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LAMPIRAN

Lampiran Program

```

#define M_feeder 15
#define M_launch 14
#define btn1 36
#define btn2 39
#define btn3 34
#define btn4 35
#define buzzer 23

#include <WiFi.h>
#include <PubSubClient.h>
#if defined(ESP8266)|| defined(ESP32) || defined(AVR)
#include <EEPROM.h>
#endif
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include "time.h"
#include <HX711_ADC.h>
#include <ESP32Time.h>
//ESP32Time rtc;
ESP32Time rtc(0); // offset in seconds GMT+0

#define EEPROM_SIZE 512
LiquidCrystal_I2C lcd(0x27,16,2);

const int HX711_dout = 16; //mcu > HX711 dout pin
const int HX711_sck = 4; //mcu > HX711 sck pin
HX711_ADC LoadCell(HX711_dout, HX711_sck);
unsigned long t = 0;

const char* ssid = "POCO F5";
const char* password = "1234567890";
//const char* ssid = "Wifi Rumah";
//const char* password = "dfgh456ti";
const char* mqtt_server = "mqtt-dashboard.com";

WiFiClient espClient;
PubSubClient client(espClient);
unsigned long lastMsg = 0, nbacklight=0;
#define MSG_BUFFER_SIZE (50)
char msg[MSG_BUFFER_SIZE];
int value = 0;
String msgstr="";

```

```

const char* ntpServer = "pool.ntp.org";
const long  gmtOffset_sec = 25200;
const int   daylightOffset_sec = 3600;
char get_time[8];
String val_clock, bufftime, totalpakandate;
int val_hour, val_minute, val_detik, val_day, val_month, val_year;
int days,months,years;

int PWM_feeder, PWM_launch, W_pakan;
int set_jam[8], set_menit[8], set_pakan[8];
bool stat_pakan[8];
int buffjam, buffmenit, buffpakan;
int execute = 0;
int jadwal, runn, launchspeed=0;
String dt[10];
char customKey;
int keyval=0,keyvalstat;
String payloaddata;
String buff;
const int tareOffsetVal_eeepromAdress = 60;
bool stoplaunch2=true;
int reconnectcount=0;

void reconnect() {
  // Loop until we're reconnected
  if (!client.connected()) {
    lcd.backlight();
    nobacklight = millis();
    setup_wifi();
    Serial.print("Attempting MQTT connection...");
    // Create a random client ID
    String clientId = "ESP8266Client-";
    clientId += String(random(0xffff), HEX);
    // Attempt to connect
    if (client.connect(clientId.c_str())) {
      Serial.println("connected");
      client.subscribe("set/jadwal");
      client.subscribe("pakan/refresh");
      // Once connected, publish an announcement...
      //client.publish("outTopic", "hello world");
      // ... and resubscribe
      //client.subscribe("pakaninfo");
    }
    struct tm timeinfo;
    if(!getLocalTime(&timeinfo)){
      Serial.println("Failed to obtain time");
      return;
    }
    rtc.setTimeStruct(timeinfo);
  }
}

```

```

} else {
  Serial.print("failed, rc=");
  Serial.print(client.state());
  Serial.println(" try again in 5 seconds");
  // Wait 5 seconds before retrying
  delay(500);
  lcd.clear();
}
}
}
//=== temporary for parsing
void parsingData(String dataIn){
  int j=0;
  int i;
  boolean parsing=false;
  //kirim data yang telah diterima sebelumnya
  Serial.print("data masuk : ");
  Serial.print(dataIn);
  Serial.print("\n");
  //inisialisasi variabel, (reset isi variabel)
  dt[j]="";
  //proses parsing data
  for(i=1;i<dataIn.length();i++)
  {
    //pengecekan tiap karakter dengan karakter (#) dan (,)
    if ((dataIn[i] == '#') || (dataIn[i] == ','))
    {
      //increment variabel j, digunakan untuk merubah index array
      penampung
      j++;
      dt[j]=""; //inisialisasi variabel array dt[j]
    }
    else
    {
      //proses tampung data saat pengecekan karakter selesai.
      dt[j] = dt[j] + dataIn[i];
    }
  }
  dataIn="";
  //kirim data hasil parsing
}

void sendmqtt(int mode){
  if(mode == 1){
    for(int q=1; q<=3;q++){
      msgstr = q;
      msgstr = msgstr + ",";
      msgstr = msgstr + set_jam[q];
    }
  }
}

