



LAMPIRAN-LAMPIRAN

List Program Arduino

```
#include <SPI.h>

#include <Ethernet.h>

#include <MFRC522.h>

#include <Wire.h>

#include <LiquidCrystal_I2C.h>

//I2C pins declaration
LiquidCrystal_I2C lcd(0x3f, 2, 1, 0, 4, 5, 6, 7, 3, POSITIVE);

#define SS_PIN 53
#define RST_PIN 5

MFRC522 mfrc522(SS_PIN, RST_PIN); // Create MFRC522 instance.

byte mac[] = { 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED };
byte ip[]={192,168,0,101}; //diganti

#define WEBSITE "192.168.0.100" //
char server[] = "192.168.0.100"; //

IPAddress gateway(192,168,0,254);
IPAddress dnserver(192,168,0,254);

EthernetClient client;

volatile int flow_frequency; // Measures flow sensor pulses
unsigned int l_hour; // Calculated litres/hour

unsigned char flowsensor = 2; // Sensor Input

unsigned long currentTime;

unsigned long cloopTime;
```

```
void flow () // Interrupt function
```

```
{  
    flow_frequency++;  
}
```

```
String id_pengguna = "00001"; //ganti dengan id pelanggan
```

```
int i;
```

```
String readPage();
```

```
String data="";
```

```
String rfid="";
```

```
char inString[32];
```

```
int stringPos = 0;
```

```
boolean startRead = false;
```

```
char readdat[15];
```

```
char updatedat[150];
```

```
char * p;
```

```
int kode;
```

```
void setup() {
```

```
    Serial.begin(9600);
```

```
    Ethernet.begin(mac, ip,dnserver,gateway);
```

```
    SPI.begin();
```

```
    mfrc522.PCD_Init();
```

```
    lcd.begin(16,2);//Defining 16 columns and 2 rows of lcd display
```

```
    lcd.backlight();//To Power ON the back light
```

```

pinMode(30,OUTPUT);

pinMode(7,OUTPUT);

pinMode(40,OUTPUT);

pinMode(flowsensor, INPUT);

digitalWrite(flowsensor, HIGH); // Optional Internal Pull-Up
attachInterrupt(0, flow, RISING); // Setup Interrupt
sei(); // Enable interrupts
currentTime = millis();
cloopTime = currentTime;

lcd.clear();

lcd.setCursor(0,0);

lcd.print("Skripsi UPAB");

}

boolean bip=0;

void loop() {

if ( !mfrc522.PICC_IsNewCardPresent()) {

currentTime = millis();

if(currentTime >= (cloopTime + 1000))

{

cloopTime = currentTime; // Updates cloopTime

// Pulse frequency (Hz) = 7.5Q, Q is flow rate in L/min.

l_hour = (flow_frequency * 60 / 7.5); // (Pulse frequency x 60 min) / 7.5 Q =
flowrate in L/hour

flow_frequency = 0; // Reset Counter

unsigned int lpd=l_hour*10/36; //ubah ke mili liter per detik

```

```
//Serial.println(String(lpd));

data="/upab/get.php?data=";data+=rfid;                data+="&dataID=";
data+=id_pengguna; data+="&use="; data+=String(lpd); data+=" HTTP/1.1";

Serial.println(data);

String buffget=connectAndRead();

rfid="";

Serial.println(buffget);

if(buffget=="habis"){

    lcd.clear();

    lcd.setCursor(0,0);

    lcd.print( "Kartu anda" );

    lcd.setCursor(0,1);

    lcd.print( "Sudah dipakai" );

}

else if(buffget=="hidup"){

    digitalWrite(30,1);

    digitalWrite(40,0);

}

else if(buffget=="mati"){

    digitalWrite(30,0);

    digitalWrite(40,0);

}

else if(buffget=="hidupMiris"){

    digitalWrite(30,1);

    if(bip==0)bip=1;else bip=0; digitalWrite(40,bip);

}

}
```

```

else if(buffget=="matiMiris"){
    digitalWrite(30,0);
    if(bip==0)bip=1;else bip=0; digitalWrite(40,bip);
}
else if(buffget.toInt()>0){
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("Berhasil Di isi");
    lcd.setCursor(0,1);
    lcd.print("saldo " + buffget.toInt());
}else{}
}
return;
}

if ( !mfr522.PICC_ReadCardSerial() ) { return; } //dibaca hanya ketika ada tab
for (byte i = 0; i < mfr522.uid.size; i++) {
    rfid+=(String(mfr522.uid.uidByte[i], HEX));}
    mfr522.PICC_HaltA();
    mfr522.PCD_StopCrypto1();
}

String connectAndRead(){
char Nilai1[40];

if (client.connect(server, 80)) {

    client.print("GET ");

    client.println(data);

    client.print( "Host: ");

