1,8
2,6
III : Slight. Felt indoors by several

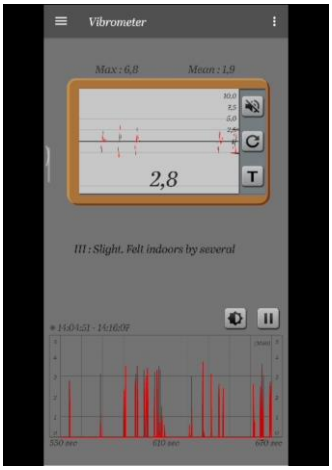

Vibrometer
Max : 6,8
Mean : 1,8
3,6
IV : Moderate. Hanging objects swing

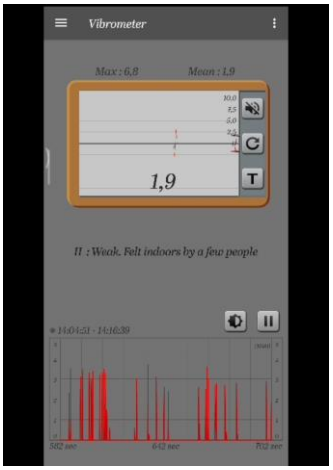

Vibrometer
Max : 6,8
Mean : 1,8
2,8
III : Slight. Felt indoors by several

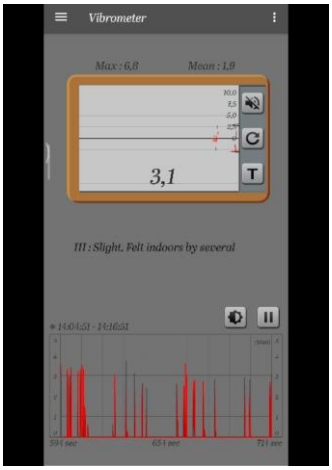

Vibrometer
Max : 6,8
Mean : 1,8
3,1
III : Slight. Felt indoors by several

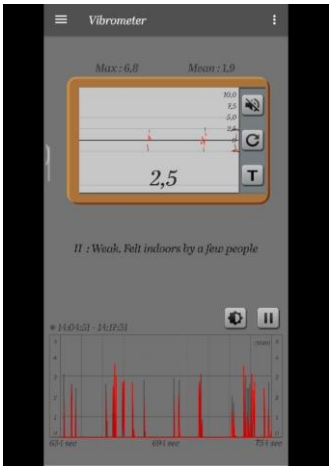

Vibrometer
Max : 6,8
Mean : 1,9
2,4
II : Weak. Felt indoors by a few people

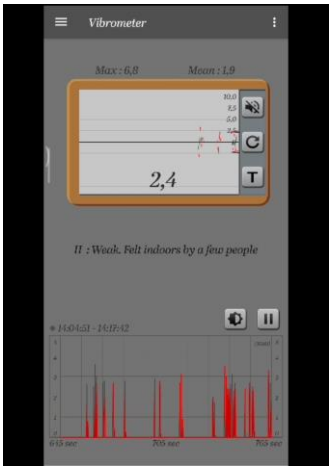

Vibrometer
Max : 6,8
Mean : 1,9
3,7
IV : Moderate. Hanging objects swing

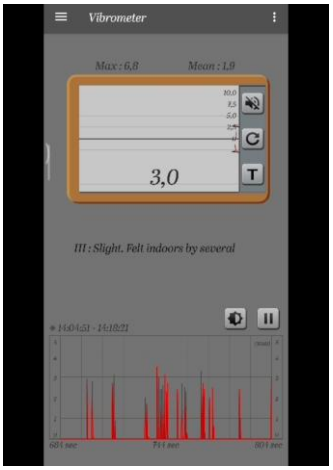

Vibrometer
Max : 6,8
Mean : 1,9
2,8
III : Slight. Felt indoors by several

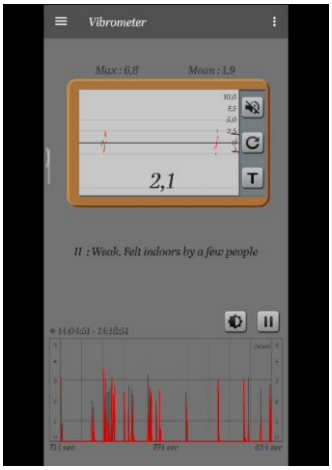

Vibrometer
Max : 6,8
Mean : 1,9
1,9
II : Weak. Felt indoors by a few people

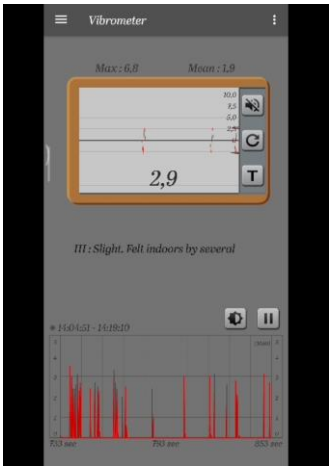

Vibrometer
Max : 6,8
Mean : 1,9
3,1
III : Slight. Felt indoors by several

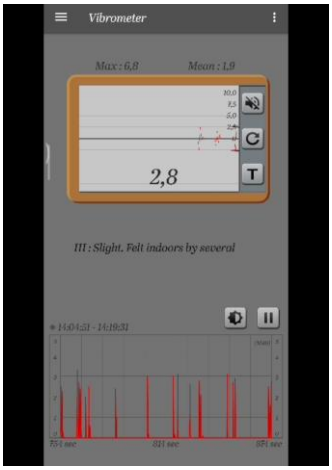

Vibrometer
Max : 6,8
Mean : 1,9
2,5
II : Weak. Felt indoors by a few people


Vibrometer
Max : 6,8
Mean : 1,9
2,4
II : Weak. Felt indoors by a few people

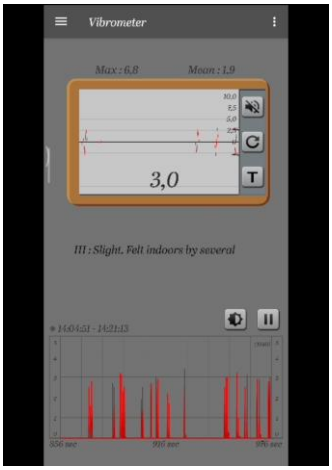

Vibrometer
Max : 6,8
Mean : 1,9
3,0
III : Slight. Felt indoors by several

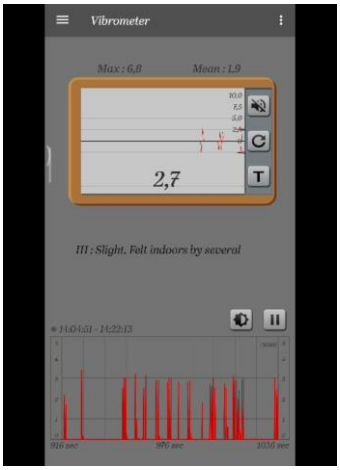

Vibrometer
Max : 6,8
Mean : 1,9
2,1
II : Weak. Felt indoors by a few people

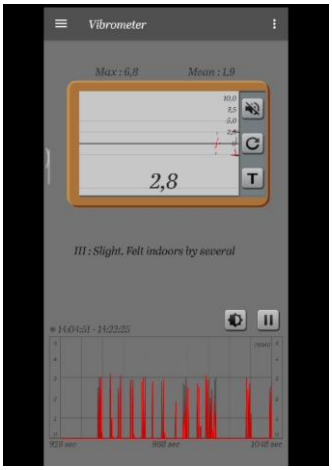

Vibrometer
Max : 6,8
Mean : 1,9
2,9
III : Slight. Felt indoors by several


Vibrometer
Max : 6,8
Mean : 1,9
2,8
III : Slight. Felt indoors by several

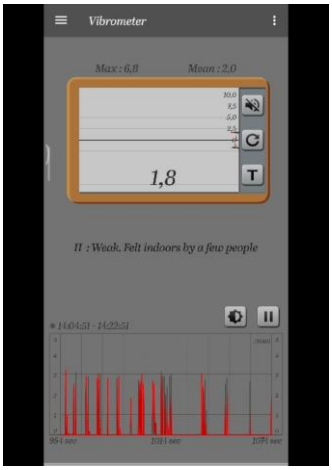

Vibrometer
Max : 6,8
Mean : 1,9
3,4
III : Slight. Felt indoors by several

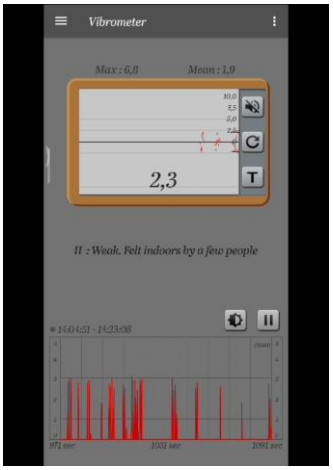

Vibrometer
Max : 6,8
Mean : 1,9
3,0
III : Slight. Felt indoors by several


Vibrometer
Max : 6,8
