Android Core Application

- Activities
- Intents
- Content Provider
- Broadcast Recievers
- Services

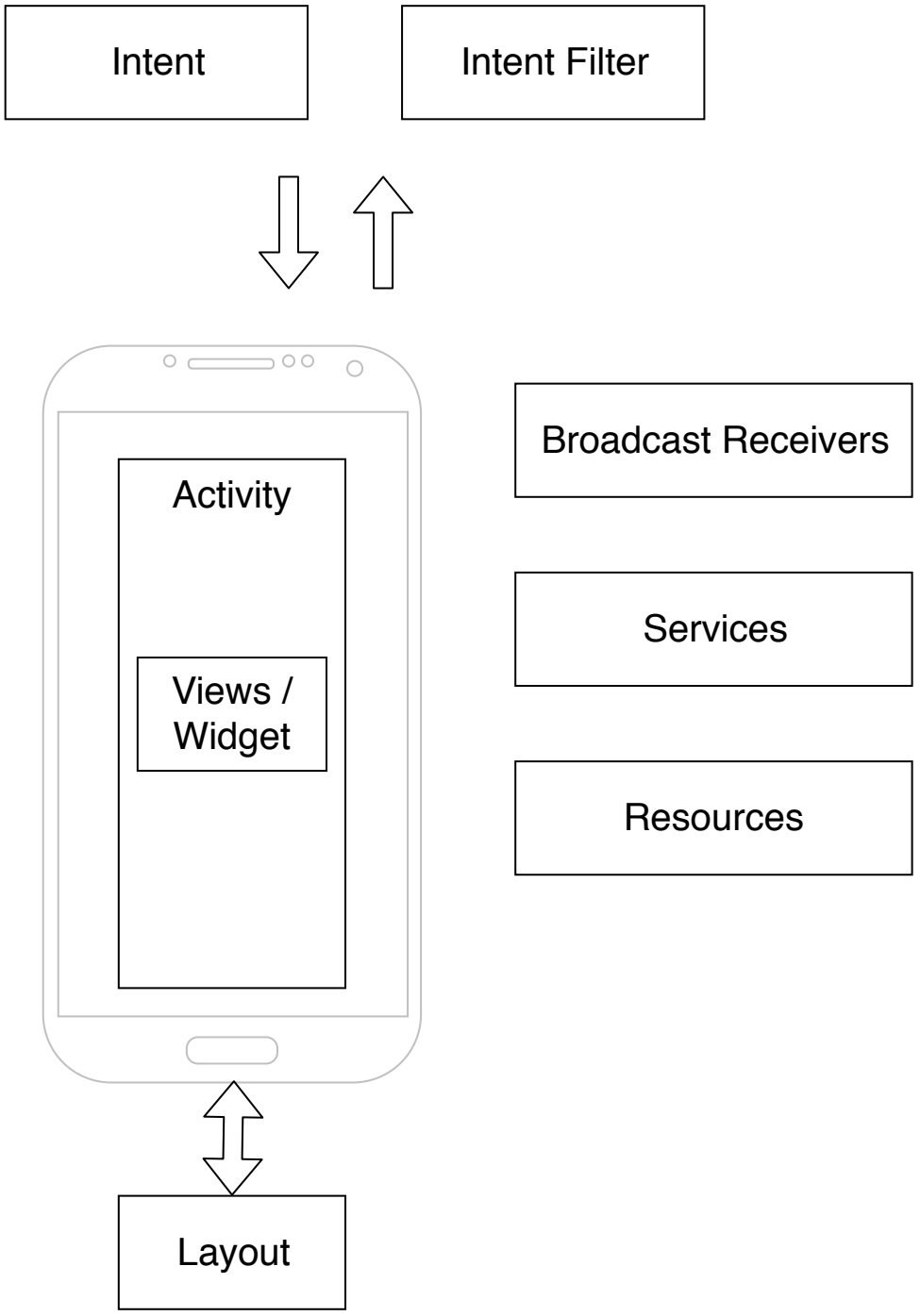
Activities
Mewakili sebuah layar user interface, dan sebagai entry point user untuk berinteraksi dengan aplikasi