```

```
client.println(WEBSITE);
client.println();
String pageValue = readPage();
int str_len = pageValue.length() + 1;
char buffconf[str_len];
pageValue.toCharArray(buffconf, str_len);
p = strtok (buffconf,"#");
if (p != NULL){
    strcpy(Nilai1,p);
    trim(Nilai1,strlen(Nilai1));
    p = strtok (NULL,"#");
    if (p != NULL){}
}
pageValue=Nilai1;
return pageValue;
}else{
    Serial.println("FAILED");
}
}
String readPage(){
    stringPos = 0;
    memset( &inString, 0, 32 );
    while(true){
        if (client.available()) {
            char c = client.read();
            if (c == '<' ) {
```

```
startRead = true;
}else if(startRead){
    if(c != '>'){
        inString[stringPos] = c;
        stringPos ++;
    }else{
        startRead = false;
        client.stop();
        client.flush();
        return inString;
    }
}
}
}
}
}

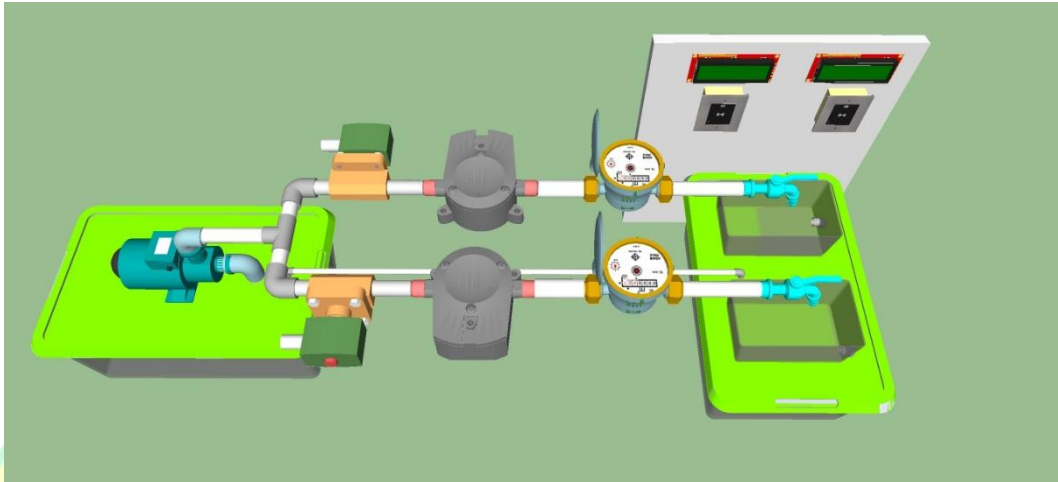
void trim(char *s, const int len){
    int end = len - 1;
    int start = 0;
    int y = 0;
    while ((start < len) && (s[start] <= ' '))
    {
        start++;
    }
    while ((start < end) && (s[end] <= ' '))
    {
        end--;
    }
}
```



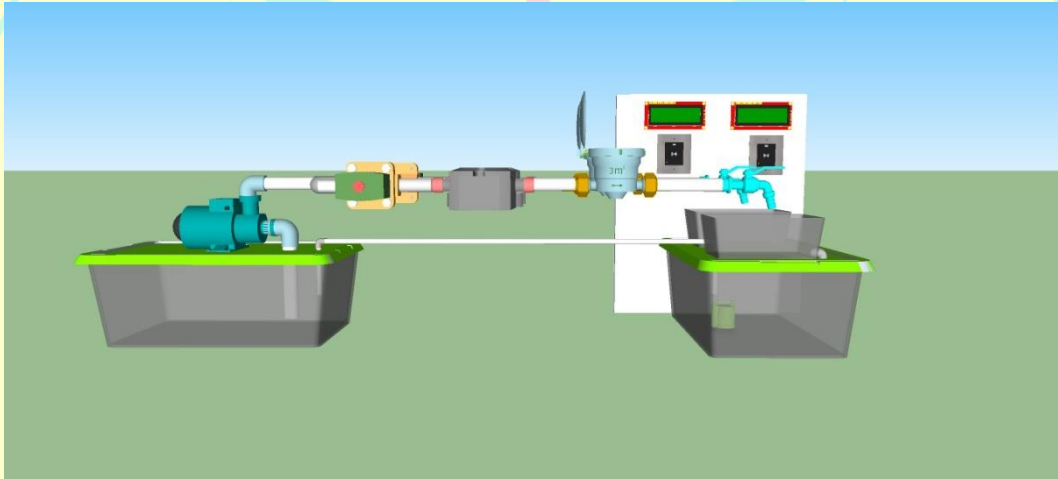
```
}  
  
if (start > end)  
{  
    memset(s, '\0', len);  
    return;  
}  
for (y = 0; (y + start) <= end; y++)  
{  
    s[y] = s[start + y];  
}  
memset((s + y), '\0', len - y);  
}
```



Desain Maket



Tampak Atas



Tampak Depan

UNIVERSITAS NEGERI JAI