

Program Arduino pada Sistem Keamanan Sepeda Motor

```
#include <SoftwareSerial.h>

#define NODEMCU_TX_PIN 5

#define NODEMCU_RX_PIN 4

SoftwareSerial nodeMCU(NODEMCU_RX_PIN, NODEMCU_TX_PIN); // RX, TX

#include <ESP8266WiFi.h>

#include "Adafruit_MQTT.h"

#include "Adafruit_MQTT_Client.h"

#define WLAN_SSID    "motor"

#define WLAN_PASS    "motor123"

#define AIO_SERVER    "io.adafruit.com"

#define AIO_SERVERPORT 1883          // use 8883 for SSL

#define AIO_USERNAME  "putri1108"

#define AIO_KEY        "aio_hnSh36UPELjyggk7cbFBFTWL171q"

/***** Global State (you don't need to change this!) *****/

// Create an ESP8266 WiFiClient class to connect to the MQTT server.
WiFiClient client;

// or... use WiFiClientSecure for SSL

//WiFiClientSecure client;

// Setup the MQTT client class by passing in the WiFi client and MQTT server and login
details.

Adafruit_MQTT_Client mqtt(&client, AIO_SERVER, AIO_SERVERPORT,
AIO_USERNAME, AIO_KEY);

// Setup a feed called 'photocell' for publishing.

// Notice MQTT paths for AIO follow the form: <username>/feeds/<feedname>
```

```

Adafruit_MQTT_Publish iot_lat = Adafruit_MQTT_Publish(&mqtt, AIO_USERNAME
"/feeds/lat");

Adafruit_MQTT_Publish iot_long = Adafruit_MQTT_Publish(&mqtt,
AIO_USERNAME "/feeds/long");

Adafruit_MQTT_Publish iot_count = Adafruit_MQTT_Publish(&mqtt,
AIO_USERNAME "/feeds/count");

// Setup a feed called 'onoff' for subscribing to changes.

Adafruit_MQTT_Subscribe iot_sistem = Adafruit_MQTT_Subscribe(&mqtt,
AIO_USERNAME "/feeds/sistem");

// Bug workaround for Arduino 1.6.6, it seems to need a function declaration
// for some reason (only affects ESP8266, likely an arduino-builder bug).
void MQTT_connect();

void setup() {
  Serial.begin(115200);
  nodeMCU.begin(9600);
  delay(10);

  Serial.println(F("Adafruit MQTT demo"));

  // Connect to WiFi access point.
  Serial.println(); Serial.println();
  Serial.print("Connecting to ");
  Serial.println(WLAN_SSID);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(5, OUTPUT);
  WiFi.begin(WLAN_SSID, WLAN_PASS);
  while (WiFi.status() != WL_CONNECTED) {
    Serial.print(".");
    digitalWrite(LED_BUILTIN, HIGH);

```

```

    delay(250);
    digitalWrite(LED_BUILTIN, LOW);
    delay(250);
}
Serial.println();

Serial.println("WiFi connected");
Serial.println("IP address: "); Serial.println(WiFi.localIP());

// Setup MQTT subscription for onoff feed.
mqtt.subscribe(&iot_sistem);
}

String data_sistem;
uint32_t x = 0;
int count;
unsigned long previousMillis = 0;
const long interval = 1000;
char data;
String kalimat;
double lati, longti;
void loop() {
    MQTT_connect();

    Adafruit_MQTT_Subscribe *subscription;
    while ((subscription = mqtt.readSubscription(1000))) {
        if (subscription == &iot_sistem) {
            Serial.print(F("Got: "));
            Serial.println((char *)iot_sistem.lastread);
            data_sistem = (char *)iot_sistem.lastread;
            if (data_sistem == "1") {

