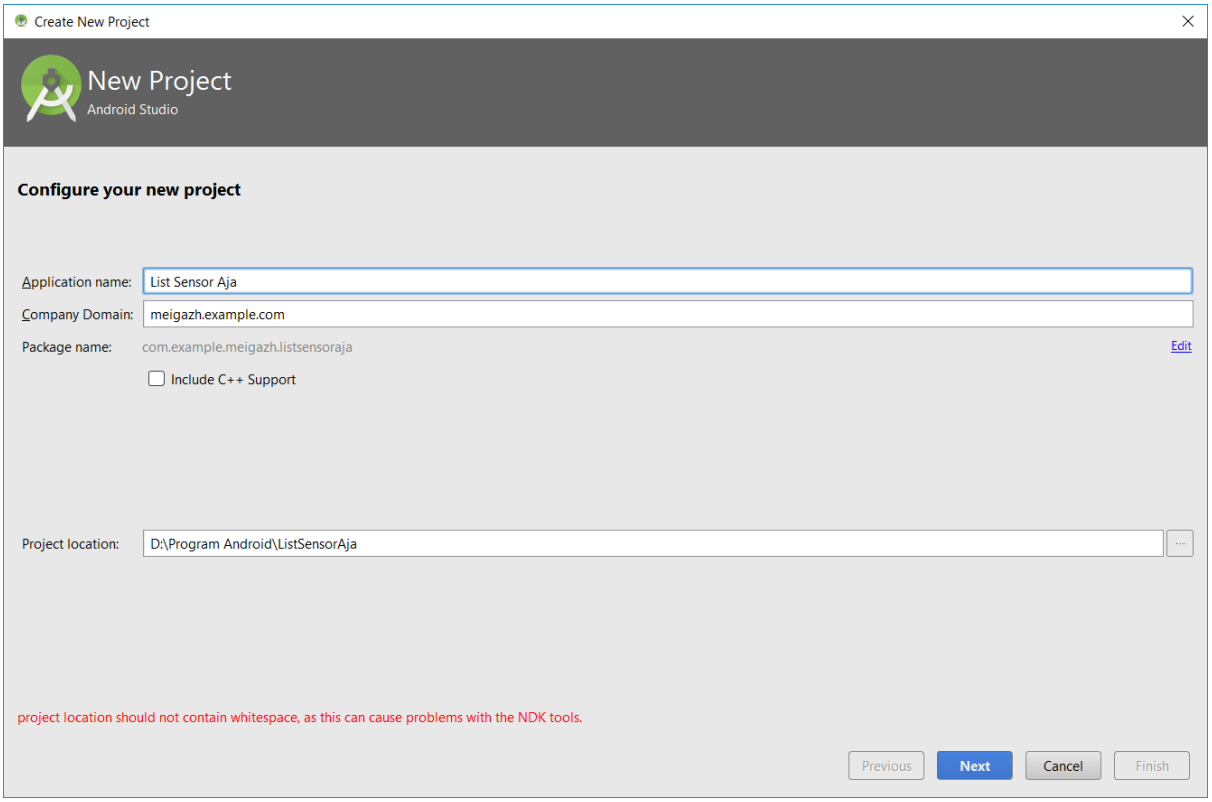
Tutorial Membuat aplikasi list sensor pada android

List Sensor



Activity_Main.xml

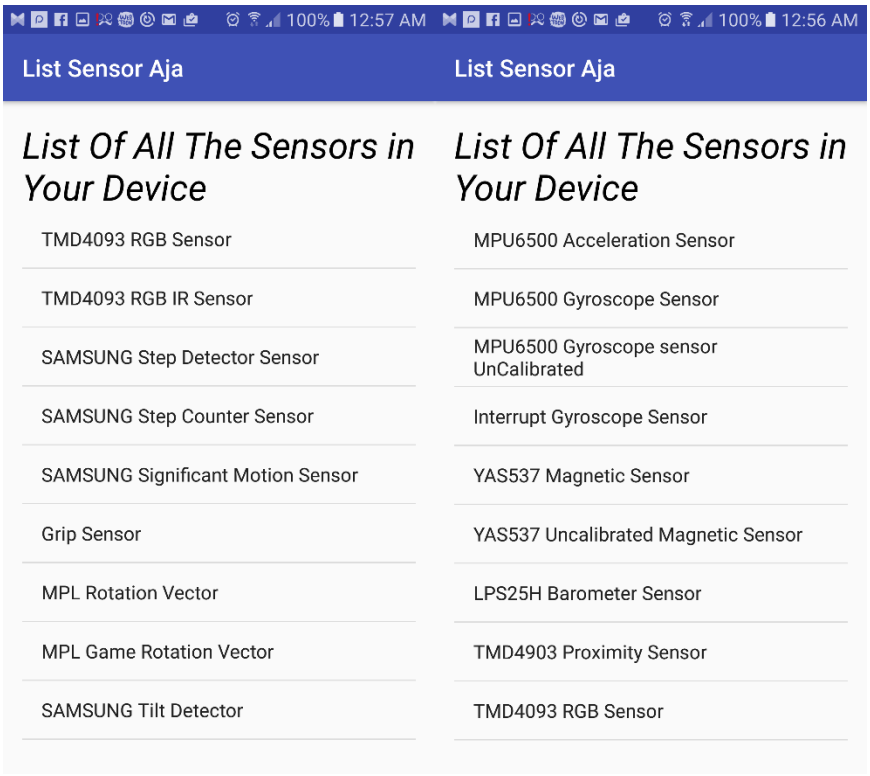
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.meigazh.listsensoraja.MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="List Of All The Sensors in Your Device"
        android:textColor="#000000"
```

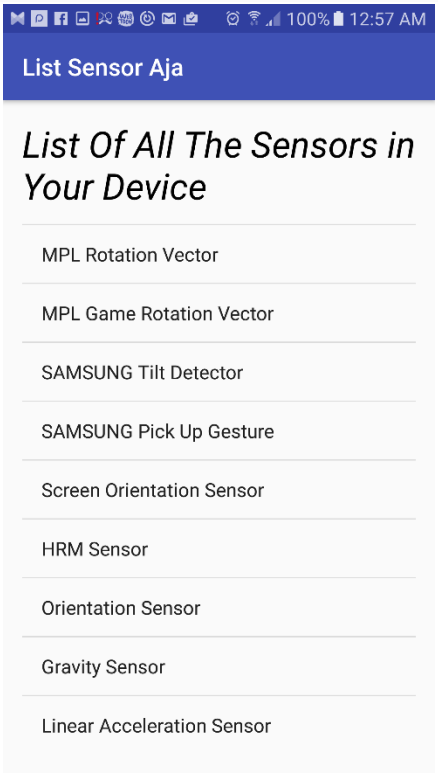
```
        android:textSize="30sp"
        android:textStyle="italic"
        android:typeface="sans" />

