1. Splashscreen.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="match_parent"
android:layout_height="match_parent"
xmlns:ads="http://schemas.android.com/apk/res-auto"
android:background="#ffc3d697">

<ImageView
android:src="@mipmap/ic_launcher"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:scaleType="fitXY"
android:layout_centerVertical="true"
android:layout_alignLeft="@+id/progressBar1"
android:layout_alignStart="@+id/progressBar1"
android:id="@+id/imageView2" />

<ProgressBar
android:id="@+id/progressBar1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentBottom="true"
android:layout_centerHorizontal="true"
android:layout_marginBottom="58dp" />

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Aplikasi Mobile Suhu"
android:id="@+id/textView4"
android:layout_below="@+id/imageView2"
android:layout_centerHorizontal="true" />
</RelativeLayout>
```

2. Splashscreen.java

```java
package com.mobile.eki;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.os.Handler;
import android.view.Window;
import android.view.WindowManager;

public class splashscreen extends Activity {

//Set waktu lama splashscreen
private static int splashInterval = 2000;

@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
        requestWindowFeature(Window.FEATURE_NO_TITLE);
        getWindow().setFlags(WindowManager.LayoutParams.FLAG_FULLSCREEN,
                WindowManager.LayoutParams.FLAG_FULLSCREEN);

        setContentView(R.layout.splashscreen);
```

```java
new Handler().postDelayed(new Runnable() {


    @Override
    public void run() {
        // TODO Auto-generated method stub
        Intent i = new Intent(splashscreen.this, MainActivity.class);
                startActivity(i);


        //jeda selesai Splashscreen
        this.finish();
            }

    private void finish() {
        // TODO Auto-generated method stub

    }
        }, splashInterval);

    };

}
```

3. Activity_main.xml

```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:paddingLeft="@dimen/activity_horizontal_margin"
android:paddingRight="@dimen/activity_horizontal_margin"
android:paddingTop="@dimen/activity_vertical_margin"
android:paddingBottom="@dimen/activity_vertical_margin"
tools:context=".MainActivity"
android:background="#fff">

<ImageButton
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/imgBtnSuhu"
android:src="@mipmap/Home"
android:layout_centerVertical="true"
android:layout_centerHorizontal="true" />

</RelativeLayout>
```

4. MainActivity.java

```java
package com.mobile.eki;

import android.content.Intent;
import android.support.v7.app.ActionBarActivity;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.ImageButton;
```

```java
public class MainActivityextends ActionBarActivity {

@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        ImageButton BtnSuhu = (ImageButton)
findViewById(R.id.imgBtnSuhu);
        BtnSuhu.setOnClickListener(new View.OnClickListener() {

            @Override
public void onClick (View arg0) {
                Intent intent = new Intent(arg0.getContext(),
suhu.class);

                Bundle data = new Bundle();
                data.putString(".", ".");
                intent.putExtras(data);
                startActivityForResult(intent, 1);

            }

        });
    }

    @Override
public boolean onCreateOptionsMenu(Menu menu) {
// Inflate the menu; this adds items to the action bar if it is
present.
getMenuInflater().inflate(R.menu.menu_main, menu);
return true;
    }

    @Override
public boolean onOptionsItemSelected(MenuItem item) {
// Handle action bar item clicks here. The action bar will
        // automatically handle clicks on the Home/Up button, so long
        // as you specify a parent activity in AndroidManifest.xml.
int id = item.getItemId();

//noinspection SimplifiableIfStatement
if (id == R.id.action_settings) {
return true;
        }

return super.onOptionsItemSelected(item);
    }
}
```

5. Suhu.xml

```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"
    tools:context="suhu.aplikasi.com.aplikasieki.MainActivity"
    android:background="#fff">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Kipas"
        android:id="@+id/textView"
        android:focusableInTouchMode="false"
        android:textSize="25dp"

        android:layout_marginTop="28dp"
        android:layout_alignTop="@+id/btnOn1"
        android:layout_alignParentLeft="true"
        android:layout_alignParentStart="true" />

    <ImageButton
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:id="@+id/btnOn1"
        android:background="@mipmap/on"
        android:layout_above="@+id/btnOn2"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="38dp" />

    <ImageButton
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:id="@+id/btnOff1"
        android:background="@mipmap/off"
        android:layout_alignTop="@+id/btnOn1"
        android:layout_alignParentRight="true"
        android:layout_alignParentEnd="true" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Kondisi"
        android:id="@+id/textView2"
        android:textSize="25dp"

        android:layout_centerVertical="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentStart="true" />