```

```

    Serial.println("Kirim data");
    nodeMCU.print("x");
    delay(1000);
  }
}
}

if (nodeMCU.available()) {
  char receivedChar = nodeMCU.read();
  Serial.print("Received from Arduino Mega: ");
  Serial.println(receivedChar);
}

// Now we can publish stuff!

unsigned long currentMillis = millis();

if (currentMillis - previousMillis >= interval) {
  previousMillis = currentMillis;
  count++;

  Serial.println(count);

  if (count > 15) {
    count = 0;

    Serial.print(F("\nSending photocell lat "));
    Serial.print(x);
    Serial.print("...");

    if (! iot_lat.publish(x++)) {
      Serial.println(F("Failed"));
    } else {
      Serial.println(F("OK!"));
    }
  }

  Serial.print(F("\nSending photocell long "));
  Serial.print(x);
  Serial.print("...");

  if (! iot_long.publish(x++)) {

```

```

    Serial.println(F("Failed"));
  } else {
    Serial.println(F("OK!"));
  }
  Serial.print(F("\nSending photocell count "));
  Serial.print(x);
  Serial.print("...");
  if (! iot_count.publish(x++)) {
    Serial.println(F("Failed"));
  } else {
    Serial.println(F("OK!"));
  }
}
}
}

// Function to connect and reconnect as necessary to the MQTT server.
// Should be called in the loop function and it will take care if connecting.
void MQTT_connect() {
  int8_t ret;

  // Stop if already connected.
  if (mqtt.connected()) {
    return;
  }

  Serial.print("Connecting to MQTT... ");

  uint8_t retries = 3;
  while ((ret = mqtt.connect()) != 0) { // connect will return 0 for connected
    Serial.println(mqtt.connectErrorString(ret));

```

```
Serial.println("Retrying MQTT connection in 5 seconds...");
mqtt.disconnect();
delay(5000); // wait 5 seconds
retries--;
if (retries == 0) {
  // basically die and wait for WDT to reset me
  while (1);
}
Serial.println("MQTT Connected!");
}
```

Program NodeMCU pada Sistem Keamanan Sepeda Motor

```
#include <SoftwareSerial.h>

#define NODEMCU_TX_PIN 5
#define NODEMCU_RX_PIN 4
SoftwareSerial nodeMCU(NODEMCU_RX_PIN, NODEMCU_TX_PIN); // RX, TX

#include <ESP8266WiFi.h>
#include "Adafruit_MQTT.h"
#include "Adafruit_MQTT_Client.h"

#define WLAN_SSID    "motor"
#define WLAN_PASS    "motor123"

#define AIO_SERVER    "io.adafruit.com"
#define AIO_SERVERPORT 1883           // use 8883 for SSL
#define AIO_USERNAME  "putri1108"
#define AIO_KEY       "aio_hnSh36UPELjygtk7cbFBFTWL171q"

/***** Global State (you don't need to change this!) *****/

// Create an ESP8266 WiFiClient class to connect to the MQTT server.
WiFiClient client;
// or... use WiFiClientSecure for SSL
//WiFiClientSecure client;

// Setup the MQTT client class by passing in the WiFi client and MQTT server and login
details.

Adafruit_MQTT_Client mqtt(&client, AIO_SERVER, AIO_SERVERPORT,
AIO_USERNAME, AIO_KEY);
```

```

// Setup a feed called 'photocell' for publishing.

// Notice MQTT paths for AIO follow the form: <username>/feeds/<feedname>

Adafruit_MQTT_Publish iot_lat = Adafruit_MQTT_Publish(&mqtt, AIO_USERNAME
"/feeds/lat");

Adafruit_MQTT_Publish iot_long = Adafruit_MQTT_Publish(&mqtt,
AIO_USERNAME "/feeds/long");

Adafruit_MQTT_Publish iot_count = Adafruit_MQTT_Publish(&mqtt,
AIO_USERNAME "/feeds/count");

// Setup a feed called 'onoff' for subscribing to changes.

Adafruit_MQTT_Subscribe iot_sistem = Adafruit_MQTT_Subscribe(&mqtt,
AIO_USERNAME "/feeds/sistem");

// Bug workaround for Arduino 1.6.6, it seems to need a function declaration
// for some reason (only affects ESP8266, likely an arduino-builder bug).
void MQTT_connect();

void setup() {
  Serial.begin(115200);
  nodeMCU.begin(9600);
  delay(10);

  Serial.println(F("Adafruit MQTT demo"));

  // Connect to WiFi access point.
  Serial.println(); Serial.println();
  Serial.print("Connecting to ");
  Serial.println(WLAN_SSID);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(5, OUTPUT);
  WiFi.begin(WLAN_SSID, WLAN_PASS);
  while (WiFi.status() != WL_CONNECTED) {

