

LAMPIRAN

LAMPIRAN A

Listing Program Sistem Monitoring Keamanan Koper Berbasis IoT

1. Program Modul Bluetooth

```
long lastOpen = 0;
void setupBluetooth() {
  Serial1.begin(9600);
}
void bluetoothLoop() {
  Serial1.println("ping");
  if (millis() / 1000 > lastOpen + 3) {
    kunciSet(false);
  }
}
void serialEvent1() {
  String data = Serial1.readStringUntil('\n');
  Serial.println(data);
  if (data[0] == '1') {
    lastOpen = millis() / 1000;
    kunciSet(1);
  }
  else if (data[0] == '0') {
    kunciSet(0);
  }
  else if (data[0] == 'b') {
    BuzzerSet();
  }
}
```

2. Program Modul GPS

```
#include <TinyGPS++.h>
TinyGPSPlus gps;
void setupGps() {
  Serial3.begin(9600);
}
String gpsGetCoordinate() {
  while (Serial3.available() > 0) {
    if (gps.encode(Serial3.read())) {
      return
    }
  }
}
```

```

String(gps.location.lat(),7)+''+ String(gps.location.lng(), 7);
    }
    }
    return "";
}

```

3. **Program Buzzer**

```

void setupBuzzer() {
    pinMode(3, OUTPUT);
    digitalWrite(3, HIGH);
}
void BuzzerSet() {
    digitalWrite(3, LOW);
    delay(1000);
    digitalWrite(3, HIGH);
}

```

4. **Program Relay**

```

void setupKunci() {
    pinMode(4, OUTPUT);
    digitalWrite(4, HIGH);
}
void kunciSet(bool status) {
    digitalWrite(4, !status);
}

```

5. **Program MQTT**

```

#define TINY_GSM_MODEM_SIM800
#include <TinyGsmClient.h>
#include <PubSubClient.h>
TinyGsm modem(Serial2);
TinyGsmClient client(modem);
PubSubClient mqtt(client);
const char* broker = "broker.hivemq.com";
bool setupMqtt() {
//initalisasi
Serial2.begin(9600);
Serial.println("Initializing modem...");

```

```

modem.init();
Serial.print("Modem Info: ");
Serial.println(modem.getModemInfo());
// konek ke jaringan
Serial.print("Waiting for network...");
if (!modem.waitForNetwork()) {
  Serial.println(" fail");
  delay(1000);
  return;
}
Serial.println(" success");
if (modem.isNetworkConnected()) {
  Serial.println("Network connected");
}
// konek ke internet
Serial.print(F("Connecting to apn"));
if (!modem.gprsConnect("Internet.be", "", "")) {
  Serial.println(" fail");
  delay(1000);
  return false;
}
Serial.println(" success");
//mqtt
mqtt.setServer(broker, 1883);
mqttConnect();
return true;
}
boolean mqttCheck() {
  if (!mqtt.connected()) {
    if (mqttConnect()) {
      return true;
    }
    return false;
  }
  return true;
}
void mqttPublishCoordinate(String data) {
  Serial.println(data);
  int str_len = data.length() + 1;

```

```

char char_array[str_len];
data.toCharArray(char_array, str_len);
mqtt.publish("anggraeniKoordinat", char_array);
}
void mqttPublishNotification(String data) {
  Serial.println(data);
  int str_len = data.length() + 1;
  char char_array[str_len];
  data.toCharArray(char_array, str_len);
  mqtt.publish("anggraeniNotifikasi", char_array);
}
void mqttLoop() {
  mqtt.loop();
}

```

```

boolean mqttConnect() {
  Serial.print("Connecting to ");
  Serial.print(broker);
  boolean status = mqtt.connect("GsmClientTest");
  if (status == false) {
    Serial.println(" fail");
    return false;
  }
  Serial.println(" success");
  return mqtt.connected();
}