Intents
Messaging object untuk request sebuah aksi dari komponen lain, contoh : menjalankan activity, service, broadcast
Explisit Intents & Implisit Intents

Services
Komponen yang berjalan di background proses untuk melakukan tugas yang membutuhkan waktu cukup lama
Local Service & Remote Service

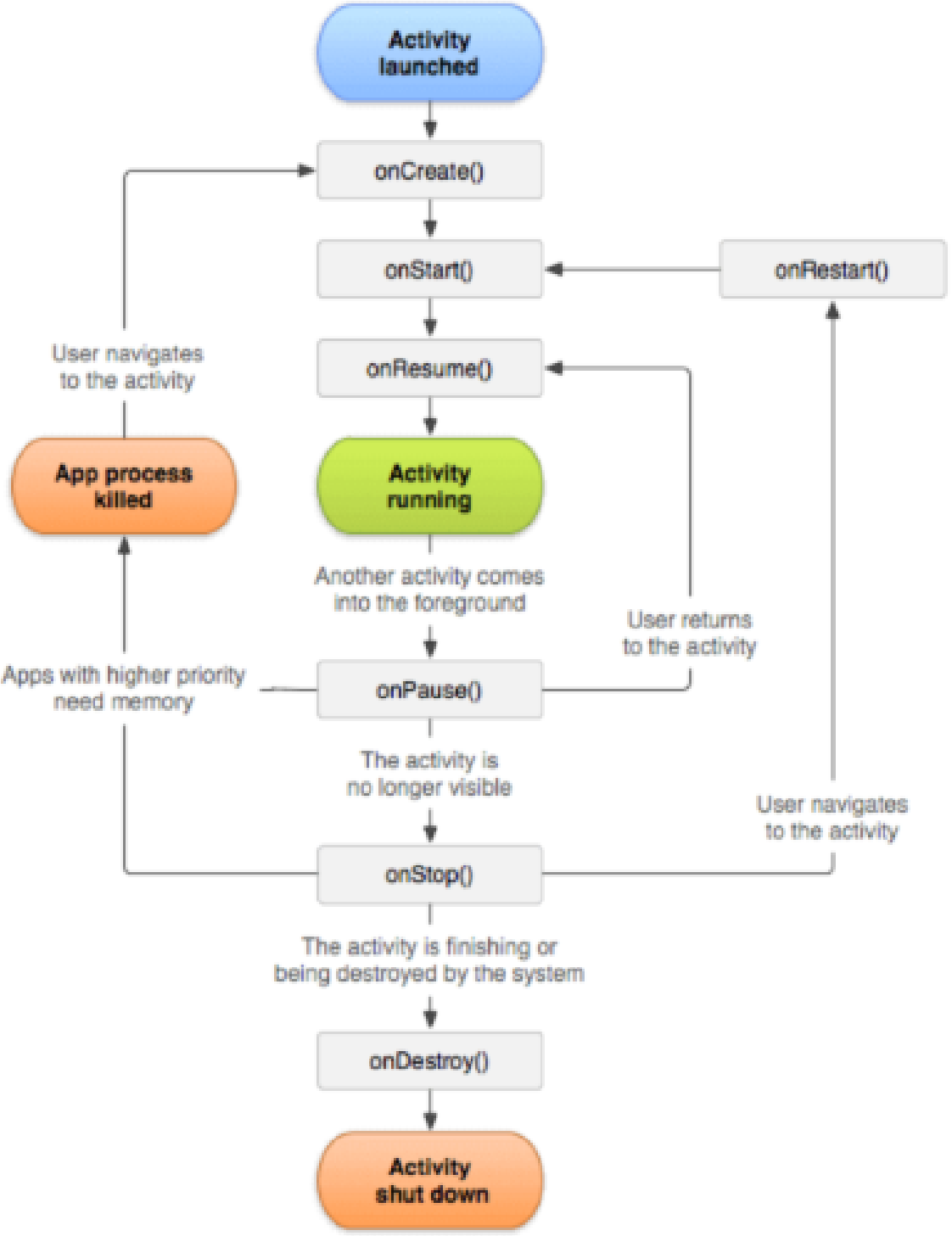
Broadcast Receivers
Komponen yang bertugas untuk memberitahukan event2 yang terjadi dalam system ke aplikasi, menggunakan intent untuk komunikasi broadcast