```

```

msgstr = msgstr + ":";
msgstr = msgstr + set_menit[q];
msgstr = msgstr + ",";
msgstr = msgstr + set_pakan[q];
msgstr = msgstr + ",";
if(stat_pakan[q] == true){
    msgstr = msgstr + "Berhasil";
}
if(stat_pakan[q] == false){
    msgstr = msgstr + "Gagal";
}
byte arrsize = msgstr.length()+1;
msg[arrsize];
Serial.println(msgstr);
msgstr.toCharArray(msg, arrsize);
client.publish("pakan/jadwal",msg);
msgstr="";
}
mode=10;
}
if(mode == 2){
    Serial.println(payloaddata);
    Serial.println("-----");
    parsingData(payloaddata);
    jadwal = dt[0].toInt();
    set_jam[jadwal] = dt[1].toInt();
    set_menit[jadwal] = dt[2].toInt();
    set_pakan[jadwal] = dt[3].toInt();
    Serial.print("Jadwal : ");
    Serial.print(jadwal);
    Serial.print("\n");
    Serial.print("Jam : ");
    Serial.print(set_jam[jadwal]);
    Serial.print("\n");
    Serial.print("menit : ");
    Serial.print(set_menit[jadwal]);
    Serial.print("\n");
    Serial.print("pakan : ");
    Serial.print(set_pakan[jadwal]);
    Serial.print("\n\n");
    saveeprom();
    payloaddata="";
    mode=10;
}

if(mode == 3){
    msgstr = loadcellval/1000;
    msgstr = msgstr + ",";

```

```

    msgstr = msgstr + totalpakankg;
    msgstr = msgstr + ",";
    msgstr = msgstr + days;
    msgstr = msgstr + "/";
    msgstr = msgstr + months;
    msgstr = msgstr + "/";
    msgstr = msgstr + years;
    byte arrsize = msgstr.length()+1;
    msg[arrsize];
    Serial.println(msgstr);
    msgstr.toCharArray(msg, arrsize);
    client.publish("pakaninfo",msg);
    msgstr="";
    mode=10;
}
if(mode == 5){
    msgstr = sendparam;
    byte arrsize = msgstr.length()+1;
    msg[arrsize];
    Serial.println(msgstr);
    msgstr.toCharArray(msg, arrsize);
    client.publish("pakan/param",msg);
    msgstr="";
    mode=10;
    sendstatus=0;
}
}

void readloadcell(){
    static boolean newDataReady = 0;
    const int serialPrintInterval = 0; //increase value to slow down serial print
    activity

    // check for new data/start next conversion:
    if (LoadCell.update()) newDataReady = true;

    // get smoothed value from the dataset:
    if (newDataReady) {
        loadcellval = LoadCell.getData();
        newDataReady = 0;
    }
}

void PID(float p, float i, float d, int jadwall){
    int error2 = Error;
    readloadcell();
    dError = Error;
    Error = loadcellval - setpoint;