    <ListView
        android:id="@+id/listView1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/textView"
        android:layout_centerInParent="true" >
    </ListView>
</RelativeLayout>
```

MainActivity.java

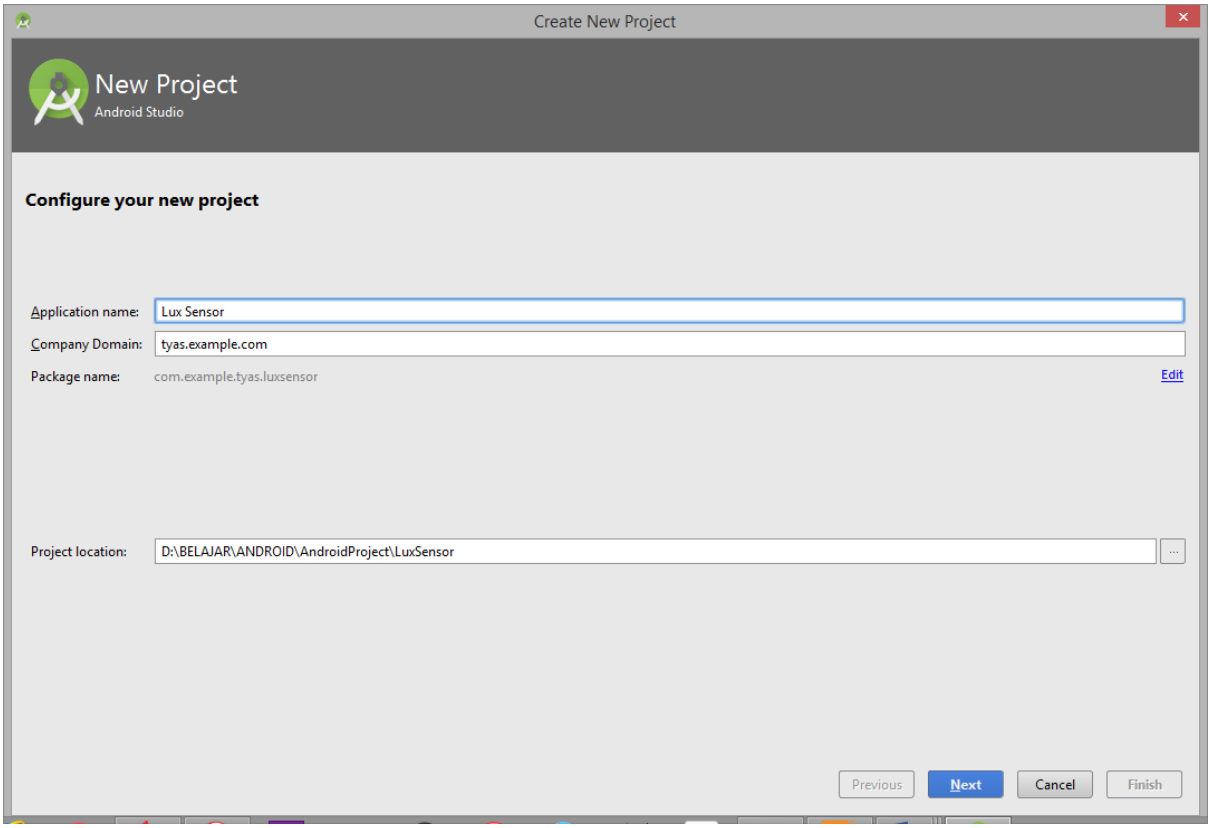
```
package com.example.meigazh.listsensoraja;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import java.util.ArrayList;
import java.util.List;

import android.hardware.Sensor;
import android.hardware.SensorManager;
import android.content.Context;
import android.widget.ArrayAdapter;
import android.widget.ListView;
public class MainActivity extends AppCompatActivity {
    private ListView listView;
    private SensorManager mSensorManager;
    //list of sensors
    private List<Sensor> deviceSensors = null;
    //list of sensors names
    private List<String> deviceSensorsList = new ArrayList<String>();

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        //create instance of list view
        listView = ((ListView) findViewById(R.id.listView1));
        //create instance of sensor manager and get system sensor service
        mSensorManager = (SensorManager)
getSystemService(Context.SENSOR_SERVICE);
        //get list of all types of sensors in you device
        deviceSensors = mSensorManager.getSensorList(Sensor.TYPE_ALL);
  /*you can get specific sensors by selecting type in getSensorList(type
you want);*/
        for(Sensor s: deviceSensors){
            //get names of all the sensors in your device and add into list
            deviceSensorsList.add(s.getName());
        }
        listView.setAdapter(new ArrayAdapter<String>(this,
                android.R.layout.simple_list_item_1, deviceSensorsList));

    }
}
```

Hasil:


100% 12:57 AM
List Sensor Aja
List Of All The Sensors in Your Device
TMD4093 RGB Sensor
TMD4093 RGB IR Sensor
SAMSUNG Step Detector Sensor
SAMSUNG Step Counter Sensor
SAMSUNG Significant Motion Sensor
Grip Sensor
MPL Rotation Vector
MPL Game Rotation Vector
SAMSUNG Tilt Detector
100% 12:56 AM
List Sensor Aja
List Of All The Sensors in Your Device
MPU6500 Acceleration Sensor
MPU6500 Gyroscope Sensor
MPU6500 Gyroscope sensor UnCalibrated
Interrupt Gyroscope Sensor
YAS537 Magnetic Sensor
YAS537 Uncalibrated Magnetic Sensor
LPS25H Barometer Sensor
TMD4903 Proximity Sensor
TMD4093 RGB Sensor


100% 12:57 AM
List Sensor Aja
List Of All The Sensors in Your Device
MPL Rotation Vector
MPL Game Rotation Vector
SAMSUNG Tilt Detector
SAMSUNG Pick Up Gesture
Screen Orientation Sensor
HRM Sensor
Orientation Sensor
Gravity Sensor
Linear Acceleration Sensor

Light Sensor



Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<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">

    <TextView
        android:id="@+id/text2"
        android:text="Sensor Cahaya"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <TextView
        android:id="@+id/text"
        android:textSize="20sp"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
```