Content Provider
Berhubungan dengan pertukaran data, seperti penyimpanan data di file system, SQLite database


Intent
Intent Filter
Activity
Views / Widget
Broadcast Receivers
Services
Resources
Layout

Android Activity Life Cycle

- onCreate
- onStart
- onPause
- onRestart
- onResume
- onStop
- onDestroy

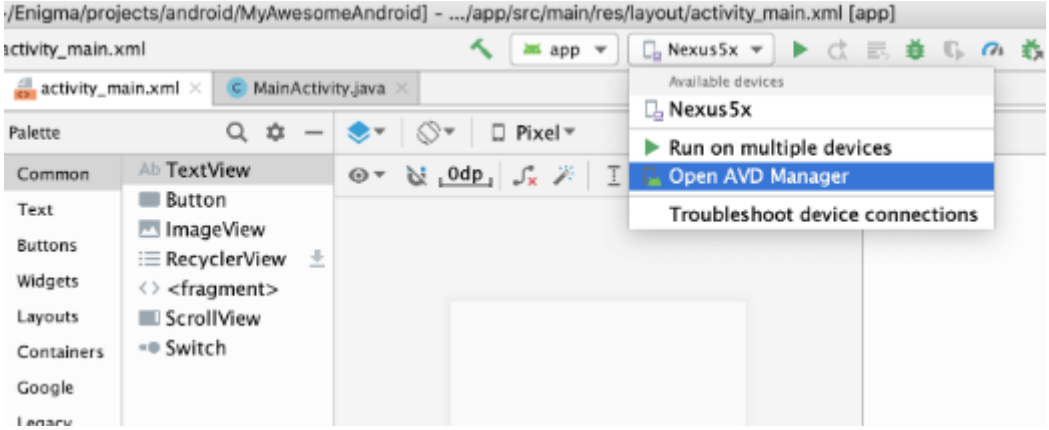


Create New Project

Empty Activity

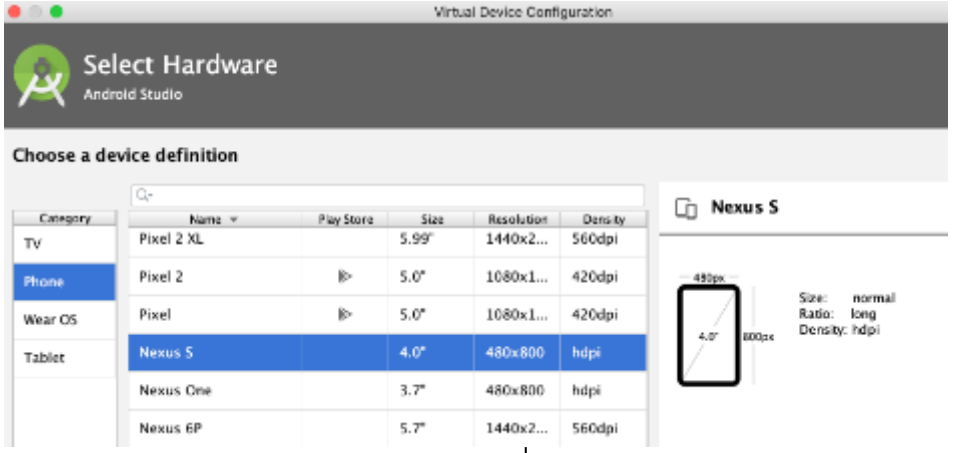
Configure project, isikan informasi, language JAVA, lalu pilih minimum API Level default (API 21)

