

LAMPIRAN

1. Algoritma pemrograman *NodeMCU* menggunakan aplikasi Arduino IDE

```
#include <ESP8266WiFi.h>
```

```
#include <Wire.h>
```

```
#include <LiquidCrystal_I2C.h>
```

```
LiquidCrystal_I2C lcd(0x27, 16, 2);
```

```
String apiWritekey = "UDYMPZZQ86S7K9C6"; // replace with your  
THINGSPEAK WRITEAPI key here
```

```
const char* ssid = "MIFI M3Z"; // your wifi SSID name
```

```
const char* password = "1234567890" ;// wifi password
```

```
const char* server = "api.thingspeak.com";
```

```
int num_Measure = 128 ; // Set the number of measurements
```

```
int pinSignal = A0; // pin connected to pin O module sound sensor
```

```
long Sound_signal; // Store the value read Sound Sensor
```

```
long sum = 0 ; // Store the total value of n measurements
```

```
long level = 0 ; // Store the average value
```

```
int soundlow = 40;
```

```
int soundmedium = 55;
```

```
#define redLed D0 // Led in NodeMCU at pin GPIO16 (D0).
```

```
WiFiClient client;
```

```
void setup ()
```

```

{

Serial.begin(115200);

pinMode(redLed, OUTPUT);  // LED pin as output.

pinMode (pinSignal, INPUT); // Set the signal pin as input

'LiquidCrystal_I2C: :begin()';

WiFi.disconnect();

delay(10);

WiFi.begin(ssid, password);


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.print("NodeMcu connected to wifi...");

```

```

Serial.println(ssid);

Serial.println();

}

void loop ()
{
  // Performs 128 signal readings
  for ( int i = 0 ; i < num_Measure; i ++)
  {
    Sound_signal = analogRead (pinSignal);
    sum =sum + Sound_signal;
  }

  level = sum / num_Measure; // Calculate the average value

  Serial.print("Sound Level: ");
  lcd.print("Sound Level:");

  Serial.println (level);
  lcd.print(level);
  lcd.setCursor(14,0);
  lcd.print("dB");

  if(level<soundlow)

```

```

{

    lcd.setCursor(0,1);

    lcd.print("Intensity:Low");

    digitalWrite(redLed,LOW);

}

if(level>soundlow && level<soundmedium)

{

    lcd.setCursor(0,1);

    lcd.print("Intensity:Medium");

    digitalWrite(redLed,LOW);

}

if(level>soundmedium)

{

    lcd.setCursor(0,1);

    lcd.print("Intensity:High");

    digitalWrite(redLed,HIGH);

}

if (client.connect(server,80))

{

    String tsData = apiWritekey;

    tsData +="&field1=";

    tsData += String(level);

    tsData += "\r\n\r\n";

```

```

client.print("POST /update HTTP/1.1\n");

client.print("Host: api.thingspeak.com\n");

client.print("Connection: close\n");

client.print("X-THINGSPEAKAPIKEY: "+apiWritekey+"\n");

client.print("Content-Type: application/x-www-form-urlencoded\n");

client.print("Content-Length: ");

client.print(tsData.length());

client.print("\n\n"); // the 2 carriage returns indicate closing of Header fields &
starting of data

client.print(tsData);


Serial.print("Sound Level: ");

Serial.print(level);

Serial.println(" uploaded to Thingspeak server....");

}

client.stop();


Serial.println("Waiting to upload next reading...");

Serial.println();

// thingspeak needs minimum 15 sec delay between updates

delay(1000);

```

```

sum = 0 ; // Reset the sum of the measurement values

delay(200);

lcd.clear();

}