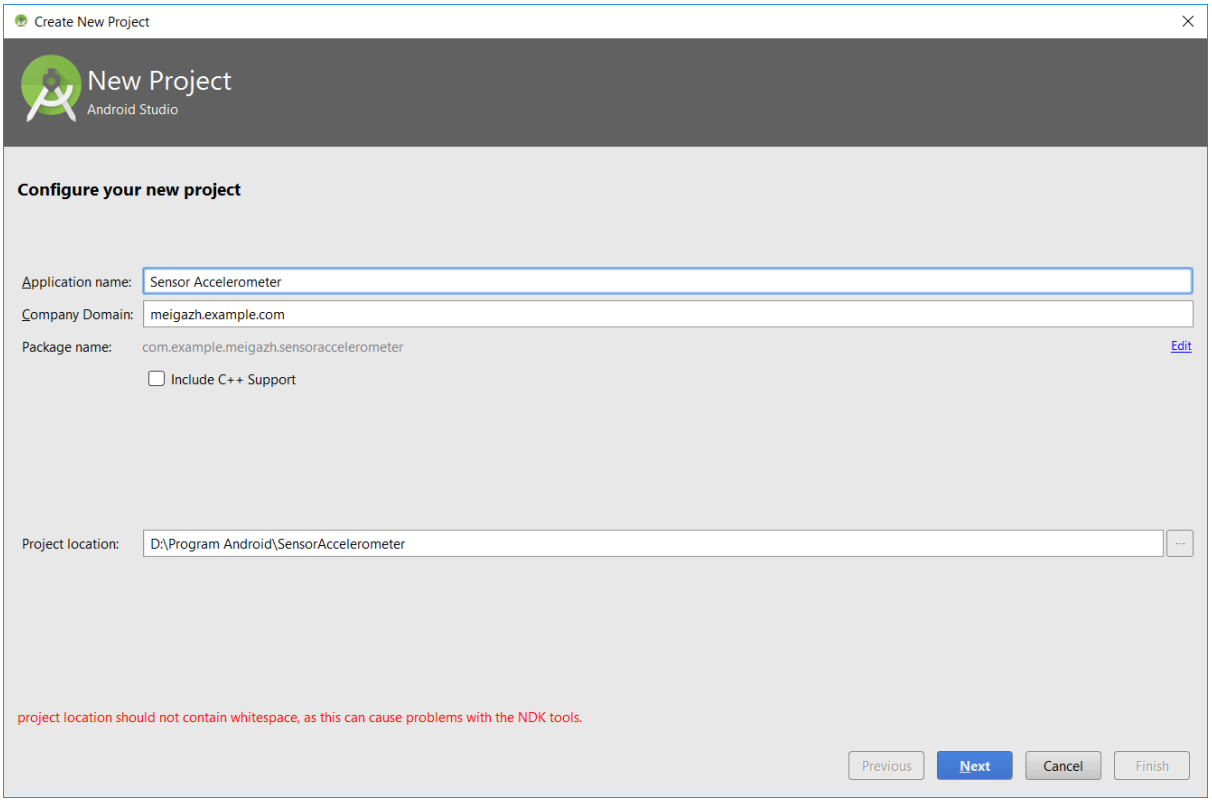
```
        android:layout_below="@+id/text2"/>
</RelativeLayout>
```