Mean : 1,9
2,7
III : Slight. Felt indoors by several


Vibrometer
Max : 6,8
Mean : 1,9
2,8
III : Slight. Felt indoors by several


Vibrometer
Max : 6,8
Mean : 2,0
2,6
III : Slight. Felt indoors by several


Vibrometer
Max : 6,8
Mean : 2,0
1,8
II : Weak. Felt indoors by a few people


Vibrometer
Max : 6,8
Mean : 1,9
2,3
II : Weak. Felt indoors by a few people

LAMPIRAN 2

Skrip Perhitungan pada Softwarre Matlab

```
%PROGRAM INPUT DATA DAN RUN METODE INTERPOLASI NEWTON

% Input data

xData = [11664 14004 19154 20543 21732 22994
23131 26255 26773 27422 28509 29641 30309 32653
33157 36352 36803 37677 38159 38924 39180 40038
40470 41404 41683 43360 44289 44511 44933 46120
46299 46700 47468 48863 49529 50270 50878 51501
51890 53347 53668 53718]; % data sumbu x= waktu

yData = [1.2 0.8 1.1 0.7 0.3 0.4 0.9 1.3 1.2 0.5 1.5 1.6 2.7 2 3.3
3 3.8 3.3 3.5 3.7 2.6 3.6 2.8 3.1 2.4 3.7 2.8 1.9 3.1 2.5 2.4 3 2.1 2.9 2.8
3.4 3 2.7 2.8 2.6 1.8 2.3 ]; % data sumbu y= jarak tempuh


% fungsi koefisien interpolasi Newton

A = polinom_newton_koefisien(xData,yData);



% Metode Interpolasi Newton

X = [11664 14004 19154 20543 21732 22994 23131
26255 26773 27422 28509 29641 30309 32653 33157
36352 36803 37677 38159 38924 39180 40038 40470
41404 41683 43360 44289 44511 44933 46120 46299
46700 47468 48863 49529 50270 50878 51501 51890
53347 53668 53718];

N = length(x);

Y = zeros(n,1);

For I = 1:n
```

```
Y(I,1) = polinom_newton(a,xData,x(i));

End


% Plot metode interpolasi Newton

Plot(x,y,'b+');hold on


%Plot data

Plot (xData,yData,'ko')

Grid on

Xlabel ('analog');ylabel('frekunsi')

Title ('prototipe pendeteksi getaran menggunakan sensor sw-420 berbasis mikrokontroler esp node mcu 32s')

Legend ('Interpolasi Newton','Data pengamatan')
```

LAMPIRAN 3

Program Gabungan Keseluruhan Alat

```
#include <Esp.h>;

#include <WiFi.h>;

#include <WiFiClient.h>;

