

LAMPIRAN 1

Listing Program Arduino IDE

```
#include <SPI.h>
#include <Ethernet.h>
#include <EthernetUdp.h>
#include <SoftwareSerial.h>
#define RELAY1 6
#define RELAY2 7
#define RELAY3 8
#define RELAY4 9
#define RELAY_ON 0
#define RELAY_OFF 1

byte mac[] = {0x90,0xA2,0xDA,0x0D,0x8B,0x8F};
IPAddress ip(192, 168, 0, 105);
EthernetServer server(8032);
unsigned int localPort = 8032;
boolean incoming = 0;

char packetBuffer[UDP_TX_PACKET_MAX_SIZE];
char ReplyBuffer[] = "acknowledged";
EthernetUDP Udp;

void setup() {
  // start the Ethernet and UDP:
  Ethernet.begin(mac,ip);
  Udp.begin(localPort);
  pinMode(RELAY1, OUTPUT);
  pinMode(RELAY2, OUTPUT);
  pinMode(RELAY3, OUTPUT);
```

```

pinMode(RELAY4, OUTPUT);
digitalWrite(RELAY1, RELAY_OFF);
digitalWrite(RELAY2, RELAY_OFF);
digitalWrite(RELAY3, RELAY_OFF);
digitalWrite(RELAY4, RELAY_OFF);
Serial.begin(9600);
}

void loop() {

    int packetSize = Udp.parsePacket();

    Serial.println(packetSize);
    if(packetSize)
    {
        Serial.print("Received packet of size ");
        Serial.println(packetSize);
        Serial.print("From ");
        IPAddress remote = Udp.remoteIP();
        for (int i =0; i < 4; i++)
        {
            Serial.print(remote[i], DEC);
            if (i < 3)
            {
                Serial.print(".");
            }
        }
        Serial.print(", port ");
        Serial.println(Udp.remotePort());

        // read the packet into packetBuffer

```

```
Udp.read(packetBuffer,UDP_TX_PACKET_MAX_SIZE);
Serial.println("Contents:");
Serial.println(packetBuffer);
Serial.println(packetBuffer[0]);

if(packetBuffer[0]=='1'){
    digitalWrite(RELAY1, RELAY_ON);
} else if(packetBuffer[0]=='2'){
    digitalWrite(RELAY1, RELAY_OFF);
} else if(packetBuffer[0]=='3'){
    digitalWrite(RELAY2, RELAY_ON);
} else if(packetBuffer[0]=='4'){
    digitalWrite(RELAY2, RELAY_OFF);
} else if(packetBuffer[0]=='5'){
    digitalWrite(RELAY3, RELAY_ON);
} else if(packetBuffer[0]=='6'){
    digitalWrite(RELAY3, RELAY_OFF);
} else if(packetBuffer[0]=='7'){
    digitalWrite(RELAY4, RELAY_ON);
} else if(packetBuffer[0]=='8'){
    digitalWrite(RELAY4, RELAY_OFF);
}

Udp.beginPacket(Udp.remoteIP(),Udp.remotePort());
Udp.write("WAHh BHurA");
Udp.endPacket();
}

}
```