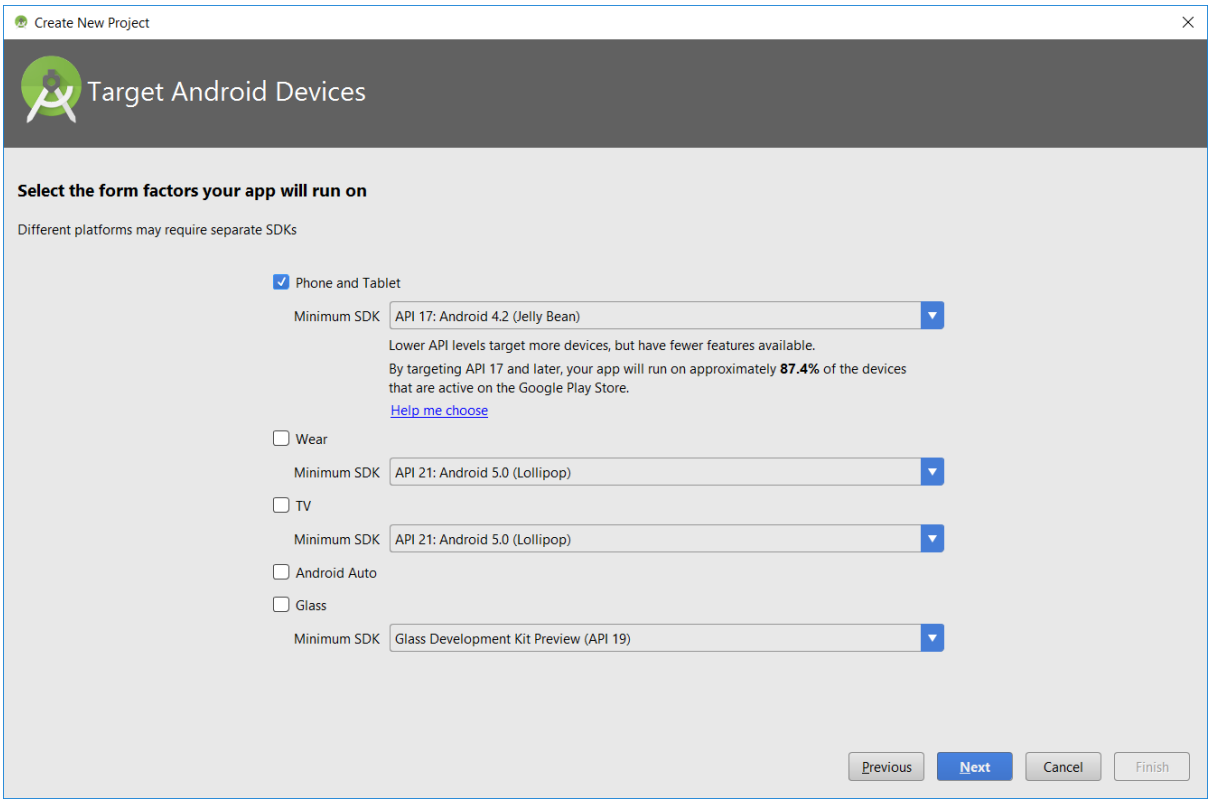
MainActivity.java

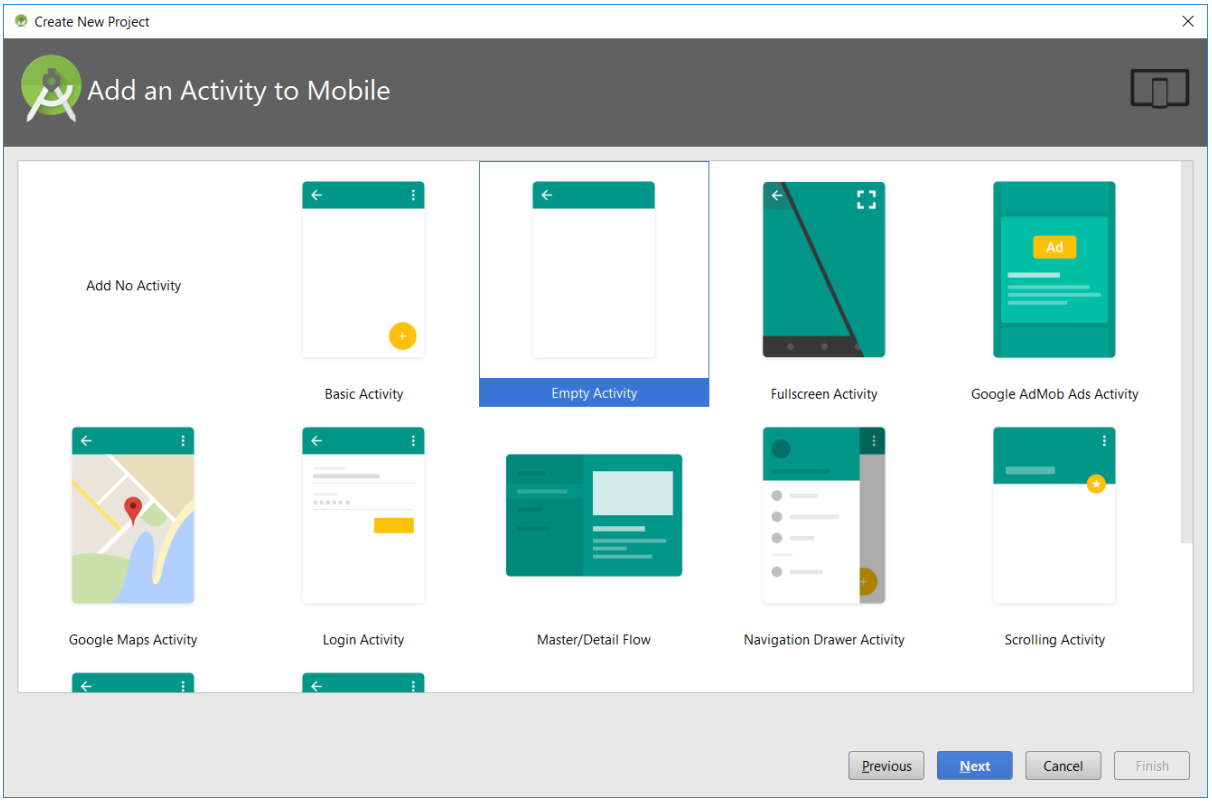
```
package com.example.tyas.luxsensor;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.hardware.Sensor;
import android.hardware.SensorEvent;
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.os.Bundle;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements
SensorEventListener {
    private SensorManager mgr;
    private Sensor light;
    private TextView text,text2;
    private StringBuilder msg = new StringBuilder(2048);

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mgr = (SensorManager) this.getSystemService(SENSOR_SERVICE);

        light = mgr.getDefaultSensor(Sensor.TYPE_LIGHT);

        text = (TextView) findViewById(R.id.text);
        text2 = (TextView) findViewById(R.id.text2);
    }
    @Override
    protected void onResume() {
        mgr.registerListener(this, light, SensorManager.SENSOR_DELAY_NORMAL);
        super.onResume();
    }

    @Override
    protected void onPause() {
        mgr.unregisterListener(this, light);
        super.onPause();
    }
    @Override
    public void onSensorChanged(SensorEvent event) {

        text.setText("Masuk ke sensor event: " + event.values[0] + " SI lux
units\n");
        text.invalidate();
    }

    @Override
    public void onAccuracyChanged(Sensor sensor, int accuracy) {
        text2.setText(sensor.getName() + " Akurasi berubah : " + accuracy +
                (accuracy==1?" (LOW)":(accuracy==2?" (MED)":" (HIGH)")) +
"\n");
        text2.invalidate();
```

```
        }
}
```

Accelerometer




Create New Project
Target Android Devices
Select the form factors your app will run on
Different platforms may require separate SDKs
Phone and Tablet
Minimum SDK
API 17: Android 4.2 (Jelly Bean)
Lower API levels target more devices, but have fewer features available.
By targeting API 17 and later, your app will run on approximately 87.4% of the devices that are active on the Google Play Store.
Help me choose
Wear
Minimum SDK
API 21: Android 5.0 (Lollipop)
TV
Minimum SDK
API 21: Android 5.0 (Lollipop)
Android Auto
Glass
Minimum SDK
Glass Development Kit Preview (API 19)
Previous
Next
Cancel
Finish


Create New Project
Add an Activity to Mobile
Add No Activity
Basic Activity
Empty Activity
Fullscreen Activity
Ad
Google AdMob Ads Activity
Google Maps Activity
Login Activity
Master/Detail Flow
Navigation Drawer Activity
Scrolling Activity
Previous
Next
Cancel
Finish

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    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="com.example.meigazh.sensoraccelerometer.MainActivity">

    <TextView
        android:id="@+id/textView1"
        android:textSize="25sp"
        android:textColor="#4169E1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="65dp"
        android:text="Accelerometer" />

    <TextView
        android:id="@+id/textView2"
        android:textSize="18sp"
        android:textColor="#FF0000"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_above="@+id/textView3"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="30dp"
        android:text="X Value" />

    <TextView
        android:id="@+id/textView3"
        android:textSize="18sp"
        android:textColor="#FF0000"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="Y Value" />

    <TextView
        android:id="@+id/textView4"
        android:textSize="18sp"
        android:textColor="#FF0000"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_below="@+id/textView3"
        android:layout_marginTop="30dp"
```

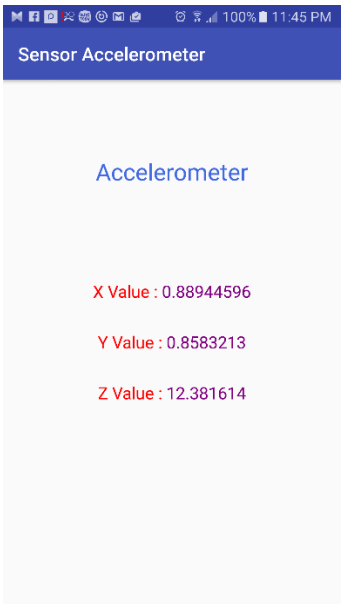
```
        android:text="Z Value" />
</RelativeLayout>
```

Main_activity.java

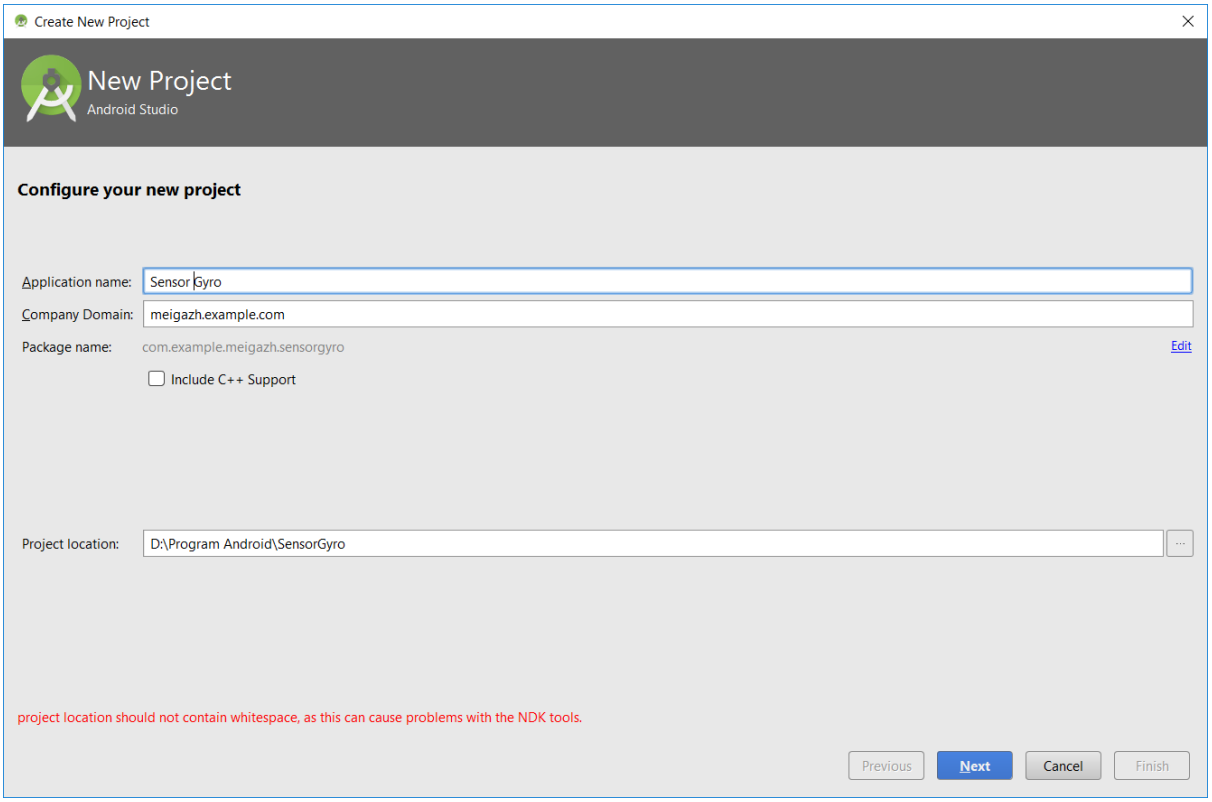
```
package com.example.meigazh.sensoraccelerometer;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.hardware.Sensor;
import android.hardware.SensorEvent;
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.text.Html;
import android.view.Menu;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements
SensorEventListener{
    private SensorManager sensorManager;