```

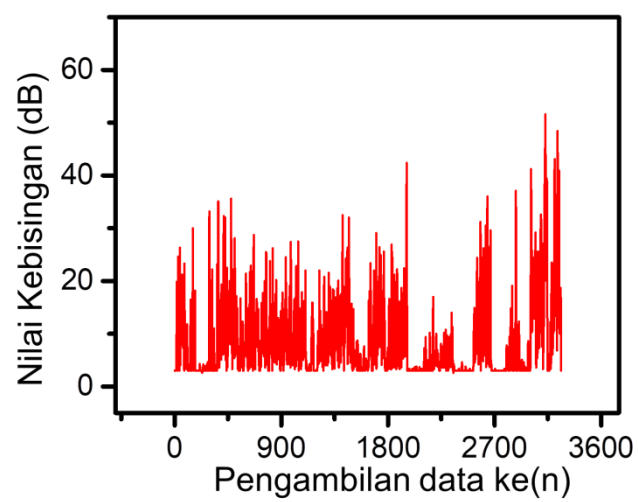
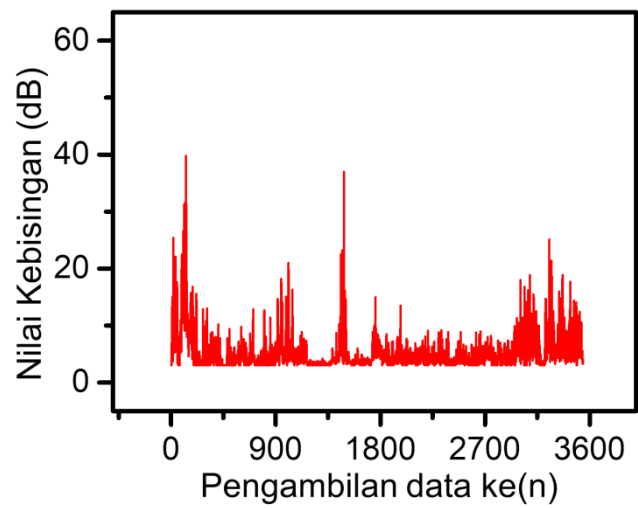
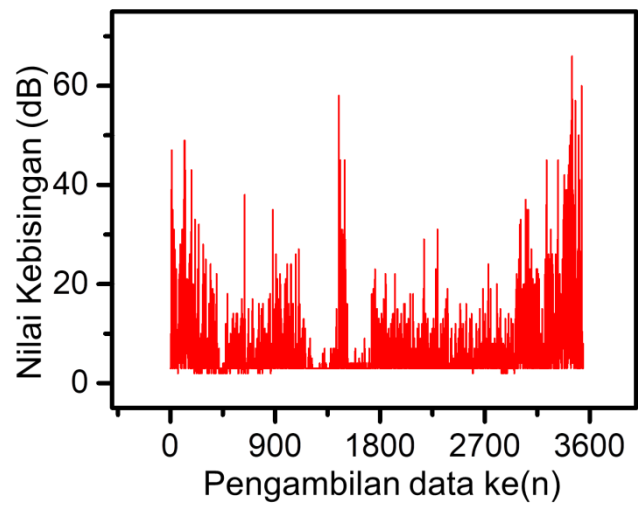
2. Gambar lembar kerja pada aplikasi Arduino IDE

