

LAMPIRAN

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WiFiUDP ntpUDP;
NTPClient web(ntpUDP, "asia.pool.ntp.org");
NTPClient timeClient(ntpUDP, "asia.pool.ntp.org",25200);

LiquidCrystal_I2C lcd(0x27, 20, 4);

#define DHTPIN1 D4
#define DHTPIN2 D5
#define DHTPIN3 D6
#define relay_pin D7

#define DHTTYPE DHT11

String timeString;
String node;
float t1,t2,t3,h1,h2,h3;
unsigned long Waktu;
int Relay;

DHT dht1(DHTPIN1, DHTTYPE);
DHT dht2(DHTPIN2, DHTTYPE);
DHT dht3(DHTPIN3, DHTTYPE);

void setup() {
  Serial.begin(9600);
  lcd.begin();

  WiFi.begin(ssid, password);

  while ( WiFi.status() != WL_CONNECTED ) {
    delay ( 500 );
    lcd.print ( F("."));
  }
  Serial.println();
  lcd.print(WiFi.localIP());

  pinMode(relay_pin, OUTPUT);
  dht1.begin();
  dht2.begin();
  dht3.begin();
  timeClient.begin();
  web.begin();
  Firebase.begin(FIREBASE_HOST, FIREBASE_AUTH);
  digitalWrite(relay_pin, 1);
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    lcd.clear();
}

void loop() {
    while(!timeClient.update()) {
        timeClient.forceUpdate();
    }
    while(!web.update()) {
        web.forceUpdate();
    }

    timeClient.update();
    web.update();

    timeString = "";
    Waktu = web.getEpochTime();

    h1 = dht1.readHumidity();
    t1 = dht1.readTemperature();
    h2 = dht2.readHumidity();
    t2 = dht2.readTemperature();
    h3 = dht3.readHumidity();
    t3 = dht3.readTemperature();

    lcd.setCursor(0,0);
    lcd.print(F("T1 :"));
    lcd.print(t1);
    lcd.print(F(" H1 :"));
    lcd.print(h1);
    lcd.setCursor(0,1);
    lcd.print(F("T2 :"));
    lcd.print(t2);
    lcd.print(F(" H2 :"));
    lcd.print(h2);
    lcd.setCursor(0,2);
    lcd.print(F("T3 :"));
    lcd.print(t3);
    lcd.print(F(" H3 :"));
    lcd.print(h3);

    if (timeClient.getHours() < 10)
        timeString += "0";
        timeString += timeClient.getHours();
        timeString += ":";

    if (timeClient.getMinutes() < 10)
        timeString += "0";

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timeString += timeClient.getMinutes();

StaticJsonBuffer<300> JSON;
JsonObject& sensor1 = JSON.createObject();
JsonObject& sensor2 = JSON.createObject();
JsonObject& sensor3 = JSON.createObject();

sensor1["temp"] = t1;
sensor1["hum"] = h1;
sensor1["time"] = Waktu;

sensor2["temp"] = t2;
sensor2["hum"] = h2;
sensor2["time"] = Waktu;

sensor3["temp"] = t3;
sensor3["hum"] = h3;
sensor3["time"] = Waktu;

Firebase.set("sensor1", sensor1);
Firebase.set("sensor2", sensor2);
Firebase.set("sensor3", sensor3);

Mode();
delay(1000);
}

void Mode(){
node = Firebase.getString("mode");
if(node.equals("Auto")){
Relay = Firebase.getInt("relay");
if(t1 > 27 || t2 > 27 || t3 > 27 || h1 < 80 || h2 < 80 || h3 < 80){
Firebase.set("relay", 0);
}else{
Firebase.set("relay", 1);
}
digitalWrite(relay_pin, Relay);
}

else if(node.equals("Manual")){
Relay = Firebase.getInt("relay");
digitalWrite(relay_pin, Relay);
}

else if(node.equals("Timer")){
Relay = Firebase.getInt("relay");
FirebaseObject child = Firebase.get("timer");

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String v_start = child.getString("start");
String v_end = child.getString("end");
if(timeString == v_start){
    Firebase.set("relay", 0);
} else if (timeString == v_end){
    Firebase.set("relay", 1);
}
digitalWrite(relay_pin, Relay);
}
}
```