```



```

Serial.print(".");
digitalWrite(LED_BUILTIN, HIGH);
delay(250);
digitalWrite(LED_BUILTIN, LOW);
delay(250);
}
Serial.println();

Serial.println("WiFi connected");
Serial.println("IP address: "); Serial.println(WiFi.localIP());

// Setup MQTT subscription for onoff feed.
mqtt.subscribe(&iot_sistem);
}

String data_sistem;
uint32_t x = 0;
int count;
unsigned long previousMillis = 0;
const long interval = 1000;
char data;
String kalimat;
double lati, longti;
void loop() {
  MQTT_connect();

  Adafruit_MQTT_Subscribe *subscription;
  while ((subscription = mqtt.readSubscription(1000))) {
    if (subscription == &iot_sistem) {
      Serial.print(F("Got: "));
      Serial.println((char *)iot_sistem.lastread);
    }
  }
}

```

```

data_sistem = (char *)iot_sistem.lastread;
if (data_sistem == "1") {
    Serial.println("Kirim data");
    nodeMCU.print("x");
    delay(1000);
}
}
}
if (nodeMCU.available()) {
    char receivedChar = nodeMCU.read();
    Serial.print("Received from Arduino Mega: ");
    Serial.println(receivedChar);
}
// Now we can publish stuff!
unsigned long currentMillis = millis();
if (currentMillis - previousMillis >= interval) {
    previousMillis = currentMillis;
    count++;
    Serial.println(count);
    if (count > 15) {
        count = 0;
        Serial.print(F("\nSending photocell lat "));
        Serial.print(x);
        Serial.print("...");
        if (! iot_lat.publish(x++)) {
            Serial.println(F("Failed"));
        } else {
            Serial.println(F("OK!"));
        }
        Serial.print(F("\nSending photocell long "));
        Serial.print(x);

```

```

Serial.print("...");
if (! iot_long.publish(x++)) {
  Serial.println(F("Failed"));
} else {
  Serial.println(F("OK!"));
}
Serial.print(F("\nSending photocell count "));
Serial.print(x);
Serial.print("...");
if (! iot_count.publish(x++)) {
  Serial.println(F("Failed"));
} else {
  Serial.println(F("OK!"));
}
}
}
}
}
}

```

```

// Function to connect and reconnect as necessary to the MQTT server.
// Should be called in the loop function and it will take care if connecting.

```

```

void MQTT_connect() {
  int8_t ret;

```

```

  // Stop if already connected.

```

```

  if (mqtt.connected()) {
    return;
  }

```

```

  Serial.print("Connecting to MQTT... ");