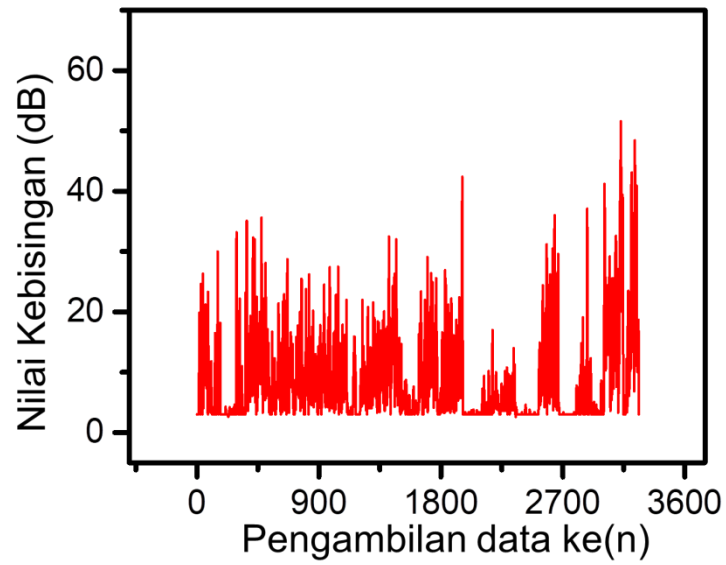


3. Gambar tampilan data pada widget layar ponsel

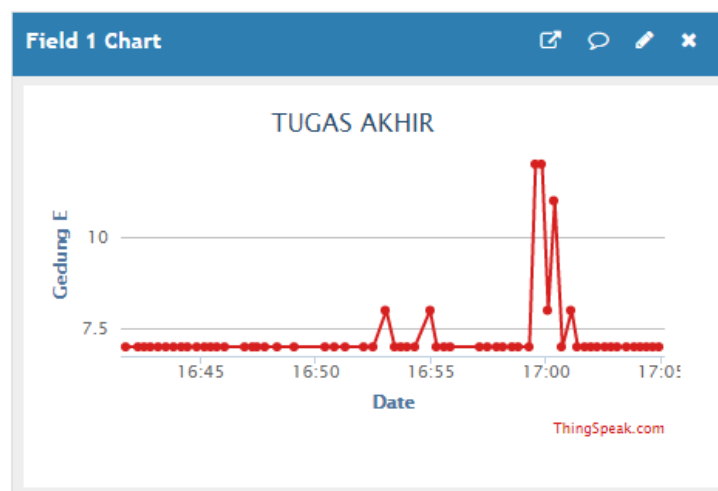
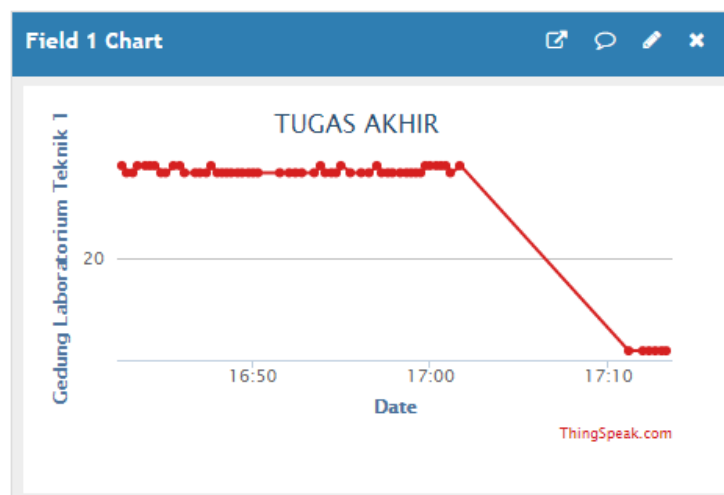


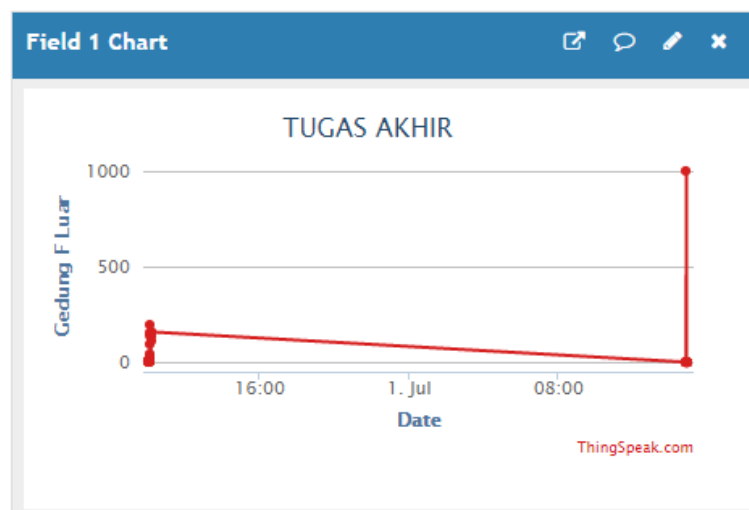
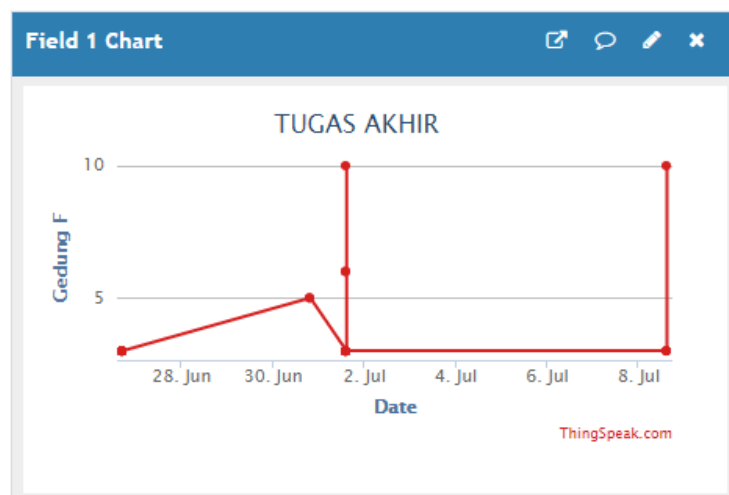
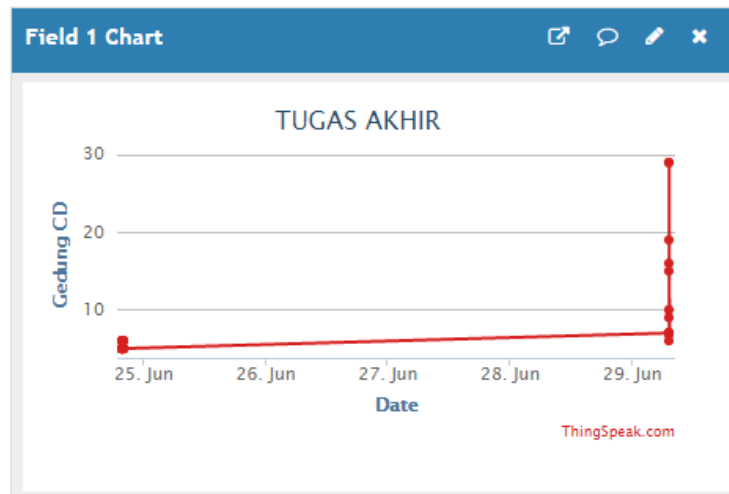
4. Grafik kebisingan di UIN RIL pergedung

