LAMPIRAN

A. List program Arduino Uno di sisi Transmitter (Tx) :

```
#include <Adafruit_Sensor.h>
#include <DHT.h>
#include <DHT_U.h>
#include <nRF24L01.h>
#include <printf.h>
#include <RF24.h>
#include <RF24_config.h>
#include <RTClib.h>
#include <Servo.h>
#include <SPI.h>
#include <LiquidCrystal_I2C.h>
#include <Wire.h>
#define DHTPIN 2
#define DHTTYPE DHT22
#define lampu1 3
#define lampu2 5
#define fan 4
#define alarm 8
const int JamPagi = 06;
const int MinPagi = 30;
const int JamSiang = 14;
const int MinSiang = 30;
Servo myservo;
RF24 radio(9,10);
RTC_DS1307 rtc;
LiquidCrystal_I2C lcd(0x27, 20, 4);
char daysOfTheWeek[7][12] = {"Sunday", "Monday", "Tuesday", "Wednesday",
"Thursday", "Friday", "Saturday"};
```

```
char monthsOfTheYear[12][4] = {"JAN", "FEB", "MAR", "APR", "MAY", "JUN",
"JUL", "AUG", "SEP", "OCT", "NOV", "DEC"};
char dOfTheWeek[7][12] = { "Ahad", "Senin", "Selasa", "Rabu", "Kamis",
"Jumat", "Sabtu"};
char setphase = 0;
DateTime now;
DHT dht(DHTPIN, DHTTYPE);
int t;
int h;
const uint64_t pipe = 0xE8E8F0F0E1LL;
struct dataStruct {
        int t;
        int h;
} MyData;
void setup() {
  Wire.begin();
  Serial.begin(9600);
  pinMode(lampu1, OUTPUT);
  pinMode(lampu2, OUTPUT);
  pinMode(fan, OUTPUT);
  pinMode(alarm, OUTPUT);
  radio.begin();
  radio.setChannel(117);
  radio.setDataRate(RF24_250KBPS);
  radio.setPALevel(RF24_PA_LOW);
  radio.openWritingPipe(pipe);
  radio.stopListening();
  dht.begin();
  lcd.begin();
  myservo.attach(7);
  if (! rtc.begin()) {
```

```
    Serial.println("Couldn't find RTC");
    while (1);
  }
}
void loop() {
  if (!setphase) {
    now = rtc.now();
   }
  int tgl = now.day ();
  int bln  = now.month();
  int thn   = now.year();
  int jam  =  now.hour();
  int menit = now.minute();
  int detik = now.second();
  Serial.print(thn, DEC);
  Serial.print('/');
  Serial.print(bln, DEC);
  Serial.print('/');
  Serial.print(tgl, DEC);
  Serial.print(" (");
  Serial.print(dOfTheWeek[now.dayOfTheWeek()]);
  Serial.print(") ");
  Serial.print(jam, DEC);
  Serial.print(':');
  Serial.print(menit, DEC);
  Serial.print(':');
  Serial.print(detik, DEC);
  Serial.println();
  lcd.setCursor(0, 0);
  lcd.print(dOfTheWeek[now.dayOfTheWeek()]);
  lcd.print(" ");
```

```
lcd.print(tens(tgl), DEC);
lcd.print(units(tgl), DEC);
lcd.print(' ');
lcd.print(monthsOfTheYear[bln - 1]);
lcd.print(' ');
lcd.print(thn, DEC);
lcd.print(' ');

lcd.setCursor(0, 1);
lcd.print(tens(jam), DEC);
lcd.print(units(jam), DEC);
lcd.print(':');
lcd.print(tens(menit), DEC);
lcd.print(units(menit), DEC);
lcd.print(':');
lcd.print(tens(detik), DEC);
lcd.print(units(detik), DEC);
lcd.print(' ');

t = dht.readTemperature();
h = dht.readHumidity();

lcd.setCursor(0, 2);
lcd.print("suhu:");
lcd.setCursor(6,2);
lcd.print(t);
lcd.setCursor(8,2);
lcd.print(" C");
lcd.setCursor(0,3);
lcd.print("humidity:");
lcd.setCursor(10,3);
```

```
lcd.print(h);
lcd.setCursor(12,3);
lcd.print("%");

if (t <= 25 || h >= 65) {
  digitalWrite(lampu1, HIGH);
  digitalWrite(lampu2, HIGH);
  digitalWrite(fan, LOW);
}

else if (t >= 33 || h <= 55){
  digitalWrite(fan, HIGH);
  digitalWrite(lampu2, LOW);
  digitalWrite(lampu1, HIGH);
}

if (t <=22){
  lcd.setCursor(10,2);
  lcd.print("DINGIN");
  digitalWrite(alarm, HIGH);
  delay(200);
  digitalWrite(alarm, LOW);
  delay(200);
  digitalWrite(alarm, HIGH);