    TextView x;
    TextView y;
    TextView z;

    String sx, sy, sz;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        x = (TextView) findViewById (R.id.textView5);
        y = (TextView) findViewById (R.id.textView6);
        z = (TextView) findViewById (R.id.textView4);

        sensorManager = (SensorManager) getSystemService(SENSOR_SERVICE);

        sensorManager.registerListener(this, sensorManager.getDefaultSensor
                (Sensor.TYPE_ACCELEROMETER),
SensorManager.SENSOR_DELAY_NORMAL);
    }

    @Override
    public void onSensorChanged(SensorEvent event) {
        if(event.sensor.getType() == Sensor.TYPE_ACCELEROMETER){

            float xVal = event.values[0];
            float yVal = event.values[1];
            float zVal = event.values[2];

            sx = "X Value : <font color = '#800080'> " + xVal + "</font>";
            sy = "Y Value : <font color = '#800080'> " + yVal + "</font>";
            sz = "Z Value : <font color = '#800080'> " + zVal + "</font>";

            x.setText(Html.fromHtml(sx));
```

```
            y.setText(Html.fromHtml(sy));
            z.setText(Html.fromHtml(sz));
        }
    }

    @Override
    public void onAccuracyChanged(Sensor sensor, int accuracy) {

    }
}
```

Hasil:



Sensor Gyroscope



Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    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="com.example.meigazh.sensorgyro.MainActivity">

    <TextView
        android:id="@+id/txt1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Android Sensor demo"/>

    <TextView
        android:id="@+id/textView2"
        android:textSize="18sp"
        android:textColor="#FF0000"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_above="@+id/textView3"
```

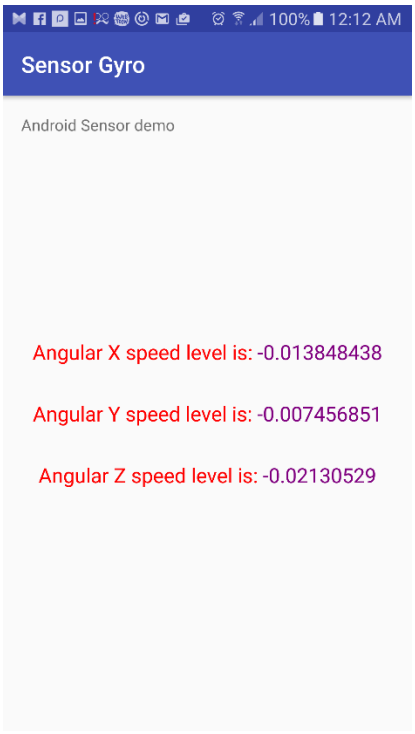
```
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="30dp"
        android:text="Angular X speed level is:" />

    <TextView
        android:id="@+id/textView3"
        android:textSize="18sp"
        android:textColor="#FF0000"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="Angular Y speed level is:" />

    <TextView
        android:id="@+id/textView4"
        android:textSize="18sp"
        android:textColor="#FF0000"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_below="@+id/textView3"
        android:layout_marginTop="30dp"
        android:text="Angular Z speed level is:" />
</RelativeLayout>
```