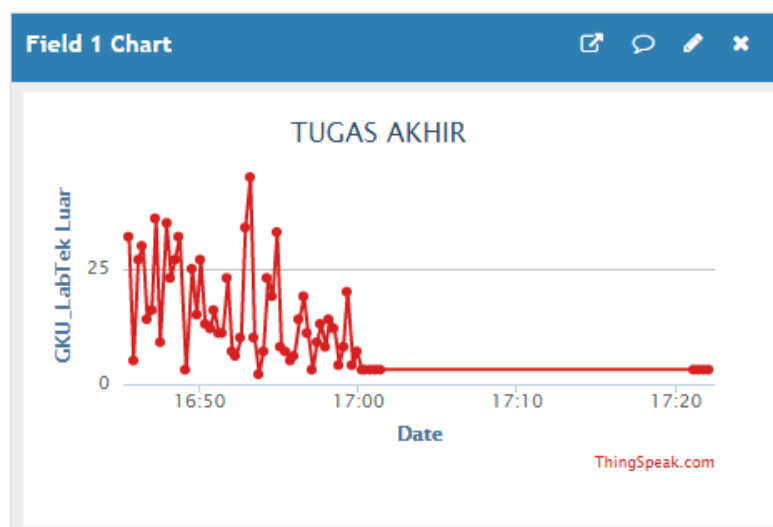
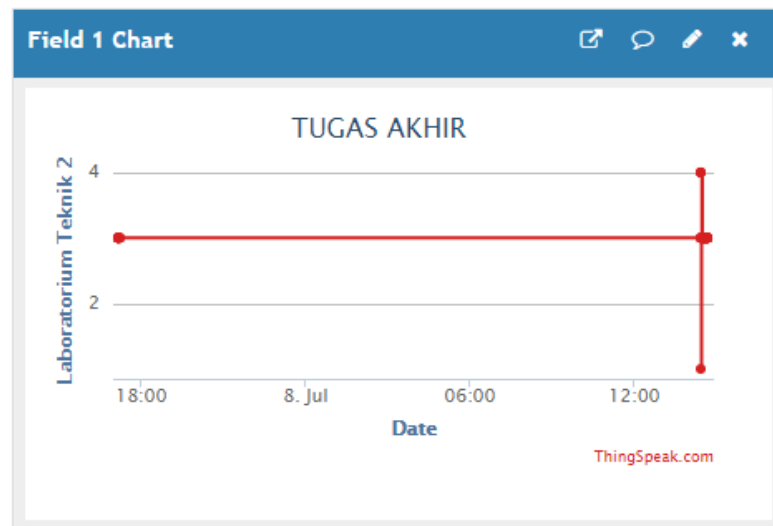
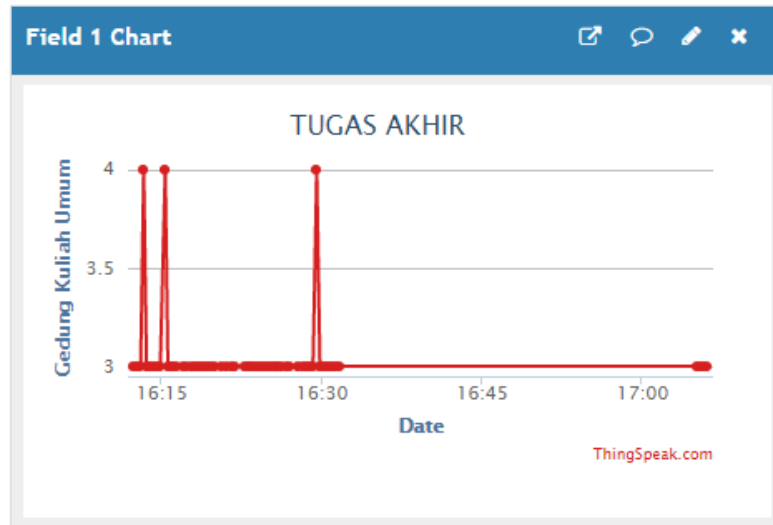