```

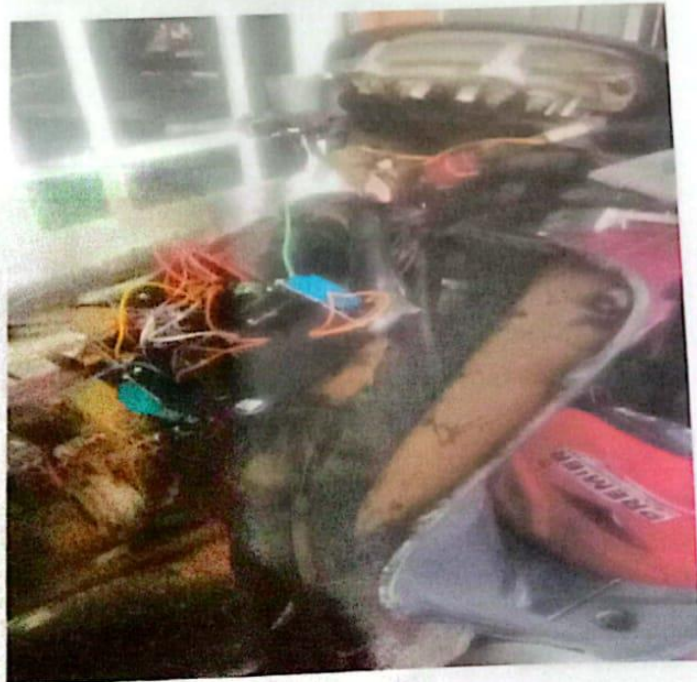
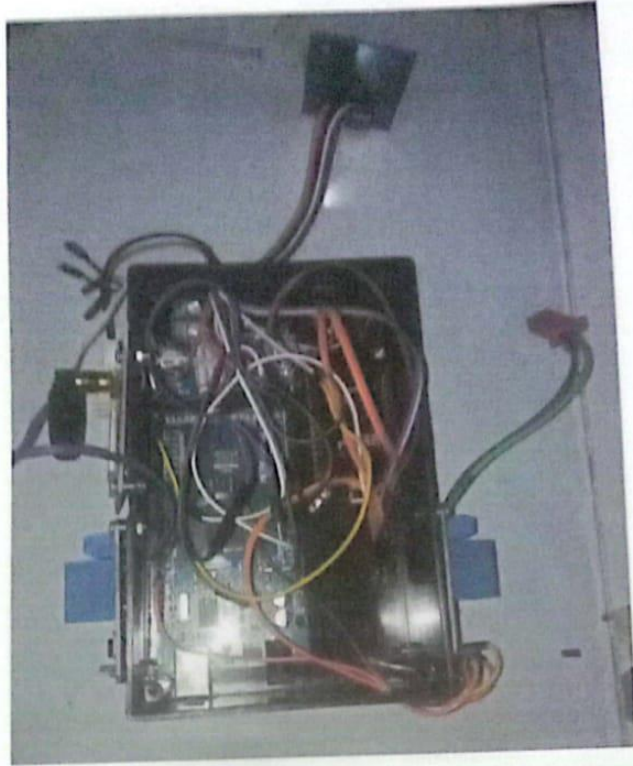
```

  uint8_t retries = 3;

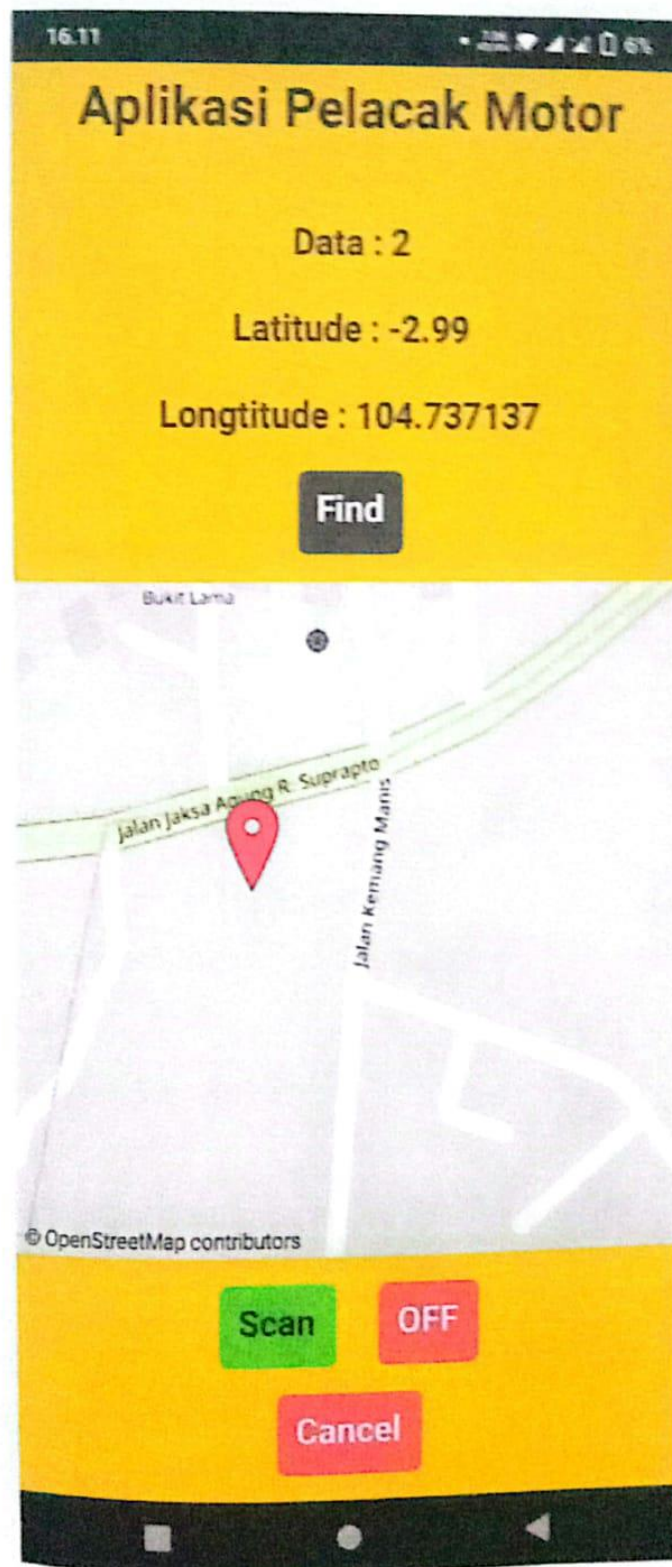
```

```
while ((ret = mqtt.connect()) != 0) { // connect will return 0 for connected
  Serial.println(mqtt.connectErrorString(ret));
  Serial.println("Retrying MQTT connection in 5 seconds...");
  mqtt.disconnect();
  delay(5000); // wait 5 seconds
  retries--;
  if (retries == 0) {
    // basically die and wait for WDT to reset me
    while (1);
  }
}
Serial.println("MQTT Connected!");
}
```