LAMPIRAN 2

Listing Program Eclipse IDE

MainActivity.java

```
package com.arduinoandroid;

import android.app.Activity;
import android.content.Context;
import java.net.*;
import android.net.ConnectivityManager;
import android.net.NetworkInfo;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import android.widget.TextView;

public class MainActivity extends Activity {

    Button led_1on ;
    Button led_1off ;
    Button led_2on ;
    Button led_2off ;
    Button led_3on ;
    Button led_3off ;
    Button led_4on ;
    Button led_4off ;
    String serverHostname1;
    DatagramSocket d1;
    InetAddress ip,retiip;
    DatagramPacket send,rec;
    String modifiedSentence;
    TextView textView1;
    TextView txtChange1;
    TextView txtChange2;
    TextView txtChange3;
    TextView txtChange4;

    private Boolean isOnline() {
        ConnectivityManager cm =
        (ConnectivityManager) getSystemService(Context.CONNECTIVITY_SERVICE);
        NetworkInfo ni = cm.getActiveNetworkInfo();
        if(ni != null && ni.isConnected())
            return true;

        return false;
    }
}
```

```

public void led(String s) throws Exception
{
    byte[] b=(s.getBytes());
    if(isOnline())
    {
        serverHostname1 = new String ("192.168.0.105");
        ip = InetAddress.getByName(serverHostname1);
        d1 = new DatagramSocket();
        try{
            send = new DatagramPacket(b,b.length, ip, 8032);
        }catch(Exception e){
            }
        d1.send(send);
        d1.setSoTimeout(10000);
        d1.receive(rec);
        modifiedSentence = new String(rec.getData());
        InetAddress returnIPAddress = rec.getAddress();
        Toast.makeText(getApplicationContext(),"Reply from
Server:"+returnIPAddress,Toast.LENGTH_LONG).show();
        d1.close();
    }
    else
    {
        Toast.makeText(getApplicationContext(),"No
network",Toast.LENGTH_LONG).show();
    }
}

private Button TextView(TextView txtChange12) {
    // TODO Auto-generated method stub
    return null;
}

public void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    led_1on=(Button)findViewById(R.id.led_1on);
    led_1off=(Button)findViewById(R.id.led_1off);
    led_2on=(Button)findViewById(R.id.led_2on);
    led_2off=(Button)findViewById(R.id.led_2off);
    led_3on=(Button)findViewById(R.id.led_3on);
    led_3off=(Button)findViewById(R.id.led_3off);
    led_4on=(Button)findViewById(R.id.led_4on);
    led_4off=(Button)findViewById(R.id.led_4off);
    textView1 = (TextView)findViewById(R.id.textView1);
    txtChange1 = (TextView)findViewById(R.id.txtChange1);
    txtChange2 = (TextView)findViewById(R.id.txtChange2);
    txtChange3 = (TextView)findViewById(R.id.txtChange3);
    txtChange4 = (TextView)findViewById(R.id.txtChange4);

    led_1on.setOnClickListener(new View.OnClickListener(){
public void onClick(View v) {
try {
    led("1");
}
}
}
}

```

```
} catch (Exception e) {  
System.out.println("Error::"+e);  
    }  
txtChange1.setText("Lamp1 ON");  
}  
    });
```

```
led_1off.setOnClickListener(new View.OnClickListener() {  
public void onClick(View v) {  
try {  
led("2");  
} catch (Exception e) {  
System.out.println("Error::"+e);  
    }  
txtChange1.setText("Lamp1 OFF");  
}  
    });
```

```
led_2on.setOnClickListener(new View.OnClickListener() {  
public void onClick(View v) {  
try {  
led("3");  
} catch (Exception e) {  
    System.out.println("Error::"+e);  
    }  
txtChange2.setText("Lamp2 ON");  
}  
    });
```

```
led_2off.setOnClickListener(new View.OnClickListener() {  
public void onClick(View v) {  
try {  
led("4");  
} catch (Exception e) {  
System.out.println("Error::"+e);  
    }  
txtChange2.setText("Lamp2 OFF");  
}  
    });
```

```
led_3on.setOnClickListener(new View.OnClickListener() {  
public void onClick(View v) {  
try {  
led("5");  
} catch (Exception e) {  
System.out.println("Error::"+e);  
    }  
txtChange3.setText("Lamp3 ON");  
}  
    });
```

```

led_3off.setOnClickListener(new View.OnClickListener() {
public void onClick(View v) {
try {
led("6");
} catch (Exception e) {
System.out.println("Error::"+e);
}
txtChange3.setText("Lamp3 OFF");
}
});

```

```

led_4on.setOnClickListener(new View.OnClickListener() {
public void onClick(View v) {
try {
led("7");
} catch (Exception e) {
System.out.println("Error::"+e);
}
txtChange4.setText("Lamp4 ON");
}
});

```

```

led_4off.setOnClickListener(new View.OnClickListener() {
public void onClick(View v) {
try {
led("8");
} catch (Exception e) {
System.out.println("Error::"+e);
}
txtChange4.setText("Lamp4 OFF");
}
});
}
}

```

activity_main.xml

```

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    android:background="#4169e1"
    tools:context=".MainActivity" >

    <TextView