```

6. Program LDR

```

if (analogRead(0) > 100) {
  if (isOpen == false) {
    mqttPublishNotification("Koper dibuka");
  }
  else {
    mqttPublishNotification("Koper dibuka paksa");
    buzzerset();
  }
}
}

```

LAMPIRAN B

Blok Puzzle Aplikasi Android

Screen1 Kondisi Bluetooth Terhubung dan Terputus

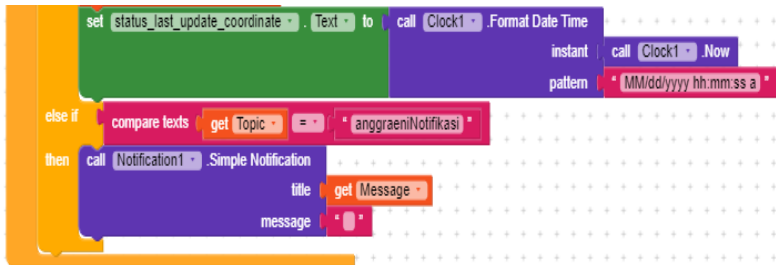
```
when Clock1 . Timer
do
  set global timeout to get global timeout - 1
  if Bluetooth_Client1 . Is Connected
  then
    set List_Picker1 . Text to "Bluetooth Terhubung"
    set List_Picker1 . Background Color to green
    if call Bluetooth_Client1 . Bytes Available To Receive > 0
    then
      initialize local received to call Bluetooth_Client1 . Receive Text
      number Of Bytes call Bluetooth_Client1 . Bytes Available To Receive
      in
        set global timeout to 5
        set global notificationSend to false
    else
      set List_Picker1 . Text to "Bluetooth Terputus"
      set List_Picker1 . Background Color to red
  if get global timeout < 0
  then
    if get global notificationSend == false
    then
      call Notification1 . Simple Notification
      title "Bluetooth Terputus"
      message "Koper diluar jangkauan"
      set global notificationSend to true
```

Screen 2 Menampilkan titik koordinat modul GPS

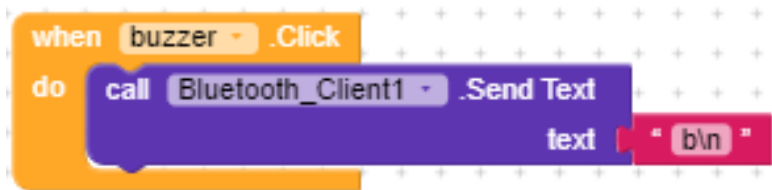
The image displays a block of code in a visual programming environment, likely for an IoT application. The code is organized into three main sections:

- Connection State Change:** A `when` block for `UrsPahoMqttClient1` with the event `.ConnectionStateChanged`. It contains a `do` loop with two `call` blocks for `.Subscribe`. The first block sets the `Topic` to `"anggraeniKoordinat"` and `QoS` to `2`. The second block sets the `Topic` to `"anggraeniNotifikasi"` and `QoS` to `2`.
- Global Variable Initialization:** Two `initialize global` blocks. The first sets `latitude` to an empty string `" "`. The second sets `longitude` to an empty string `" "`.
- Message Received:** A `when` block for `UrsPahoMqttClient1` with the event `.Message Received`. It contains a `do` loop with an `if` statement. The `if` condition is `compare texts` comparing `get Topic` to `"anggraeniKoordinat"`. If true, the `then` block performs the following actions:
 - `set status_coordinate . Text` to `join` of `"Koordinat: "` and `get Message`.
 - `initialize local coordinate` to `split` of `get Message` at `" "`.
 - `in` loop:
 - `set global latitude` to `select list item list` of `get coordinate` at `index 1`.
 - `set global longitude` to `select list item list` of `get coordinate` at `index 2`.
 - `call Map1 .Pan To` with parameters: `latitude` (from `get global latitude`), `longitude` (from `get global longitude`), and `zoom` set to `15`.
 - `call Marker1 .Set Location` with parameters: `latitude` (from `get global latitude`) and `longitude` (from `get global longitude`).