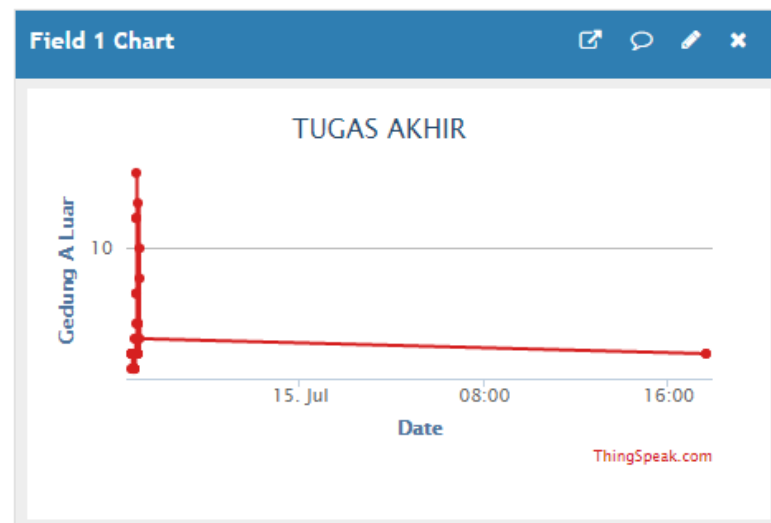
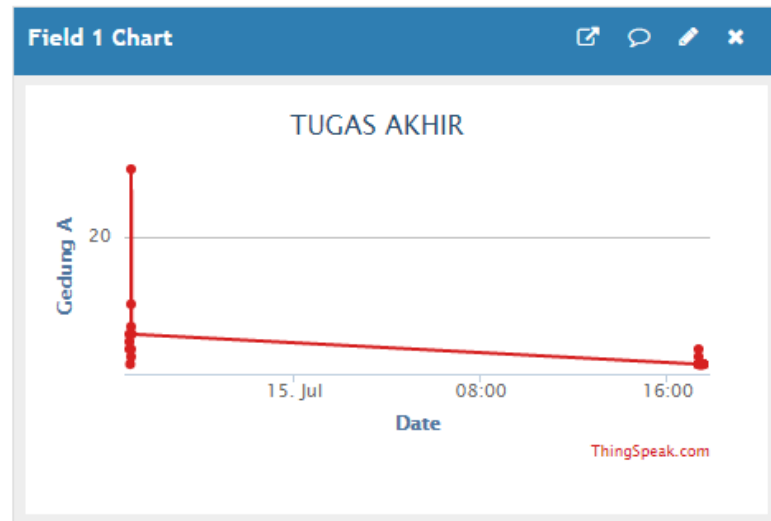
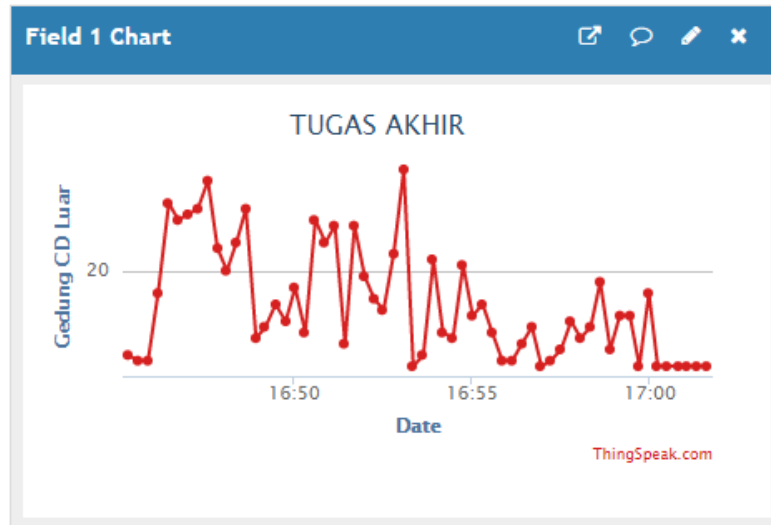