#include <ThingSpeak.h>;


const char* ssid = "5"; //Your Network SSID wifi atau tetring hp

const char* password = "44444445"; //Your Network Password
      password


//int val;


int VIBRATION_SENSOR = 17;

int led_RED = 16;

int led_WHITE = 19;

int BUZZER = 18;

int val;


WiFiClient client;

unsigned long myChannelNumber = 2053416; //Your Channel Number
      (Without Brackets) CHANNEL DI THINGSPEAK
```

```
const char * myWriteAPIKey = "TP33L8M3BLDTSSZQ"; //Your
        Write API Key DI Thinkspeak


void setup()

{

Serial.begin(115200);    //Baudrate pada esp32

pinMode(VIBRATION_SENSOR, INPUT);

pinMode(led_RED, OUTPUT);

pinMode(led_WHITE, OUTPUT);

pinMode(BUZZER, OUTPUT);


digitalWrite(led_RED,LOW);

digitalWrite(led_WHITE,LOW);

digitalWrite(BUZZER,LOW);


delay(5000);

//koneksi ke wifi network bisa wifi bisa tetring dari hape

WiFi.begin(ssid, password);  //nama tetring, password

ThingSpeak.begin(client);

}

long TP_init()

  {
```

```
  delay(5000);

  long measurement=pulseIn (VIBRATION_SENSOR, HIGH);  //wait
        for the pin to get HIGH and returns measurement

  return measurement;

  }


void loop()


{

long measurement =TP_init();

  delay(5000);

  if(measurement >=500)    //500-1000

  {

    digitalWrite(led_RED,HIGH);

    digitalWrite(BUZZER,HIGH);

    digitalWrite(led_WHITE,LOW);

    delay(5000);

    Serial.print("measurment = ");

    Serial.println(measurement);

          ThingSpeak.writeField(myChannelNumber,      1,measurement,
        myWriteAPIKey);   //konek ke iOT thinkspeak

    delay(5000);
```

```
  }
  else
  digitalWrite(led_WHITE,HIGH);
  digitalWrite(led_RED,LOW);
  digitalWrite(BUZZER,LOW);
  delay(1000);
  Serial.print("measurment = ");
  Serial.println(measurement);
        ThingSpeak.writeField(myChannelNumber,      1,measurement,
         myWriteAPIKey);
  delay(1000);

}
```