Foto Alat dan Aplikasi



Aplikasi IoT Pada MIT APP Inventor





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Judul Sistem Pengamanan Ganda Pada Sepeda Motor Menggunakan Rfid Dan Fingerprint Berbasis Internet Of Things

NO	TANGGAL	URAIAN	PARAF PEMBIMBING
1.	27-2-23	Ace Judul	[Signature]
2.	8-3-23	Rend B6 I	[Signature]
3.	14-3-23	Rend B6 I	[Signature]
4.	17-3-23	Rend B6 I	[Signature]
5.	21-3-23	Ace B6 I	[Signature]
6.	24-3-23	Rend B6 II	[Signature]
7.	28-3-23	Rend B6 II	[Signature]
8.	5-4-23	Rend B6 II	[Signature]
9.	11-4-23	Rend B6 II	[Signature]
10.	28-4-23	Ace B6 II	[Signature]
11.	20-5-23	Rend B6 III	[Signature]
12.	21-5-23	Rend B6 III	[Signature]
13.	7-6-23	Rend B6 III	[Signature]
14.	9-6-23	Rend B6 III	[Signature]
15.	13-6-23	Rend B6 III & IV	[Signature]
16.	21-6-23	Ace B6 III & IV	[Signature]

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Ketua Jurusan

[Signature]

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NO	TANGGAL	URAIAN	PARAPEMBIMBING
17	4-7-23	Ronk. Bk IV	[Signature]
18	1-8-23	Rand. Bk IV & Aca Alat	[Signature]
19	2-8-23	Ronk. Bk IV & V	[Signature]
20	3-8-23	Aca Bk IV & V Raksmendes. Usm 2 A	[Signature]

Palembang, Juli 2023
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Dosen Pembimbing : Ali Firdaus, S.Kom., M.Kom.
Judul : Sistem Pengamanan Ganda Pada Sepeda Motor Menggunakan Rfid Dan *Fingerprint* Berbasis *Internet Of Things*

NO	TANGGAL	URAIAN	PARAF PEMBIMBING
1.	23 Juni 2023	Acc bab 1 dan 2	
2.	23 Juni 2023	Revisi Bab 3	
3.	1 Agustus 2023	Acc bab 3	
4.	1 Agustus 2023	Revisi bab 4	
5.	7 Agustus 2023	Acc Bab 4	
6.	7 Agustus 2023	Rekomendasi Ujian LA	