```



```

sum_Error += Error;

float P = p * Error;
float I = i * sum_Error;
float D = (d / 100) * (Error - dError);

kec = P + I + D;
kec = map(kec,0,255,170,255);
if (kec > 255){
  kec = 255;
}
// else if (kec < 0){
//   kec = 100;
// }
Serial.print(kec);
Serial.print(",");
Serial.print(Error);
Serial.print(",");
Serial.print(loadcellval);
Serial.print(",");
Serial.print(millis());
Serial.print(",");
Serial.println(jadwal);
launchspeed++;
if(launchspeed>pwmlontar){
  launchspeed = 60;
}
ledcWrite(pwmChannellaunch, pwmlontar);
ledcWrite(pwmChannelfeeder, kec);
if(error2 == jadwal && stoplaunch2 == true){
  for(int x=0; x<0; x++){
    delay(1000);
    ledcWrite(pwmChannellaunch, 0);
    ledcWrite(pwmChannelfeeder, 0);
  }
  stoplaunch2=false;
}
if(loadcellval < setpoint){
  ledcWrite(pwmChannelfeeder, 0);
  delay(2000);
  ledcWrite(pwmChannellaunch, 0);
  lcd.clear();
  execute = 0;
}
}

void kasihpakan(int setjadwal){
  lcd.backlight();

```

```

noblacklight = millis();
lastpakan = loadcellval;
lcd.setCursor(0,0);
lcd.print("Pemberian Pakan");
lcd.setCursor(0,1);
lcd.print("Jadwal ");
lcd.print(setjadwal);
lcd.print(" || ");
  lcd.print(set_pakan[setjadwal]);
lcd.print("gr");
  setpoint = loadcellval - set_pakan[setjadwal];
    ledcWrite(pwmChannellaunch, pwmlontar);
  delay(3000);
lcd.clear();
if(loadcellval<(set_pakan[setjadwal]+50)){
  lcd.setCursor(3,0);
  lcd.print("Pakan gagal");
  lcd.setCursor(0,1);
  lcd.print("Sisa pkn kurang");
  execute=0;
  delay(3000);
    ledcWrite(pwmChannellaunch, 0);
  stat_pakan[setjadwal] = false;
}
sendparam = "Jadwal ";
sendparam = sendparam + setjadwal;
sendparam = sendparam + ",";
  sendparam = sendparam + val_hour;
  sendparam = sendparam + ":";
  sendparam = sendparam + val_minute;
  sendparam = sendparam + ":";
  sendparam = sendparam + val_detik;
  sendparam = sendparam + ",";
  sendparam = sendparam + loadcellval;
while(execute == 1){
  readbtn();
  readloadcell();
  PID(20,0,0,1); //P,I,D,pakan,jadwal
  lcd.setCursor(0,0);
  lcd.print("Berat: ");
  lcd.print(set_pakan[setjadwal]);
  lcd.setCursor(0,1);
  lcd.print("Diberikan: ");
//lcd.print(loadcellval);
  lcd.print(Error);
  lcd.print(" ");
  if(digitalRead(btn4) == LOW){ //tare process
    execute=0;