  delay(200);
  digitalWrite(alarm, LOW);
  delay(1000);
}else {
  digitalWrite(alarm, LOW);
}
if (t >=35){
```

```
  lcd.setCursor(10,2);
  lcd.print("PANAS");
  digitalWrite(alarm, HIGH);
  delay(200);
  digitalWrite(alarm, LOW);
  delay(200);
  digitalWrite(alarm, HIGH);
  delay(200);
  digitalWrite(alarm, LOW);
  delay(1000);
  }else {
  digitalWrite(alarm, LOW);
 }
if (h >=66){
  lcd.setCursor(14,3);
  lcd.print("LEMBAB");
  digitalWrite(alarm, HIGH);
  delay(200);
  digitalWrite(alarm, LOW);
  delay(200);
  digitalWrite(alarm, HIGH);
  delay(200);
  digitalWrite(alarm, LOW);
  delay(1000);
}else {
  digitalWrite(alarm, LOW);
}
if (h <=54){
  lcd.setCursor(14,3);
  lcd.print("KERING");
  digitalWrite(alarm, HIGH);
```

```
  delay(200);
  digitalWrite(alarm, LOW);
  delay(200);
  digitalWrite(alarm, HIGH);
  delay(200);
  digitalWrite(alarm, LOW);
  delay(1000);
}else {
  digitalWrite(alarm, LOW);
 }
 if ((now.hour() == JamPagi) && (now.minute() == MinPagi)) {
  myservo.write(90);
  delay(15);
 }
 else
 {
 myservo.write(0);
 delay(1000);
 }
  if ((now.hour() == JamSiang) && (now.minute() == MinSiang)) {
   myservo.write(90);
  delay(15);
 }
  else
 {
 myservo.write(0);
 delay(1000);
 }
 MyData.t = t;
MyData.h = h;
radio.write(&MyData, sizeof(MyData));
```

```
delay(1000);
}
char tens(int n) {
  return (n / 10) % 10;
}
char units(int n) {
  return n % 10;
}
```

B. List program Arduino Uno di sisi receiver (Rx)

```
#include "RTClib.h"
#include <SPI.h>
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include <nRF24L01.h>
#include <printf.h>
#include <RF24.h>
#include <RF24_config.h>

RTC_DS3231 rtc;
RF24 radio(9,10);
const uint64_t pipe = 0xE8E8F0F0E1LL;
LiquidCrystal_I2C lcd(0x27, 20, 4);
char daysOfTheWeek[7][12] = {"Ahad", "Senin", "Selasa", "Rabu", "Kamis",
"Jumat", "Sabtu"};
char monthsOfTheYear[12][4] = {"JAN", "FEB", "MAR", "APR", "MAY", "JUN",
"JUL", "AUG", "SEP", "OCT", "NOV", "DEC"};
int t;
int h;
struct dataStruct {
  int t;
```

```
  int h;
} MyData;
void setup() {
  radio.begin();
  radio.setChannel(117);
  radio.setDataRate(RF24_250KBPS);
  radio.setPALevel(RF24_PA_LOW);
  radio.openReadingPipe(1,pipe);
  radio.startListening();
  Serial.begin(115200);
  lcd.begin();
}
void loop() {
 radio.startListening();
  if (radio.available()){
  radio.read(&MyData,sizeof(MyData));
  t = MyData.t;
  h = MyData.h;
  Serial.print(t);
  Serial.print('T');
  Serial.print(h);
  Serial.print('H');
  }
 delay(100);
DateTime now = rtc.now();
lcd.setCursor(0,0);
lcd.print(daysOfTheWeek[now.dayOfTheWeek()]);
lcd.print(" ,");
lcd.print(now.day(), DEC);
lcd.print(' ');
lcd.print(monthsOfTheYear[now.month()-1]);
```

```
lcd.print(' ');
lcd.print(now.year(), DEC);
lcd.print(' ');

lcd.setCursor(0,1);
lcd.print(tens(now.hour()), DEC);
lcd.print(units(now.hour()), DEC);
lcd.print(':');
lcd.print(tens(now.minute()), DEC);
lcd.print(units(now.minute()), DEC);
lcd.print(':');
lcd.print(tens(now.second()), DEC);
lcd.print(units(now.second()), DEC);
lcd.print(' ');

lcd.setCursor(0, 2);
lcd.print("suhu:");
lcd.setCursor(6,2);
lcd.print(t);
lcd.setCursor(8,2);
lcd.print(" C");
lcd.setCursor(0,3);
lcd.print("kelembaban:");
lcd.setCursor(12,3);
lcd.print(h);
lcd.setCursor(15,3);
lcd.print("%");
delay(1000);
}
char tens(int n) {
return (n / 10) % 10;
```

```
}
char units(int n) {
return n % 10;
}
```