```

```
    android:id="@+id/textView1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:text="Lighting Control"
    android:textAppearance="?android:attr/textAppearanceLarge" />
```

```
<TextView
    android:id="@+id/txtChange1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_below="@+id/textView1"
    android:text="Lamp1 "
    android:textAppearance="?android:attr/textAppearanceLarge" />
```

```
<TextView
    android:id="@+id/txtChange2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_below="@+id/linearLayout1"
    android:text="Lamp2"
    android:textAppearance="?android:attr/textAppearanceLarge" />
```

```
<TextView
    android:id="@+id/txtChange3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_below="@+id/linearLayout2"
    android:text="Lamp3"
    android:textAppearance="?android:attr/textAppearanceLarge" />
```

```
<TextView
    android:id="@+id/txtChange4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_below="@+id/linearLayout3"
    android:text="Lamp4"
    android:textAppearance="?android:attr/textAppearanceLarge" />
```

```
<TextView
    android:id="@+id/txtChange5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_below="@+id/linearLayout4"
    android:text="Created by Agustina"
    android:textSize="15dip"/>
```

```
<LinearLayout
    android:id="@+id/linearLayout1"
```



```
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:layout_alignLeft="@+id/txtChange1"
android:layout_below="@+id/txtChange1"
android:orientation="horizontal" >
```

```
<Button
    android:id="@+id/led_1on"
    android:layout_width="100dp"
    android:layout_height="80dp"
    android:layout_weight="0.39"
    android:text="Turn On Lamp1" />
```

```
<Button
    android:id="@+id/led_1off"
    android:layout_width="100dp"
    android:layout_height="80dp"
    android:layout_weight="0.39"
    android:text="Turn Off Lamp1" />
```

```
</LinearLayout>
```

```
<LinearLayout
    android:id="@+id/linearLayout2"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/txtChange2"
    android:layout_below="@+id/txtChange2"
    android:orientation="horizontal" >
```

```
<Button
    android:id="@+id/led_2on"
    android:layout_width="100dp"
    android:layout_height="80dp"
    android:layout_weight="0.39"
    android:text="Turn On Lamp2" />
```

```
<Button
    android:id="@+id/led_2off"
    android:layout_width="100dp"
    android:layout_height="80dp"
    android:layout_weight="0.39"
    android:text="Turn Off Lamp2" />
```

```
</LinearLayout>
```

```
<LinearLayout
    android:id="@+id/linearLayout3"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/txtChange3"
    android:layout_below="@+id/txtChange3"
    android:orientation="horizontal" >
```

```
<Button
    android:id="@+id/led_3on"
    android:layout_width="100dp"
```

```
    android:layout_height="80dp"
    android:layout_weight="0.39"
    android:text="Turn On Lamp3" />
```

```
<Button
    android:id="@+id/led_3off"
    android:layout_width="100dp"
    android:layout_height="80dp"
    android:layout_weight="0.39"
    android:text="Turn Off Lamp3" />
```

```
</LinearLayout>
```

```
<LinearLayout
    android:id="@+id/linearLayout4"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/txtChange4"
    android:layout_below="@+id/txtChange4"
    android:orientation="horizontal" >
```

```
<Button
    android:id="@+id/led_4on"
    android:layout_width="100dp"
    android:layout_height="80dp"
    android:layout_weight="0.39"
    android:text="Turn On Lamp4" />
```

```
<Button
    android:id="@+id/led_4off"
    android:layout_width="100dp"
    android:layout_height="80dp"
    android:layout_weight="0.39"
    android:text="Turn Off Lamp4" />
```

```
</LinearLayout>
```

```
</RelativeLayout>
```

arduinoandroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.arduinoandroid"
    android:versionCode="1"
    android:versionName="1.0" >

    <uses-sdk android:minSdkVersion="8" />
    <uses-permission android:name="android.permission.INTERNET"/>
    <uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />

<application

    android:label="@string/app_name" >
    <activity
```

```

        android:label="@string/app_name"
        android:name="com.arduinoandroid.MainActivity">
        <intent-filter >
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
</application>

</manifest>

```

Connectivity.java

```

package com.arduinoandroid;

import android.content.Context;
import android.net.ConnectivityManager;
import android.net.NetworkInfo;
import android.util.Log;

public class connectivity {
    private static connectivity instance = new connectivity();
    static Context context;
    ConnectivityManager connectivityManager;
    NetworkInfo wifiInfo, mobileInfo;
    boolean connected = false;

    public static connectivity getInstance(Context ctx) {
        context = ctx;
        return instance;
    }

    public boolean isOnline(Context con) {
        try {
            connectivityManager = (ConnectivityManager) con
                .getSystemService(Context.CONNECTIVITY_SERVICE);

            NetworkInfo networkInfo = connectivityManager.getActiveNetworkInfo();
            connected = networkInfo != null && networkInfo.isAvailable() &&
                networkInfo.isConnected();
            return connected;

        } catch (Exception e) {
            System.out.println("CheckConnectivity Exception: " + e.getMessage());
            Log.v("connectivity", e.toString());
        }
        return connected;
    }
}

```




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Lampu Melalui Android Berbasis
Mikrokontroler 328

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1	16-5-2016	Revisi Bab I	
2	19-5-2016	Acc Bab I, Revisi bab II	
3	1-6-2016	Acc Bab II, Revisi bab III	
4	2-6-2016	Acc Bab III, Revisi bab IV	
5	4-7-2016	Acc Bab IV, Revisi bab V	
6	5-7-2016	Acc Bab V	
7	18-7-2016	Revisi alat	
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**RANCANG BANGUN SISTEM KENDALI ON/OFF LAMPU
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