mainActivity.java

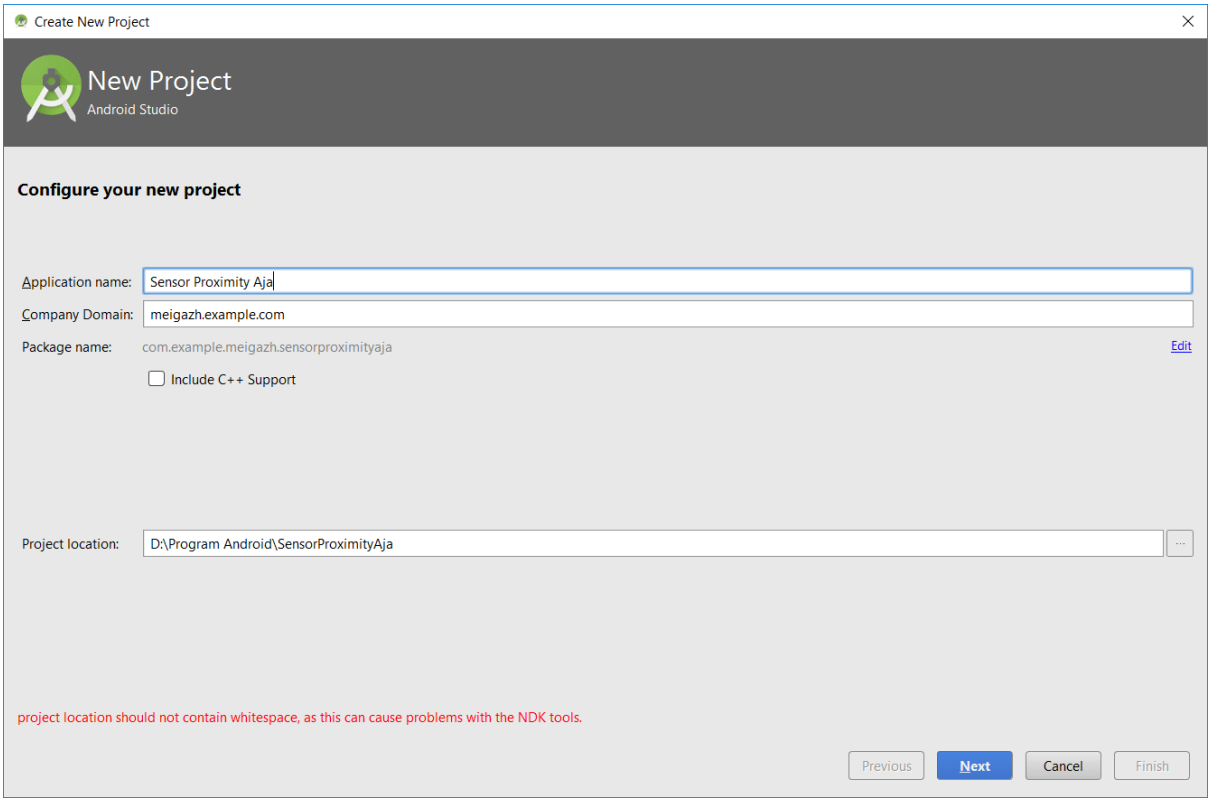
```
package com.example.meigazh.sensorgyro;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.hardware.Sensor;
import android.hardware.SensorEvent;
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.os.Build;
import android.text.Html;
import android.widget.TextView;
import android.widget.Toast;
import android.annotation.TargetApi;
import android.content.Context;
import android.content.pm.PackageManager;
public class MainActivity extends AppCompatActivity implements
SensorEventListener {
    private TextView tv2,tv3,tv4;
    private SensorManager mSensorManager;
    private Sensor mGyroSensor;
    String sx, sy, sz;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        tv2= (TextView)findViewById(R.id.textView2);
        tv3= (TextView)findViewById(R.id.textView3);
        tv4= (TextView)findViewById(R.id.textView4);
```

```
        // Get an instance of the sensor service
        mSensorManager = (SensorManager)
getSystemService(Context.SENSOR_SERVICE);
        mGyroSensor=mSensorManager.getDefaultSensor(Sensor.TYPE_GYROSCOPE);

        PackageManager PM= this.getPackageManager();
        boolean gyro =
PM.hasSystemFeature(PackageManager.FEATURE_SENSOR_GYROSCOPE);
        if(gyro){
            Toast.makeText(getApplicationContext(),"Gyroscope sensors are
present", Toast.LENGTH_LONG).show();
        }

    }

    @Override
    public void onSensorChanged(SensorEvent event) {
        float angularXSpeed = event.values[0];
        float angularYSpeed = event.values[1];
        float angularZSpeed = event.values[2];
        sx = "Angular X speed level is: <font color = '#800080'> " +
angularXSpeed  + "</font>";
        sy = "Angular Y speed level is: <font color = '#800080'> " +
angularYSpeed+ "</font>";
        sz = "Angular Z speed level is: <font color = '#800080'> " +
angularZSpeed + "</font>";
        tv2.setText(Html.fromHtml(sx));
        tv3.setText(Html.fromHtml(sy));
        tv4.setText(Html.fromHtml(sz));
        //tv.setText("Angular X speed level is: " + "" +angularXSpeed);
    }

    @Override
    public void onAccuracyChanged(Sensor sensor, int accuracy) {

    }
    @Override
    protected void onResume() {
        // Register a listener for the sensor.
        super.onResume();
        mSensorManager.registerListener(this, mGyroSensor,
SensorManager.SENSOR_DELAY_NORMAL);
    }

    @Override
    protected void onPause() {
        // important to unregister the sensor when the activity pauses.
        super.onPause();
        mSensorManager.unregisterListener(this);
    }
}
```

Hasil:



Sensor Proximity



Activity_main.xml

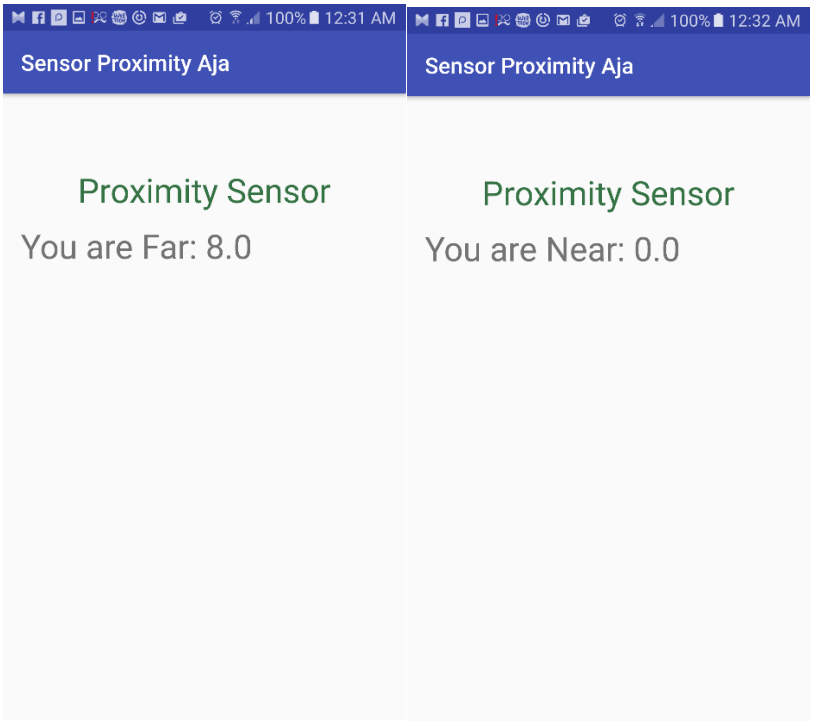
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.meigazh.sensorproximityaja.MainActivity">

    <TextView
        android:id="@+id/TextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="50dp"
        android:text="Proximity Sensor"
        android:textColor="#357345"
        android:textSize="30sp" />
    <TextView
        android:id="@+id/tVProximity"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/TextView"
        android:layout_marginTop="10dp"
        android:textSize="30sp"
        />
</RelativeLayout>
```

Main_activity.java

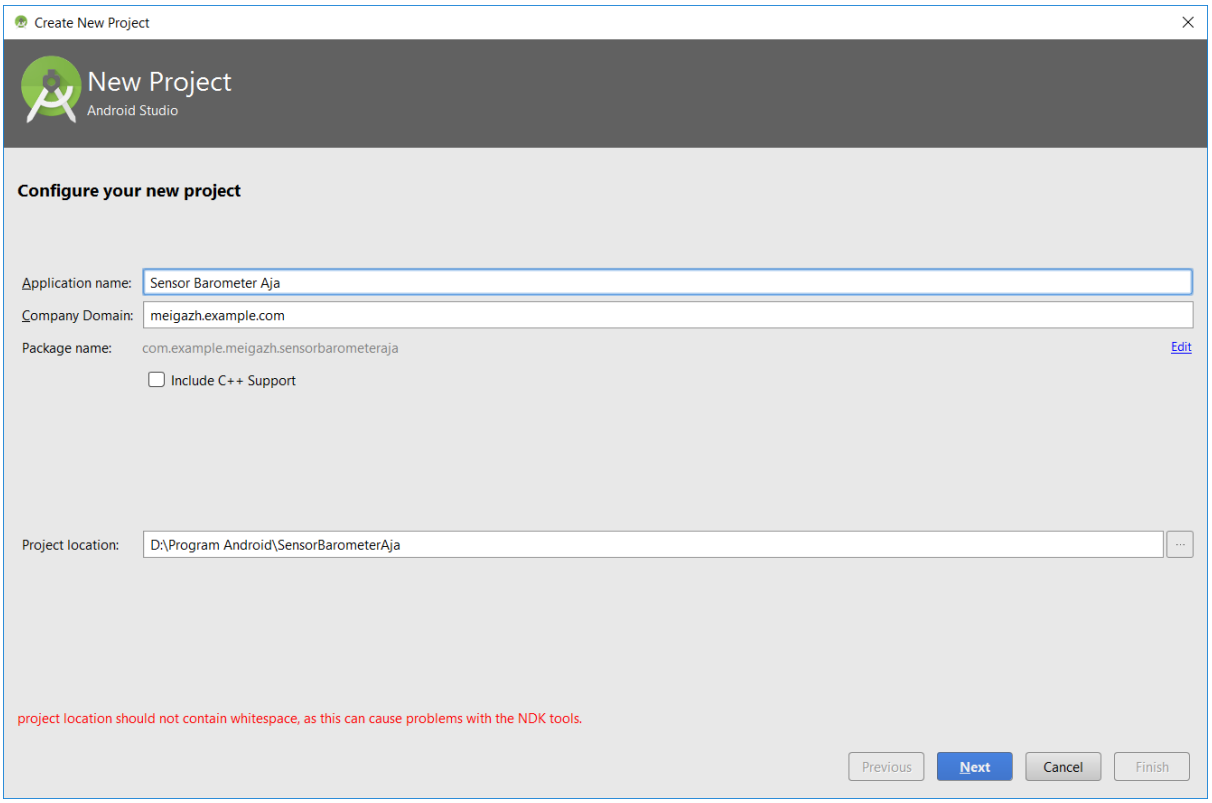
```
package com.example.meigazh.sensorproximityaja;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.hardware.Sensor;
import android.hardware.SensorEvent;
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.content.Context;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity implements
SensorEventListener{
    private SensorManager sensorManager;
    TextView tVProximity;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        tVProximity = (TextView)findViewById(R.id.tVProximity);
```

