

## LAMPIRAN

### 1. List program

```
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27,2,16);

#include <PZEM004Tv30.h>
PZEM004Tv30 pzem (13,12);
float Power, Voltage, Current, Energy;
#include <PZEM004Tv30.h>
PZEM004Tv30 pzem1 (14,16);
float Power1, Voltage1, Current1, Energy1;

float Biaya = 1352;
float hasil;
float hasil1;

#include <BlynkSimpleEsp8266.h>
#include <ESP8266WiFi.h>
char auth []="Xaugso6WgpOIYdUhShNWpeMYSoyADOXe";
char ssid[]="ELEKTRO UNDIKSHA";
char pass[]="12345678";

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

  WiFi.begin (ssid,pass);
  while(WiFi.status() != WL_CONNECTED)
  {
    lcd.setCursor(1,0);
    lcd.print("STATUS KONEKSI");
    lcd.setCursor(5,1);
    lcd.print("Tunggu");
    delay (2000);
    lcd.clear();
  }
}
```

```
    lcd.setCursor(2,0);  
    lcd.print("Terkoneksi Ke");  
    lcd.setCursor(0,1);  
    lcd.print(ssid);  
    delay (2000);  
    lcd.clear();  
  
    Blynk.begin (auth, ssid, pass);
```

```
    }  
  
    void loop() {  
  
        //DAYA  
        Power = pzem.power();  
        Serial.print("Power :");  
        Serial.print(Power);  
        Serial.println("W");  
        lcd.setCursor(0,0);  
        lcd.print("Daya1 :");  
        lcd.print(Power);  
        lcd.print("W");  
  
        Power1 = pzem1.power();  
        Serial.print("Power1 :");  
        Serial.print(Power1);  
        Serial.println("W");  
        lcd.setCursor(0,1);  
        lcd.print("Daya2 :");  
        lcd.print(Power1);  
        lcd.print("W");  
        Serial.println ();  
        delay (2500);  
        lcd.clear();  
  
        //TEGANGAN  
        Voltage = pzem.voltage();
```



```

Serial.print("Voltage : ");
Serial.print(Voltage);
Serial.println("V");
lcd.setCursor(0,0);
lcd.print("Teg1 : ");
lcd.print(Voltage);
lcd.print("V");

```

```

Voltage1 = pzem1.voltage();
Serial.print("Voltage1 : ");
Serial.print(Voltage1);
Serial.println("V");
lcd.setCursor(0,1);
lcd.print("Teg2 : ");
lcd.print(Voltage1);
lcd.print("V");
Serial.println ();
delay (2500);
lcd.clear();

```

```

//ARUS
Current = pzem.current();
Serial.print("Current : ");
Serial.print(Current);
Serial.println("A");
lcd.setCursor(0,0);
lcd.print("Arus1 : ");
lcd.print(Current);
lcd.print("A");

```

```

Current1 = pzem1.current();
Serial.print("Current1 : ");
Serial.print(Current1);
Serial.print("A");
lcd.setCursor(0,1);
lcd.print("Arus2 : ");
lcd.print(Current1);
lcd.print("A");