Open AVD Manager

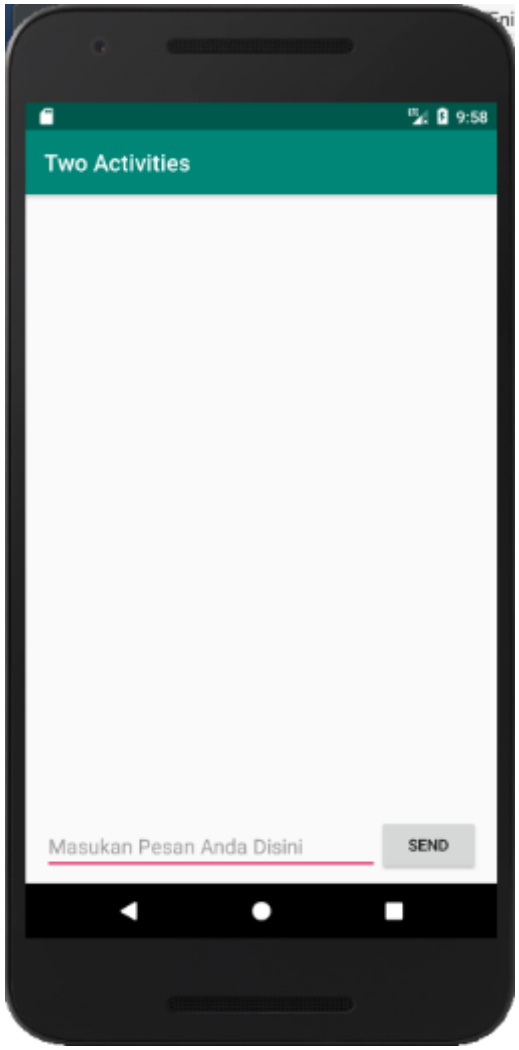


Create Virtual Device

Pilih Category phone, pilih Nexus S



Pilih System Image lollipop, lalu download


9:58
Two Activities
Masukan Pesan Anda Disini
SEND

Buka Res > layout > activity_main.xml

Tambahkan **Relative Layout**

Set attribute padding top 10dp, padding bottom 10dp, padding left 16dp, padding right 16dp

Tambahkan 2 textView
textView1 set attribute,

- layout_width : match_parent,
- text : "Reply Received",
- textStyle : "bold"
- visibility : "invisible"

textView2 set attribute,

- layout_width : "match_parent"
- layout_marginLeft : "20dp"
- layout_marginTop : "20dp"
- padding : "5dp"
- visibility : "invisible"

Tambahkan 1 editText dan 1 button
button set attribute,

- layout_alignParentRight : true,
- layout_alignParenBottom : true,
- text : "Send"
- onClick : "launchSecondActivity"

editText1 set attribute,

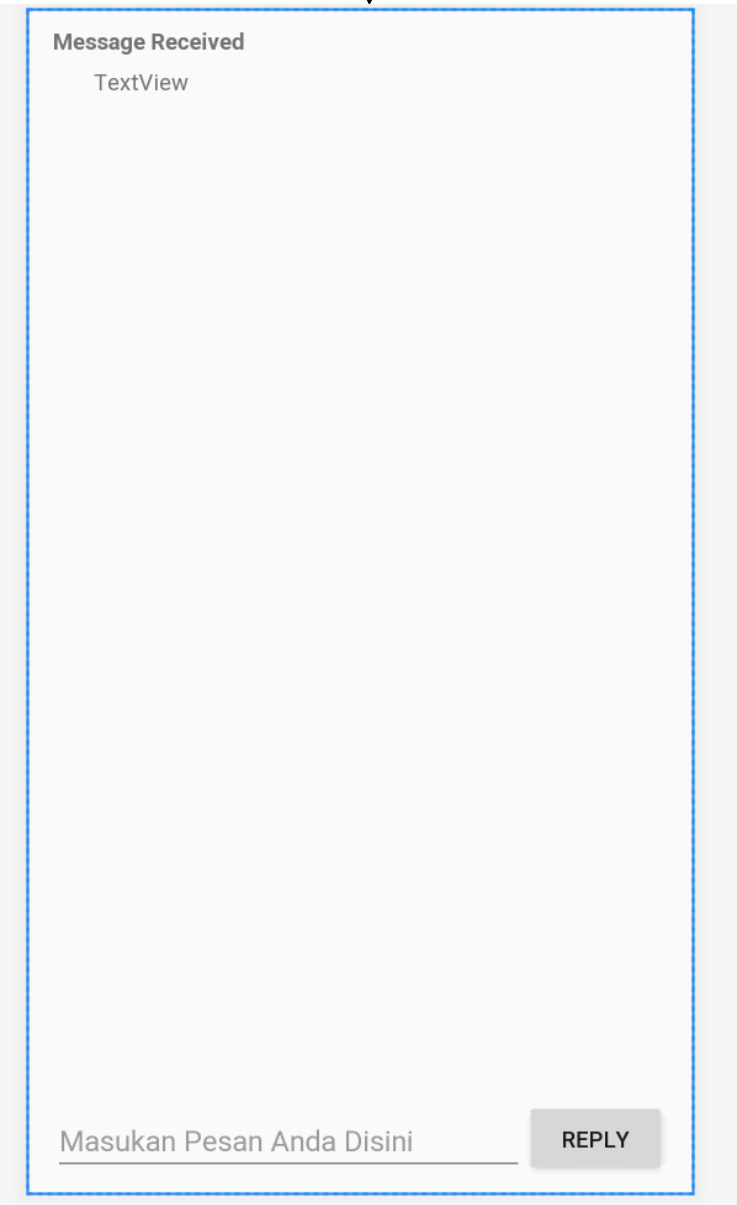
- layout_width : "match_parent"
- layout_alignParentBottom : true
- layout_toStartOf : "@id/button"
- layout_toLeftOf : "@id/button"
- hint : "Masukan Pesan Anda"