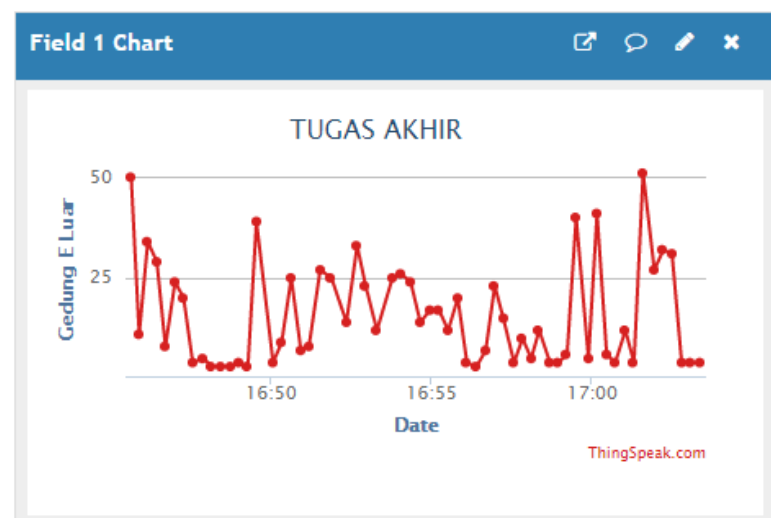
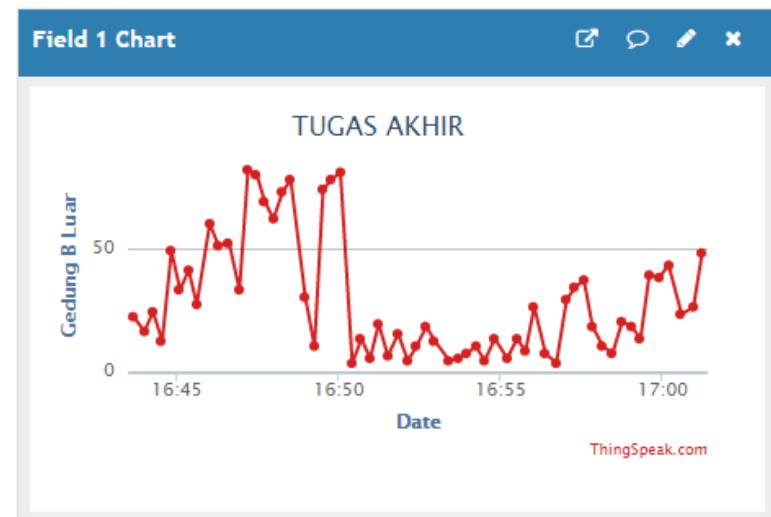
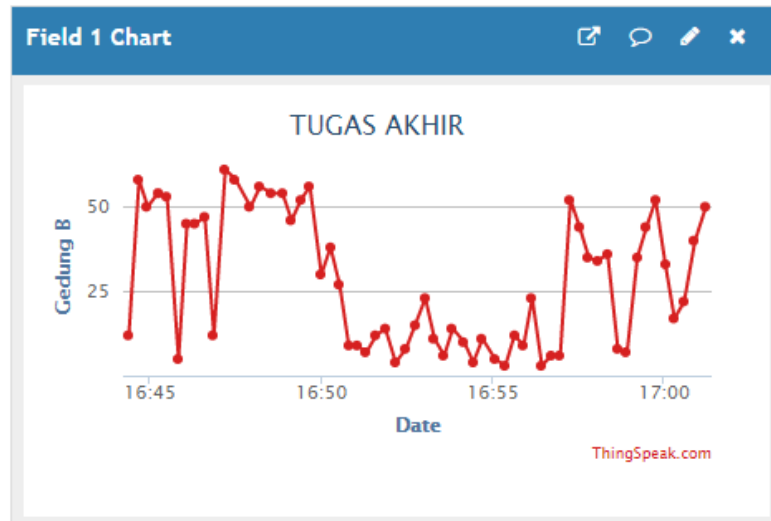
5. Grafik semua *channel* pada aplikasi *ThingSpeak*