```



```
Serial.println ();
delay (2500);
lcd.clear();

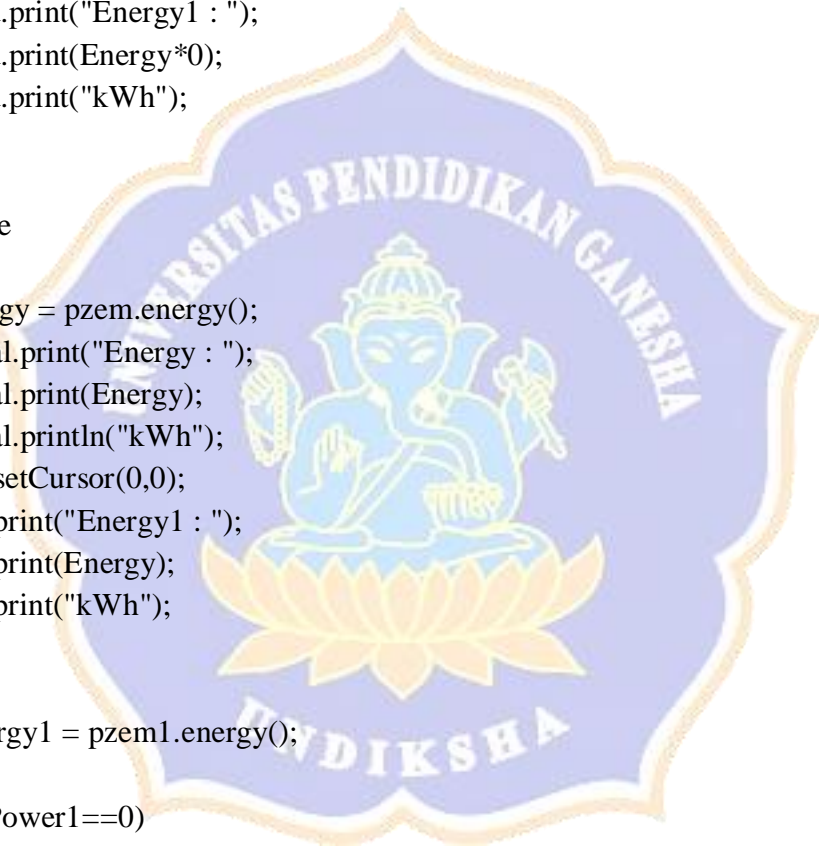
//ENERGY
Energy = pzem.energy();

if (Power==0)
{
  Energy = pzem.resetEnergy();
  lcd.setCursor(0,0);
  lcd.print("Energy1 : ");
  lcd.print(Energy*0);
  lcd.print("kWh");
}
else
{
  Energy = pzem.energy();
  Serial.print("Energy : ");
  Serial.print(Energy);
  Serial.println("kWh");
  lcd.setCursor(0,0);
  lcd.print("Energy1 : ");
  lcd.print(Energy);
  lcd.print("kWh");
}

Energy1 = pzem1.energy();

if (Power1==0)
{
  Energy1 = pzem1.resetEnergy();
  lcd.setCursor(0,1);
  lcd.print("Energy2 : ");
  lcd.print(Energy1*0);
  lcd.print("kWh");
}

else
{
  Energy1 = pzem1.energy();
```



```

Serial.print("Energy1 : ");
Serial.print(Energy1);
Serial.println("kWh");
lcd.setCursor(0,1);
lcd.print("Energy2 : ");
lcd.print(Energy1);
lcd.print("kWh");
}

```

```

Serial.println ();
delay (2500);
lcd.clear();

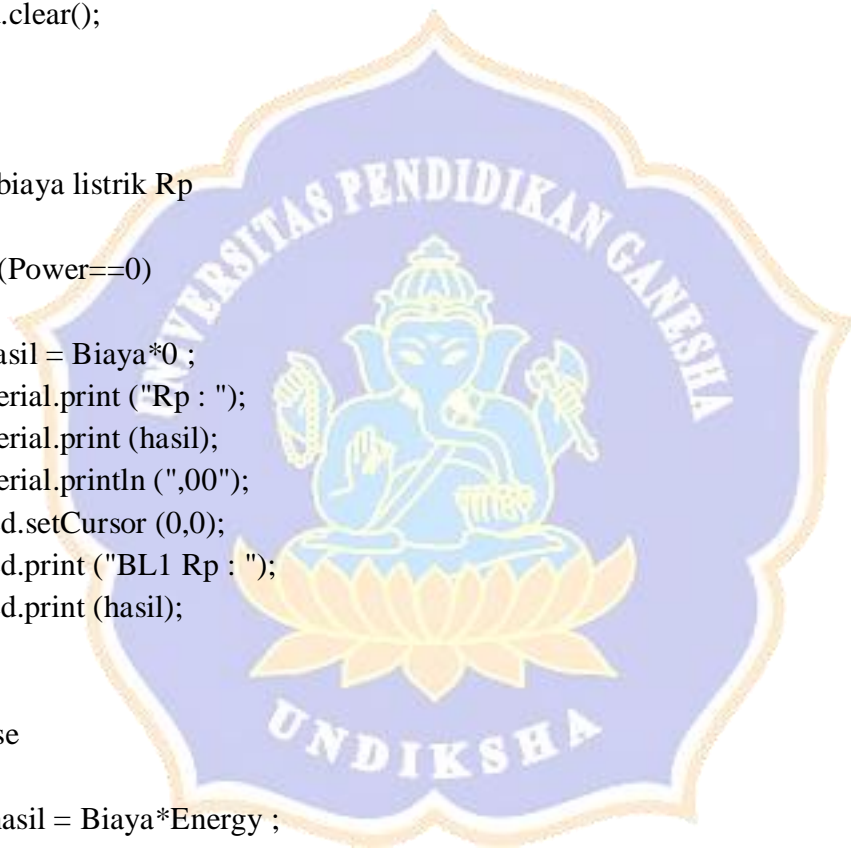
```

```
//biaya listrik Rp
```

```

if (Power==0)
{
hasil = Biaya*0 ;
Serial.print ("Rp : ");
Serial.print (hasil);
Serial.println (",00");
lcd.setCursor (0,0);
lcd.print ("BL1 Rp : ");
lcd.print (hasil);
}
else
{
hasil = Biaya*Energy ;
Serial.print ("Rp : ");
Serial.print (hasil);
Serial.println (",00");
lcd.setCursor (0,0);
lcd.print ("BL1 Rp : ");
lcd.print (hasil);
}
if (Power1==0)
{
hasil1 = Biaya*0 ;
Serial.print ("Rp : ");