    <ImageButton
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:id="@+id/btnOn2"
        android:layout_centerVertical="true"
```

```xml
android:layout_toRightOf="@+id/textViewID"
android:layout_toEndOf="@+id/textViewID"
android:background="@mipmap/CheckMarksm" />


<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textAppearance="?android:attr/textAppearanceLarge"
android:text="CONTROL SUHU RUANGAN"
android:id="@+id/textView3"
android:layout_alignParentTop="true"
android:layout_centerHorizontal="true" />

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textAppearance="?android:attr/textAppearanceLarge"
android:text="Info"
android:id="@+id/textViewID"
android:layout_alignParentBottom="true"
android:layout_centerHorizontal="true"
android:layout_marginBottom="91dp" />

</RelativeLayout>
```

6. Suhu.java


```java
package com.mobile.eki;

import android.app.Activity;
import android.app.PendingIntent;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.content.IntentFilter;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.Menu;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageButton;
import android.widget.TextView;
import android.widget.Toast;

public class suhuextends AppCompatActivity {

final String SMS_TEKIRIM = "SMS_SENT";
final String SMS_SAMPAI = "SMS_DELIVERED";
    TextView textViewInfo;

@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
        setContentView(R.layout.suhu);

textViewInfo = (TextView) findViewById(R.id.textViewID);
textViewInfo.setText("");
```

```java
            ImageButton tombolOn1 = (ImageButton) findViewById(R.id.btnOn1);
            tombolOn1.setOnClickListener(new View.OnClickListener() {

@Override
public void onClick(View arg0) {
                PendingIntent PITerkirim = PendingIntent.getBroadcast(
                        getApplication(), 0, new Intent(SMS_TEKIRIM), 0);

                PendingIntent PITersampaikan = PendingIntent.getBroadcast(
                        getApplication(), 0, new Intent(SMS_SAMPAI), 0);

                registerReceiver(new BroadcastReceiver() {
@Override
public void onReceive(Context context, Intent intent) {
                        String pesan;
switch (getResultCode()) {
case Activity.RESULT_OK:
                                pesan = "Kipas 1 Hidup";
break;
default:
                                pesan = "kipas tidak bisa dihidupkan. Kode
= " +
                                        getResultCode();
                        }

                        String isiSemula =
textViewInfo.getText().toString();
textViewInfo.setText(isiSemula +
"\n" + pesan);
                    }
                }, new IntentFilter(SMS_TEKIRIM));

                registerReceiver(new BroadcastReceiver() {
@Override
public void onReceive(Context context, Intent intent) {
                        String pesan;
switch (getResultCode()) {
case Activity.RESULT_OK:
                                pesan = "Instruksi Sukses";
break;
default:
                                pesan = " Instruksi Gagal. Kode = " +
                                        getResultCode();
                        }
                        String isiSemula =
textViewInfo.getText().toString();
textViewInfo.setText(isiSemula + "\n" + pesan);
                    }
                }, new IntentFilter(SMS_SAMPAI));

                String nomor = "081215161052";
                String pesan = "Kipas 1 on";

                SmsManager sms = SmsManager.getDefault();
                sms.sendTextMessage(nomor, null, pesan, PITerkirim,
PITersampaikan);
            }
        });

        ImageButton tombolOff1 = (ImageButton) findViewById(R.id.btnOff1);
        tombolOff1.setOnClickListener(new View.OnClickListener() {
```

```java
@Override
public void onClick(View arg0) {
                PendingIntent PITerkirim = PendingIntent.getBroadcast(
                        getApplication(), 0, new Intent(SMS_TEKIRIM), 0);

                PendingIntent PITersampaikan = PendingIntent.getBroadcast(
                        getApplication(), 0, new Intent(SMS_SAMPAI), 0);

                registerReceiver(new BroadcastReceiver() {
@Override
public void onReceive(Context context, Intent intent) {
                        String pesan;
switch (getResultCode()) {
case Activity.RESULT_OK:
                                pesan = "Kipas Mati";
break;
default:
                                pesan = "Kipas tidak bisa dimatikan. Kode =
" +
                                        getResultCode();
                        }