Pada MainActivity.java

```
public class MainActivity extends AppCompatActivity {
    private EditText messageEditText;
    private TextView replyHeadTextView;
    private TextView replyTextView;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        messageEditText = (EditText) findViewById(R.id.editText);
        replyHeadTextView = (TextView) findViewById(R.id.textView
        replyTextView = (TextView) findViewById(R.id.textView3);
    }

    public void launchSecondActivity(View view) {
    }
}
```

```
2);
```

Buat activity baru



Pada MainActivity.java

```
...

public void launchSecondActivity(View view) {
    Log.d("Message", "Button clicked!");

    Intent intent = new Intent(this, SecondActivity.class
    String message = messageEditText.getText().toString()

    intent.putExtra("extra_pesan", message);
    startActivityForResult(intent, 1);
}

...
```

Pada SecondActivity.java

```
public class SecondActivity extends AppCompatActivity {
    private EditText mReply;

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

        Intent intent = getIntent();
        String message = intent.getStringExtra("extra_pesan");

        TextView textView = (TextView) findViewById(R.id.textView3);
        if (textView != null) {
            textView.setText(message);
        }

        mReply = (EditText) findViewById(R.id.editText);
    }

    public void returnReply(View view) {

    }
}
```

```
s);
);
```

Pada MainActivity.java

```
@Override
public void onActivityResult(int requestCode, int resultCode, Intent data) {
    super.onActivityResult(requestCode, resultCode, data);
    if (requestCode == 1) {
        if (resultCode == RESULT_OK) {
            String reply = data.getStringExtra("extra_reply");
            replyHeadTextView.setVisibility(View.VISIBLE);
            replyTextView.setText(reply);
            replyTextView.setVisibility(View.VISIBLE);
        }
    }
}
```

Pada SecondActivity.java

```
public void returnReply(View view) {
    String reply = mReply.getText().toString();
    Intent replyIntent = new Intent();
    replyIntent.putExtra("extra_reply", reply);
    setResult(RESULT_OK, replyIntent);
    finish();
}
```

Buat Project Baru > Empty Activity

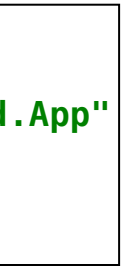
Buat java class **App** di dalam java > package project kita

Buat package baru dengan nama **ui** > lalu pindahkan MainActivity.java ke package **ui**

pada folder manifests, ubah AndroidManifest.xml

```
import android.app.Application;
import android.content.Context;

public class App extends Application {
    private static Context context;

    public void onCreate() {
        super.onCreate();
        App.context = getApplicationContext();
    }

    public static Context getAppContext() {
        return App.context;
    }
}
```

```
<application
    android:name="com.enigma.pascal.myawesomeandroid

...
```


l.App"