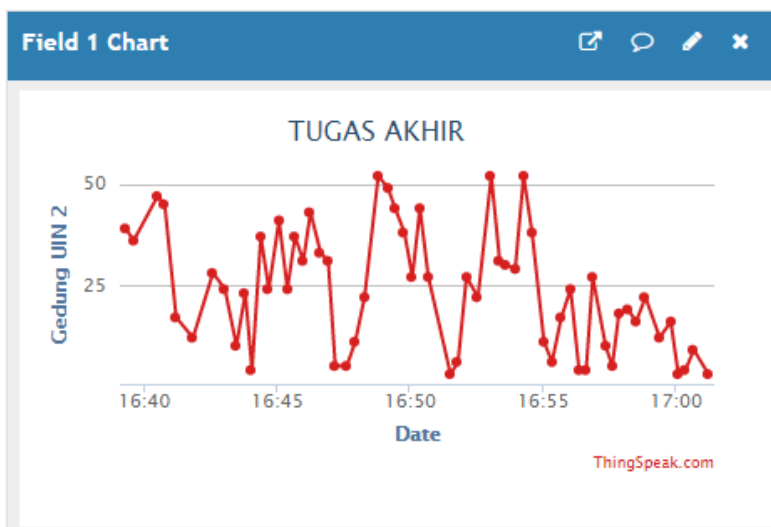
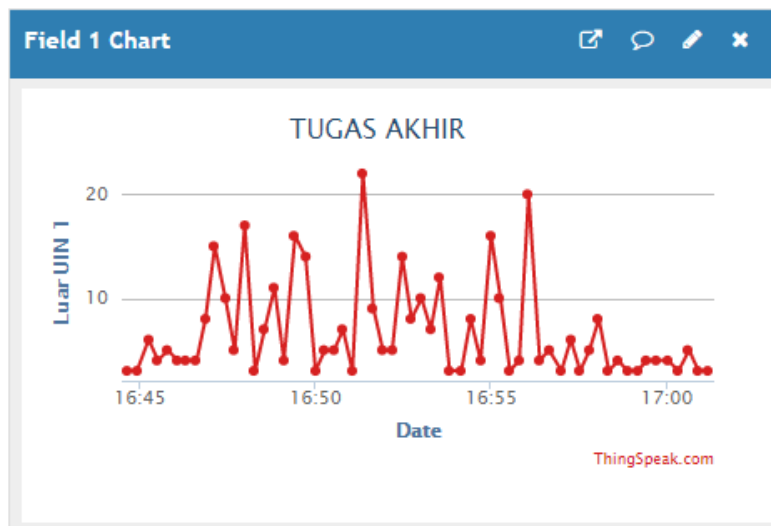
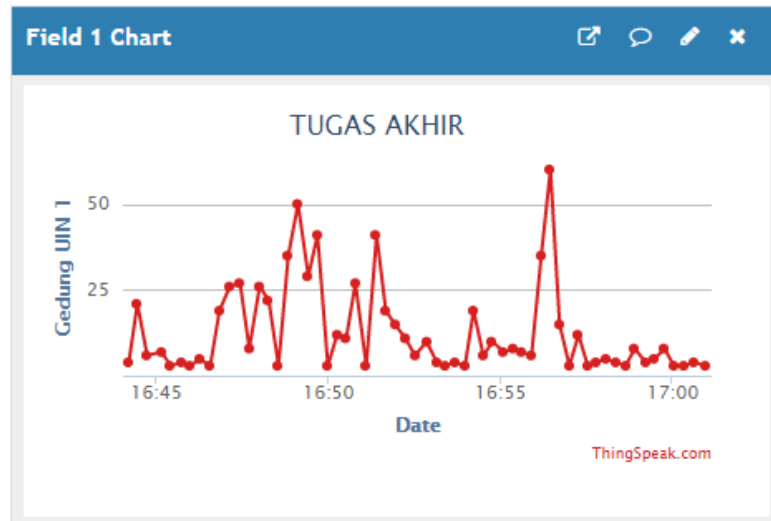


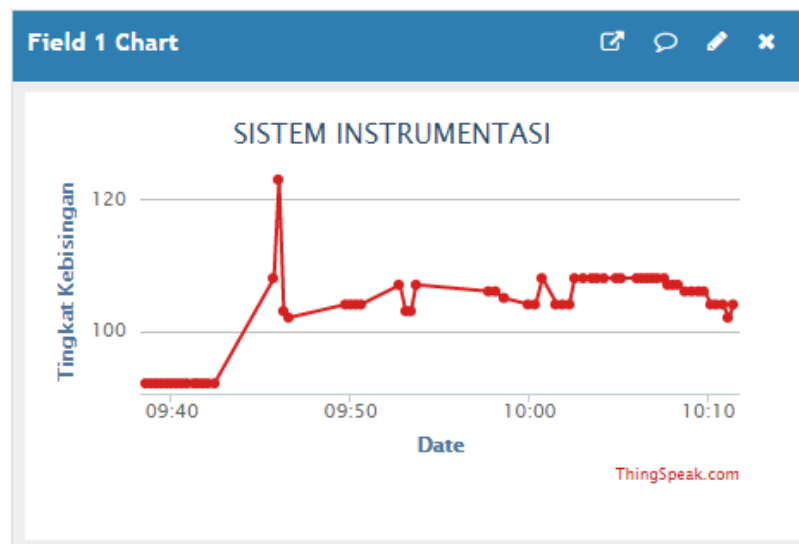
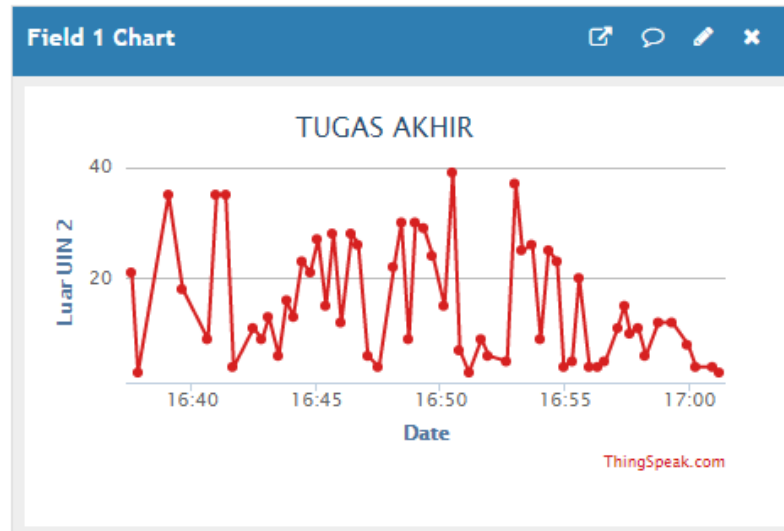