```



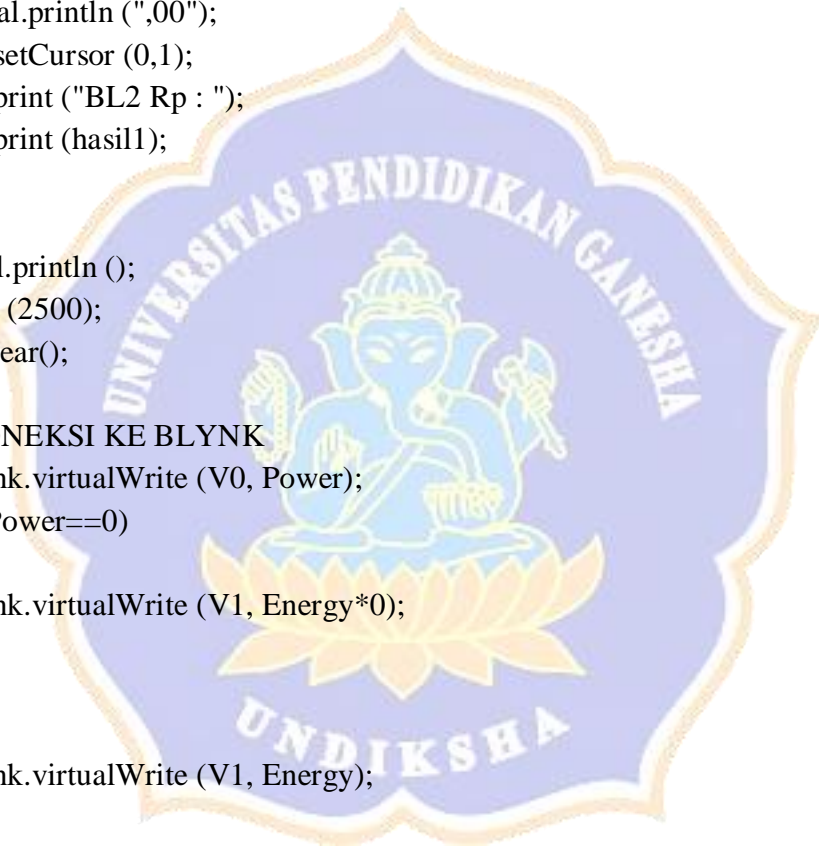
```

Serial.print (hasil1);
Serial.println (" ,00");
lcd.setCursor (0,1);
lcd.print ("BL2 Rp : ");
lcd.print (hasil1);
}
else
{
hasil1 = Biaya*Energy1 ;
Serial.print ("Rp : ");
Serial.print (hasil1);
Serial.println (" ,00");
lcd.setCursor (0,1);
lcd.print ("BL2 Rp : ");
lcd.print (hasil1);
}

Serial.println ();
delay (2500);
lcd.clear();

//KONEKSI KE BLYNK
Blynk.virtualWrite (V0, Power);
if (Power==0)
{
Blynk.virtualWrite (V1, Energy*0);
}
else
{
Blynk.virtualWrite (V1, Energy);
}
Blynk.virtualWrite (V2, Voltage);
Blynk.virtualWrite (V3, Current);
Blynk.virtualWrite (V4, Power1);
if (Power1==0)
{
Blynk.virtualWrite (V5, Energy1*0);
}
else
{
Blynk.virtualWrite (V5, Energy1);
}

```



```
Blynk.virtualWrite (V6, Voltage1);  
Blynk.virtualWrite (V7, Current1);  
Blynk.virtualWrite (V8, hasil);  
Blynk.virtualWrite (V9, hasil1);  
Blynk.run ();  
}
```

2. Dokumentasi pembuatan alat