```
        //create instance of sensor manager and get system service to
interact with Sensor
        sensorManager=
(SensorManager)getSystemService(Context.SENSOR_SERVICE);
        Sensor proximitySensor=
sensorManager.getDefaultSensor(Sensor.TYPE_PROXIMITY);
        if (proximitySensor == null){
            Toast.makeText(MainActivity.this,"No Proximity Sensor Found!
",Toast.LENGTH_LONG).show();
        }
    }
    @Override
    protected void onResume() {
        super.onResume();
        // register this class as a listener for the Proximity Sensor
        sensorManager.registerListener(this,
                sensorManager.getDefaultSensor(Sensor.TYPE_PROXIMITY),
                SensorManager.SENSOR_DELAY_NORMAL);
    }
    @Override
    protected void onPause() {
        // unregister listener
        super.onPause();
        sensorManager.unregisterListener(this);
    }
    @Override
    public void onSensorChanged(SensorEvent event) {
        if(event.sensor.getType()==Sensor.TYPE_PROXIMITY){
            if(event.values[0]==0){
                tVProximity.setText("You are Near:
"+String.valueOf(event.values[0]));
            }
            else{
                tVProximity.setText("You are Far:
"+String.valueOf(event.values[0]));
            }

        }
    }

    @Override
    public void onAccuracyChanged(Sensor sensor, int accuracy) {

    }
}
```

Hasil:



Sensor Barometer



Activity_main.xml

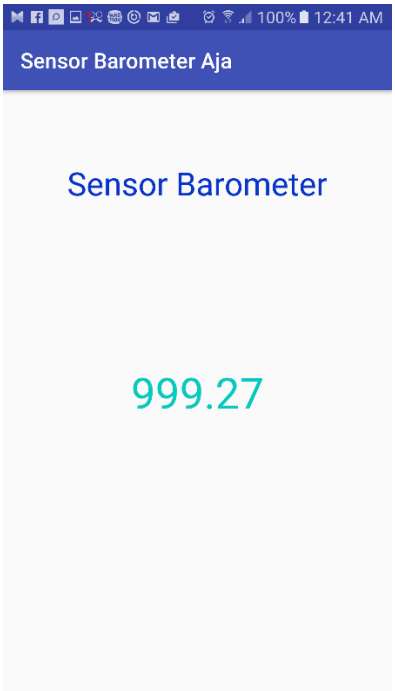
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context="com.example.meigazh.sensorbarometeraja.MainActivity">

    <TextView
        android:id="@+id/TextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="50dp"
        android:text="Sensor Barometer"
        android:textColor="#0835C9"
        android:textSize="30sp" />

    <TextView
        android:id="@+id/TVAirPressure"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:textColor="#08C9BD"
        android:textSize="40sp" />
</RelativeLayout>
```

mainActivity.java

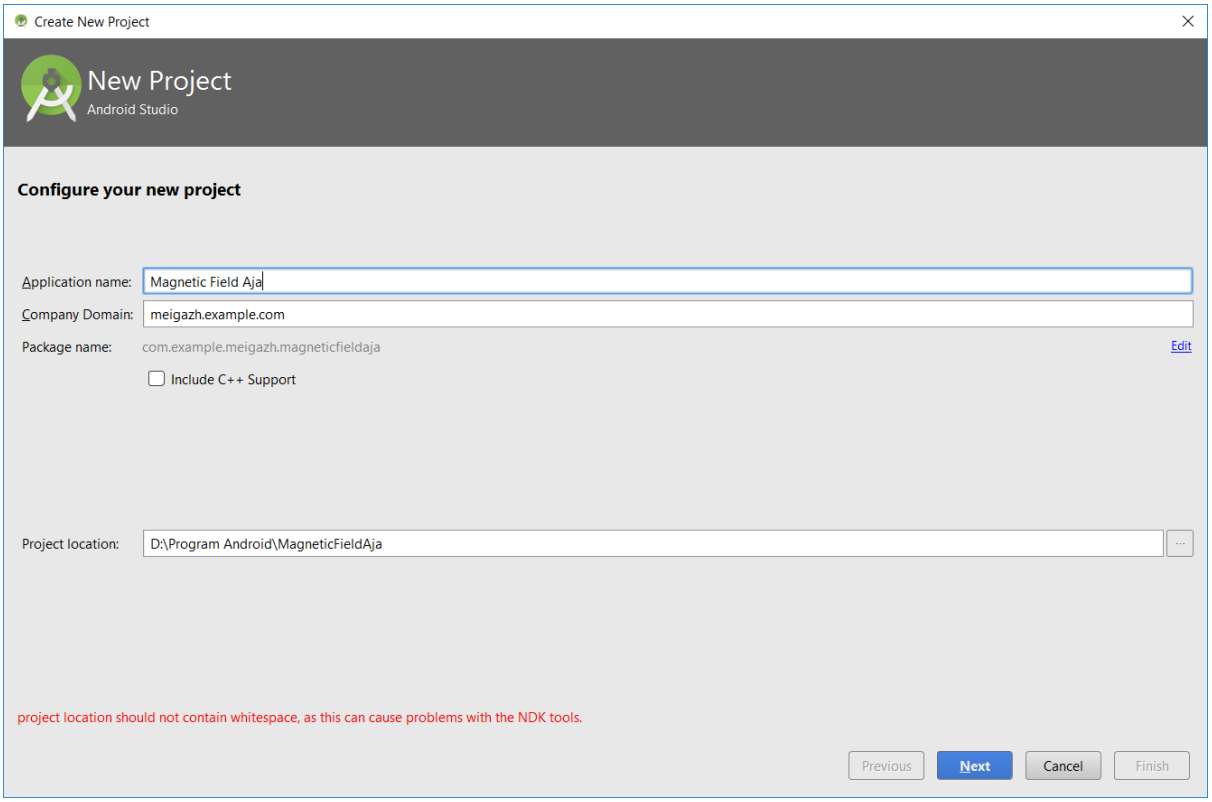
```
package com.example.meigazh.sensorbarometeraja;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.hardware.Sensor;
import android.hardware.SensorEvent;
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.app.Service;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity implements
SensorEventListener{
    TextView textView,TVAirPressure;
    private SensorManager sensorManager;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        textView=(TextView)findViewById(R.id.TextView);
        TVAirPressure=(TextView)findViewById(R.id.TVAirPressure);
        //create instance of sensor manager and get system service to
interact with Sensor
```

```
        sensorManager = (SensorManager)
getSystemService(Service.SENSOR_SERVICE);
    }
    @Override
    protected void onPause() {
        // unregister listener
        super.onPause();
        sensorManager.unregisterListener(this);
    }
    @Override
    protected void onResume() {
        super.onResume();
        // register this class as a listener for the Pressure Sensor
        sensorManager.registerListener(this,
                sensorManager.getDefaultSensor(Sensor.TYPE_PRESSURE),
                SensorManager.SENSOR_DELAY_NORMAL);
    }
    @Override
    public void onSensorChanged(SensorEvent event) {
        if (event.sensor.getType() == Sensor.TYPE_PRESSURE) {
            float[] values = event.values;
            TVAirPressure.setText("" + values[0]);
        }
    }

    @Override
    public void onAccuracyChanged(Sensor sensor, int accuracy) {

    }
}
```