Screen 3 Waktu



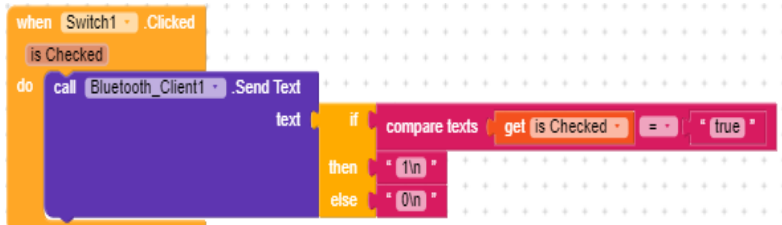
Screen 4 Buzzer



Screen 5 Membuka di google maps *smartphone*



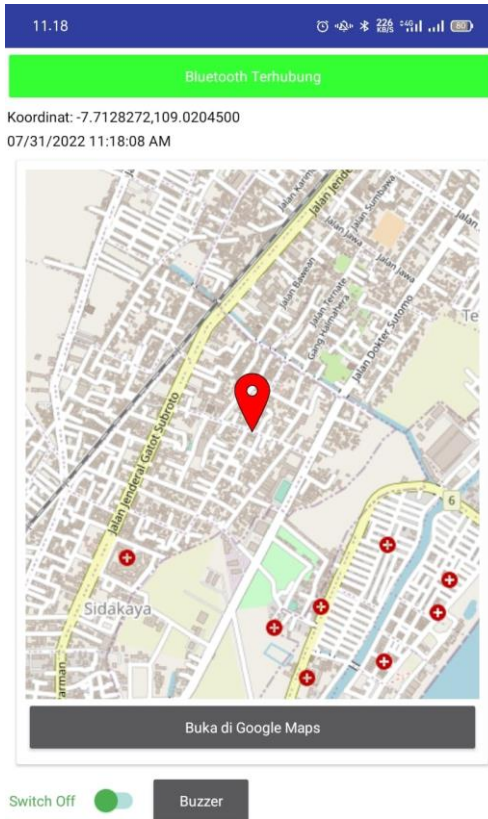
Screen 6 Switch



LAMPIRAN C

Tampilan Aplikasi Android

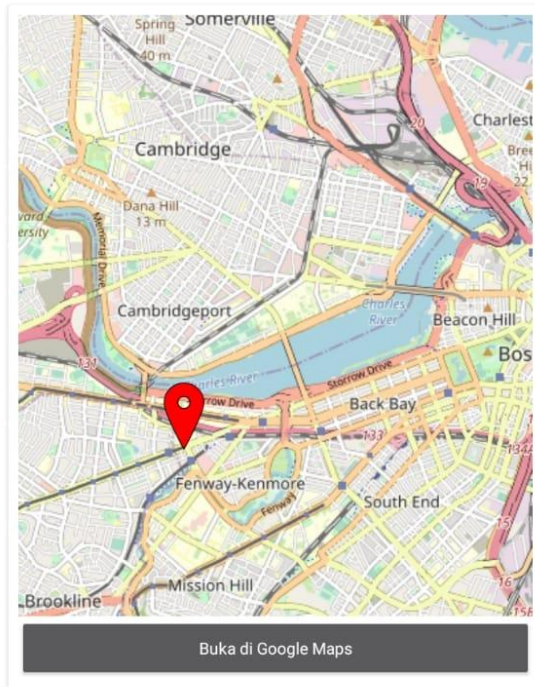
1. Tampilan aplikasi android ketika terhubung dengan bluetooth



2. Tampilan aplikasi terputus dengan bluetooth



latitude,longitude



LAMPIRAN D

Gambar Alat



D-1



D-2