Palembang, . Juni 2023

Ketua Jurusan

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REKOMENDASI UJIAN TUGAS AKHIR

Pembimbing Laporan Tugas Akhir, memberikan rekomendasi ujian laporan tugas akhir kepada,

Nama Mahasiswa	:	Putri Pramuditya
NIM	:	062030700273
Jurusan/Program Studi	:	Teknik Komputer/D3 Teknik Komputer
Judul Tugas Akhir	:	Sistem Pengamanan Ganda Pada Sepeda Motor Menggunakan RFID dan <i>Fingerprint</i> Berbasis <i>Internet Of Things</i>

Mahasiswa tersebut telah memenuhi persyaratan dan dapat mengikuti Ujian Laporan Tugas Akhir, pada Tahun Akademik 2023.

Palembang, Agustus 2023

Disetujui oleh,
Pembimbing I

Herlambang Saputra, Ph.D
NIP 198103182008121002

Pembimbing II

Ali Firdaus, S.Kom., M.Kom
NIP 197010112001121001



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Judul Tugas Akhir : Sistem Pengamanan Ganda Pada Sepeda Motor
Menggunakan RFID Dan *Fingerprint* Berbasis *Internet*
Off Things

No	Uraian	Paraf
1	<i>Isian Jawaban Datas Kerja</i>	<i>[Signature]</i>

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Judul Tugas Akhir : Sistem Pengamanan Ganda Pada Sepeda Motor
Menggunakan RFID Dan *Fingerprint* Berbasis *Internet*
Off Things

No	Uraian	Paraf
	Tata tulis Format penulisan flow chart	

Palembang, Agustus 2023

Dosen Penguji

Ikhtison Mekongga, ST.,M.Kom
NIP. 197705242000031002



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Judul Tugas Akhir : Sistem Pengamanan Ganda Pada Sepeda Motor
Menggunakan RFID Dan *Fingerprint* Berbasis *Internet*
Of Things

No	Uraian	Paraf
1.	latar Belakang.	
2.	Penelitian terdahulu ✓	
3.	flowchart	
4.	Pembahasan BAB <u>IV</u> ✓	

Palembang, Agustus 2023

Dosen Penguji,

Arsia Rini, S.Kom., M.Kom
NIP. 198809222020122014



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Nama Mahasiswa : Putri Pramudiya
NIM : 062030700273
Jurusan /Program Studi : D3 Teknik Komputer
Judul Tugas Akhir : Sistem Pengamanan Ganda Pada Sepeda Motor
Menggunakan RFID Dan *Fingerprint* Berbasis *Internet*
Off Things

No	Uraian	Paraf
1	Sesuai dengan pengujian lainnya	

Palembang, Agustus 2023
Dosen Penguji,

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PELAKSANAAN REVISI UJIAN TUGAS AKHIR

Nama Mahasiswa : Putri Pramuditya
NIM : 062030700273
Jurusan/Program Studi : D3 Teknik Komputer
Judul Tugas Akhir : Sistem Pengaman Ganda Pada Sepeda Motor Menggunakan RFID dan *Fingerprint* Berbasis *Internet Of Things*

Telah melaksanakan revisi terhadap Laporan Tugas Akhir yang diujikan pada hari
Kamis tanggal *10* bulan *Agustus*
tahun *2023*

Pelaksanaan revisi terhadap Laporan Tugas Akhir tersebut telah disetujui oleh Dosen
Penguji yang memberikan revisi:

No	Komentar	Nama Dosen Penguji	Tanggal/ bulan	Tanda Tangan
1.	<i>Acc</i>	Slamet Widodo, S.Kom., M.Kom	<i>21/8</i> 23	
2.	<i>Acc</i>	Ikhtison Mekongga, S.T., M.Kom	<i>20/8</i> 23	
3.	<i>Acc</i>	Arsia Rini, S.Kom., M.Kom	<i>22/8</i> 23	
4.	<i>Acc</i>	Isnainy Azro, S.Kom, M.Kom	<i>23/8</i> 23	

Palembang, Agustus 2023

Ketua Penguji

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