6. Data SPSS

1. Gd Labtek 1

Statistics

Data		
N	Valid	3346
	Missing	0
Mean		17.42
Median		5.00
Mode		5
Std. Deviation		17.277
Variance		298.481
Minimum		5
Maximum		54
Sum		58292

2. Gd E

Statistics

Data

N	Valid	2967
	Missing	0
Mean		7.85
Median		7.00
Mode		7
Std. Deviation		2.170
Variance		4.710
Minimum		6
Maximum		42
Sum		23278

3. Gd C-D

Statistics

Data

N	Valid	3376
	Missing	0
Mean		6.60
Median		6.00
Mode		5
Std. Deviation		1.762
Variance		3.104
Minimum		5
Maximum		27
Sum		22295

4. Gd F

Statistics

Data

N	Valid	3555
	Missing	0
Mean		10.81
Median		4.00
Mode		3
Std. Deviation		13.190
Variance		173.982
Minimum		2
Maximum		103
Sum		38426

5. Gd F Luar

Statistics

Data

N	Valid	544
	Missing	0
Mean		7.8290
Median		7.0000
Mode		7.00
Std. Deviation		4.46494
Range		90.00
Minimum		7.00
Maximum		97.00
Sum		4259.00

6. GKU

Statistics

Data

N	Valid	3289
	Missing	4
Mean		4.78
Median		3.00
Mode		3
Std. Deviation		4.988
Variance		24.879
Minimum		0
Maximum		76
Sum		15711

7. Gd Labtek 2

Statistics

Data

N	Valid	3011
	Missing	0
Mean		7.91
Median		3.00
Mode		3
Std. Deviation		14.756
Variance		217.740
Minimum		3
Maximum		93
Sum		23827

8. GKU Luar

Statistics

Data

N	Valid	3818
	Missing	0
Mean		4.55
Median		3.00
Mode		3
Std. Deviation		5.409
Variance		29.259
Minimum		2
Maximum		64
Sum		17355

9. Gd C-D Luar

Statistics

Data

N	Valid	3739
	Missing	0
Mean		5.32
Median		3.00
Mode		3
Std. Deviation		6.561
Variance		43.052
Minimum		2
Maximum		88
Sum		19885

10. Gd A

Statistics

Data

N	Valid	3641
	Missing	0
Mean		9.84
Median		3.00
Mode		3
Std. Deviation		12.429
Variance		154.476
Minimum		2
Maximum		91
Sum		35841

11. Gd A luar

Statistics

Data

N	Valid	3647
	Missing	0
Mean		6.77
Median		3.00
Mode		3
Std. Deviation		7.962
Variance		63.389
Minimum		2
Maximum		60
Sum		24688

12. Gd B

Statistics

Data

N	Valid	3493
	Missing	0
Mean		10.39
Median		4.00
Mode		3
Std. Deviation		13.303
Variance		176.957
Minimum		2
Maximum		81
Sum		36290

13. Gd B Luar

Statistics

Data

N	Valid	3503
	Missing	0
Mean		7.54
Median		3.00
Mode		3
Std. Deviation		9.622
Variance		92.576
Minimum		2
Maximum		82
Sum		26416

14. Gd E luar

Statistics

Data

N	Valid	3845
	Missing	0
Mean		8.85
Median		4.00
Mode		3
Std. Deviation		11.463
Variance		131.399
Minimum		3
Maximum		87
Sum		34020

15. Gd UIN 1

Statistics

Data

N	Valid	3545
	Missing	0
Mean		6.68
Median		4.00
Mode		3
Std. Deviation		6.777
Variance		45.929
Minimum		2
Maximum		66
Sum		23664

16. Gd UIN 1 Luar

Statistics

Data

N	Valid	3545
	Missing	0
Mean		5.47
Median		4.00
Mode		3
Std. Deviation		4.627
Variance		21.409
Minimum		2
Maximum		59
Sum		19406

17. Gd UIN 2

Statistics

Data

N	Valid	3262
	Missing	0
Mean		8.87
Median		4.00
Mode		3
Std. Deviation		9.453
Variance		89.364
Minimum		2
Maximum		63
Sum		28937

18. Gd UIN 2 Luar

Statistics

Data

N	Valid	3259
	Missing	0
Mean		6.71
Median		4.00
Mode		3
Std. Deviation		6.194
Variance		38.364
Minimum		2
Maximum		49
Sum		21865

19. Data Pembanding

Statistics

Data

N	Valid	1083
	Missing	0
Mean		68.54
Median		65.00
Mode		65
Std. Deviation		12.276
Variance		150.712
Minimum		1
Maximum		167
Sum		74232