Hasil:



Magnetic Field

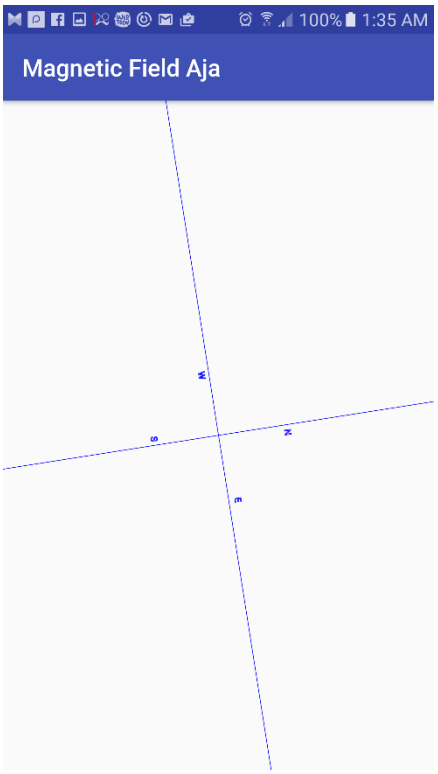


MainActivity.java

```
package com.example.meigazh.magneticfieldaja;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Paint;
import android.graphics.Paint.Style;
import android.hardware.Sensor;
import android.hardware.SensorEvent;
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.view.View;

public class MainActivity extends AppCompatActivity implements
SensorEventListener {
    Float azimut;
    CustomDrawableView mCustomDrawableView;// View to draw a compass
    //SensorManager lets you access the device's sensors
    private SensorManager mSensorManager;
    Sensor accelerometer;
    Sensor magnetometer;
    public class CustomDrawableView extends View {
        Paint paint = new Paint();
        public CustomDrawableView(Context context) {
```

```
            super(context);
            //color
            paint.setColor(0xff00ff00);
            //style
            paint.setStyle(Style.STROKE);
            //stroke width
            paint.setStrokeWidth(2);
            //antiAlias
            paint.setAntiAlias(true);
            //text size
            paint.setTextSize(30);
        };

        protected void onDraw(Canvas canvas) {
            //declare Local Variables
            int width = getWidth();
            int height = getHeight();
            int centerx = width/2;
            int centery = height/2;
            // Rotate the canvas with the azimut
            if (azimut != null)
                //Preconcat the current matrix with the specified rotation.
                canvas.rotate(-azimut*360/(2*3.14159f), centerx, centery);
            //set color
            paint.setColor(0xff0000ff);
            //draw two lines
            canvas.drawLine(centerx, -2000, centerx, +2000, paint);
            canvas.drawLine(-2000, centery, 2000, centery, paint);
            //E,W,N,S directions
            canvas.drawText("N", centerx+15, centery-220, paint);
            canvas.drawText("S", centerx-30, centery+225, paint);
            canvas.drawText("E", centerx+215, centery-20, paint);
            canvas.drawText("W", centerx-220, centery+35, paint);
        }
    }
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        mCustomDrawableView = new CustomDrawableView(this);
        setContentView(mCustomDrawableView);
        mSensorManager = (SensorManager)getSystemService(SENSOR_SERVICE);
        accelerometer =
mSensorManager.getDefaultSensor(Sensor.TYPE_ACCELEROMETER);
        magnetometer =
mSensorManager.getDefaultSensor(Sensor.TYPE_MAGNETIC_FIELD);
    }
    protected void onResume() {
        super.onResume();
        // Register the sensor listeners
        mSensorManager.registerListener(this, accelerometer,
SensorManager.SENSOR_DELAY_UI);
        mSensorManager.registerListener(this, magnetometer,
SensorManager.SENSOR_DELAY_UI);
    }

    protected void onPause() {
        super.onPause();
```

```
        // unRegister the sensor listeners
        mSensorManager.unregisterListener(this);
    }
    float[] mGravity;
    float[] mGeomagnetic;
    @Override
    public void onSensorChanged(SensorEvent event) {
        if (event.sensor.getType() == Sensor.TYPE_ACCELEROMETER)
            mGravity = event.values;
        if (event.sensor.getType() == Sensor.TYPE_MAGNETIC_FIELD)
            mGeomagnetic = event.values;
        if (mGravity != null && mGeomagnetic != null) {
            float R[] = new float[9];
            float I[] = new float[9];
   /*Computes the inclination matrix I as well as the rotation matrix R
transforming a vector from the device coordinate
    *  system to the world's coordinate system which is defined as a direct
orthonormal basis*/
            boolean success = SensorManager.getRotationMatrix(R, I,
mGravity, mGeomagnetic);
            if (success) {
                float orientation[] = new float[3];
    /*Computes the device's orientation based on the rotation matrix*/
                SensorManager.getOrientation(R, orientation);
                azimut = orientation[0]; // orientation contains: azimut,
pitch and roll
            }
        }
        mCustomDrawableView.invalidate();
    }

    @Override
    public void onAccuracyChanged(Sensor sensor, int accuracy) {

    }
}
```


100% 1:35 AM
Magnetic Field Aja
W
S
N
E