                        String isiSemula =
textViewInfo.getText().toString();
textViewInfo.setText(isiSemula +
"\n" + pesan);
                }
                }, new IntentFilter(SMS_TEKIRIM));

                registerReceiver(new BroadcastReceiver() {
@Override
public void onReceive(Context context, Intent intent) {
                        String pesan;
switch (getResultCode()) {
case Activity.RESULT_OK:
                                pesan = "Instruksi Sukses";
break;
default:
                                pesan = " Instruksi Gagal. Kode = " +
                                        getResultCode();
                        }
                        String isiSemula =
textViewInfo.getText().toString();
textViewInfo.setText(isiSemula + "\n" + pesan);
                }
                }, new IntentFilter(SMS_SAMPAI));

                String nomor = "081215161052";
                String pesan = "Kipas 1 off";

                SmsManager sms = SmsManager.getDefault();
                sms.sendTextMessage(nomor, null, pesan, PITerkirim,
PITersampaikan);

        }
        });


        ImageButton tombolOn2 = (ImageButton) findViewById(R.id.btnOn2);
        tombolOn2.setOnClickListener(new View.OnClickListener() {
```

```java
@Override
public void onClick(View arg0) {
                PendingIntent PITerkirim = PendingIntent.getBroadcast(
                        getApplication(), 0, new Intent(SMS_TEKIRIM), 0);

                PendingIntent PITersampaikan = PendingIntent.getBroadcast(
                        getApplication(), 0, new Intent(SMS_SAMPAI), 0);

                registerReceiver(new BroadcastReceiver() {
@Override
public void onReceive(Context context, Intent intent) {
                        String pesan;
switch (getResultCode()) {
case Activity.RESULT_OK:
                                pesan = "Kondisi Terkirim";

break;
default:

                                pesan = "Kondisi tidak bisa dihidupkan.
Kode = " +

                                        getResultCode();
                        }

                        String isiSemula =
textViewInfo.getText().toString();
textViewInfo.setText(isiSemula +
"\n" + pesan);
                }
                }, new IntentFilter(SMS_TEKIRIM));

                registerReceiver(new BroadcastReceiver() {
@Override
public void onReceive(Context context, Intent intent) {
                        String pesan;
switch (getResultCode()) {
case Activity.RESULT_OK:
                                pesan = "Instruksi Sukses";

break;
default:

                                pesan = " Instruksi Gagal. Kode = " +
                                        getResultCode();
                        }
                        String isiSemula =
textViewInfo.getText().toString();
textViewInfo.setText(isiSemula + "\n" + pesan);
                }
                }, new IntentFilter(SMS_SAMPAI));

                String nomor = "081215161052";
                String pesan = "Ping";

                SmsManager sms = SmsManager.getDefault();
                sms.sendTextMessage(nomor, null, pesan, PITerkirim,
PITersampaikan);

        }
    });

    }

@Override
```

```java
public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.menu_main, menu);
return true;

    }
}
```

```cpp
#include "SIM900.h"
#include "sms.h"
#include "SoftwareSerial.h"
#include "sms.h"
SMSGSM sms;

#include <DS3231.h>
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include <SHT1x.h>
#define dataPin  6
#define clockPin 7
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27,16,2);

SHT1x sht1x(dataPin, clockPin);
DS3231  rtc(SDA, SCL);
Time  t;
byte derajat = B11011111;


boolean started=false;

char smsbuffer[160];
char n[20];
char n1[20];
int inc=10;
char message[180];

char temp_c_str[5];
char humidity_str[5];

int led_power = 11;
int led_relay = 10;
int relay = 4;

void setup()
{
 lcd.init();
 lcd.init();
 lcd.backlight();
 rtc.begin();
 Serial.begin(9600);
 pinMode(led_power, OUTPUT);
 pinMode(led_relay, OUTPUT);
 pinMode(relay, OUTPUT);
 digitalWrite(relay,HIGH);
```

```
    digitalWrite(led_power, HIGH);
    Serial.println();
    lcd.setCursor(2,1);
    if (gsm.begin(2400)){
      Serial.println("\nstatus=READY");
      lcd.setCursor(0,0);
      lcd.print("SIM900 : Ready");
      started=true;
    }
    else Serial.println("\nstatus=IDLE");
    if(started){
      delsms();
    }


    rtc.setDOW(SABTU);     // Set Day-of-Week to SUNDAY
    rtc.setTime(18, 30, 59);     // Set the time to 12:00:00 (24hr format)
    rtc.setDate(07, 8, 2016);   // Set the date to January 1st, 2014
}

void loop()
{
  t = rtc.getTime();
  float humidity;
  lcd.setCursor(0,1);
  lcd .print(rtc.getTemp());
  lcd.write(derajat);
  lcd.print("C");
  lcd.print(" ");
  humidity = sht1x.readHumidity();
  lcd.print(humidity);
  lcd.print("%");