```

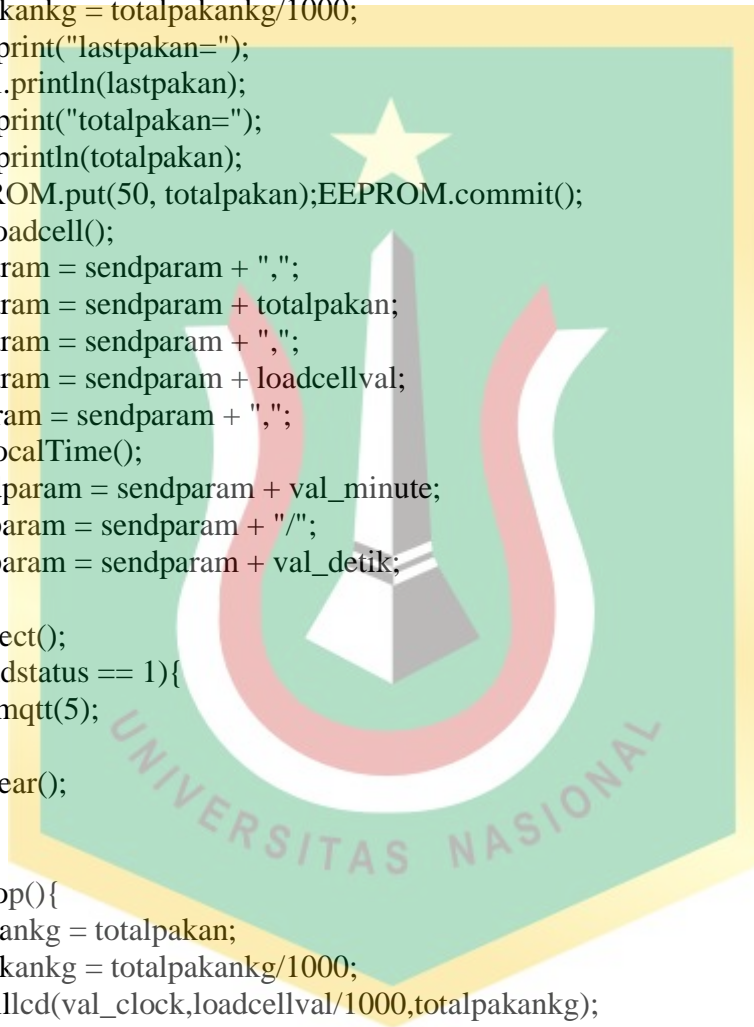
```

    }
    stat_pakan[setjadwal] = true;
    }
    sendparam = sendparam + ",";
    sendparam = sendparam + set_pakan[setjadwal];
    sendparam = sendparam + ",";
    sendparam = sendparam + (lastpakan - loadcellval);
    sendstatus = 1;
    totalpakan = (totalpakan + (lastpakan - loadcellval));
    totalpakankg = totalpakan;
    totalpakankg = totalpakankg/1000;
    Serial.print("lastpakan=");
    Serial.println(lastpakan);
    Serial.print("totalpakan=");
    Serial.println(totalpakan);
    EEPROM.put(50, totalpakan);EEPROM.commit();
    readloadcell();
    sendparam = sendparam + ",";
    sendparam = sendparam + totalpakan;
    sendparam = sendparam + ",";
    sendparam = sendparam + loadcellval;
    sendparam = sendparam + ",";
    printLocalTime();
    sendparam = sendparam + val_minute;
    sendparam = sendparam + "/";
    sendparam = sendparam + val_detik;

    reconnect();
    if(sendstatus == 1){
        sendmqtt(5);
    }
    lcd.clear();
}

Void loop(){
totalpakankg = totalpakan;
totalpakankg = totalpakankg/1000;
//tampilcd(val_clock,loadcellval/1000,totalpakankg);
//time,curload(Kg),sumload
//tampilcd(val_clock,loadcellval,1); //time,curload(gr),sumload
if(val_hour == set_jam[1] && val_minute == set_menit[1] && val_detik == 0
&& execute == 1){ //jadwal 1
    kasihpakan(1);
}
if(val_hour == set_jam[2] && val_minute == set_menit[2] && val_detik == 0
&& execute == 1){ //jadwal 2
    kasihpakan(2);
}
}

```



```

if(val_hour == set_jam[3] && val_minute == set_menit[3] && val_detik == 0
&& execute == 1){ //jadwal 3
  kasihpakan(3);
}

```

```

if(digitalRead(btn1) == LOW && digitalRead(btn2) == LOW && execute ==
1){ //temporary for internal fAT
  kasihpakan(1);
}
else{
  execute = 1;
}

```

```

  unsigned long now = millis();
  if (now - lastMsg > 5000) {
    lastMsg = now;
    sendmqtt(3);
    sendmqtt(1);
    sendmqtt(5);
    //sendmqtt(5);
  }

```

```

  if(now - nobacklight > 50000){
    nobacklight = now;
    lcd.noBacklight();
  }
}

```



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