  //program SMS Baru
  int pos=0;
  if(started){
    pos=sms.IsSMSPresent(SMS_ALL);
    if(pos){
      Serial.println("IsSMSPresent at pos ");
      Serial.println(pos);
      sms.GetSMS(pos,n,smsbuffer,100);
        Serial.println(n);
        Serial.println(smsbuffer);

        //Program SMS Menghidupkan Kipas
        if(!strcmp(smsbuffer,"K" "i" "p" "a" "s" " " "1" " " "o" "n")){
        digitalWrite(led_relay,HIGH);
        digitalWrite(relay,LOW);
```

```cpp
if(started){
if (sms.SendSMS(n, "Kipas 1 Dihidupkan"))
Serial.println("\nSMS sent OK");
}
}

//Program SMS Mematikan Kipas
if(!strcmp(smsbuffer,"K" "i" "p" "a" "s" " " "1" " " "o" "f" "f")){
digitalWrite(led_relay,LOW);
digitalWrite(relay,HIGH);
if(started){
if (sms.SendSMS(n, "Kipas 1 Dimatikan"))
Serial.println("\nSMS sent OK");
}
}

//Program SMS Auto Reply
if(!strcmp(smsbuffer,"P" "i" "n" "g")){
float temp_c;
float temp_f;
float humidity;
temp_c = sht1x.readTemperatureC();
humidity = sht1x.readHumidity();
message[0]='\0';
strcat(message,"Hari : ");
strcat(message,rtc.getDOWStr());
strcat(message,"\n");
strcat(message,"Tanggal : ");
strcat(message,rtc.getDateStr());
strcat(message,"\n");
strcat(message,"Jam : ");
strcat(message,rtc.getTimeStr());
strcat(message,"\n");
strcat(message,"Suhu : ");
itoa(temp_c,temp_c_str,10);
strcat(message,temp_c_str);
strcat(message," C");
strcat(message," ");
strcat(message,"\n");
strcat(message,"Kelembaban : ");
itoa(humidity,humidity_str,10);
strcat(message,humidity_str);
strcat(message," %");
if(started){
if (sms.SendSMS(n, message))
Serial.println("\nSMS sent OK");
}
}
```

```
            else
            {
            }
            delsms();
   }
 }
};

//Program Hapus SMS
void delsms(){
 Serial.println("delsms");
 for (int i=0; i<10; i++){  //do it max 10 times
    int pos=sms.IsSMSPresent(SMS_ALL);
    if (pos!=0){
     Serial.print("\nFind SMS at the pos ");
     Serial.println(pos);
     if (sms.DeleteSMS(pos)==1){
      Serial.print("\nDeleted SMS at the pos ");
      Serial.println(pos);
     }
     else
     {
      Serial.print("\nCant del SMS at the pos ");
      Serial.println(pos);
     }
    }
  }

}
```

BIODATA PENYUSUN

Eki Femitra Fratama merupakan nama lengkap dari penyusun, lahir pada tanggal 23 November 1992 di Pangkalpinang. Penyusun menyelesaikan pendidikan Sekolah Dasar di SD Negeri 06 Pangkalpinang pada tahun 2004 dan pendidikan Sekolah Menengah Pertama di SMP Negeri 7 Pangkalpinang pada tahun 2007 kemudian dilanjutkan ke Sekolah Menengah Kejuruan di SMK Negeri 2 Pangkalpinang pada tahun 2010. Pendidikan Strata 1 (S1) penyusun ditempuh di Jurusan Teknik Elektro Fakultas Teknik Universitas Bangka Belitung dengan mengambil konsentrasi Elektronika Terapan dan judul penelitiannya adalah "Rancang Bangun Sistem Pemantauan Suhu Ruangan dan Pengendalian Menggunakan Arduino dengan Aplikasi Android Berbasis SMS *Gateway*" selesai pada tahun 2016. Penyusun bertempat tinggal di Jl. Rajungan Selindung Baru Pangkalpinang Provinsi Kepulauan Bangka Belitung.