Buka **activity_main.xml**

↓

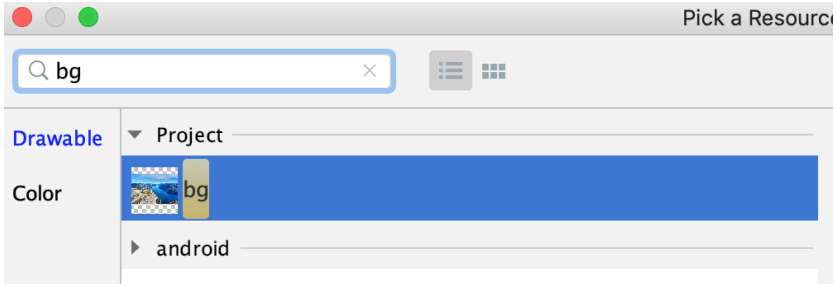
Copy image background ke **res > drawable**

↓

Pada bagian **pallete > common / widget** drag **imageView** ke **layout**

↓

Cari nama file di Pick A Resources



Di Attributes > scaleType > centerCrop

Tambahkan component **view** yang ada di Containers pallete

↓

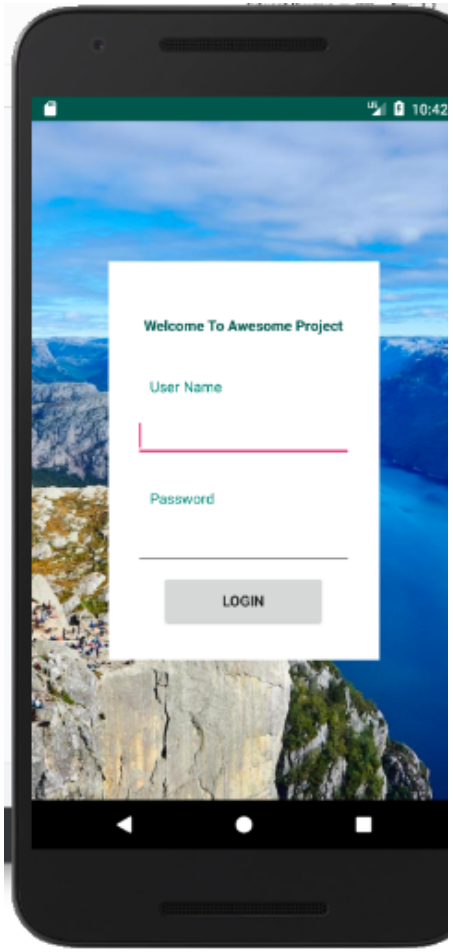
Tambahkan component text view untuk header & label

↓

Tambahkan component plain text untuk inputan, khusus untuk password ubah attributes **inputType textPassword = true**

↓

Tambahkan 1 buah button login



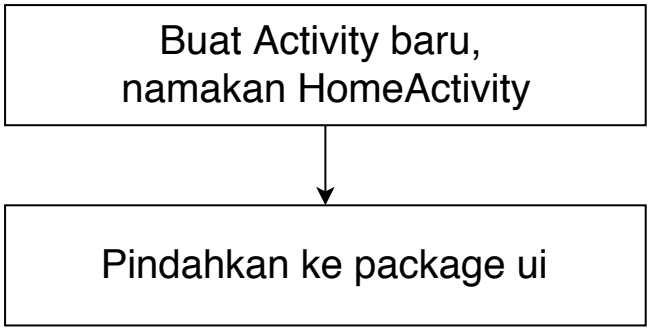
isikan label text input,button di **strings.xml** di
{root} > res > values

```
<string name="welcoming_message">Welcome To Awesome Project</string>
<string name="text_userName">User Name</string>
<string name="text_userPassword">User Password</string>
<string name="button_login">Login</string>
<string name="image_bg_desc">Image Background</string>
```

Di attribute **text** masing2 widget label & button, **pick a resource**

```java
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import com.enigma.pascal.helloworlddb.R;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        getSupportActionBar().hide();
        Button btnLogin = findViewById(R.id.btnLogin);
        final EditText txtUserName = findViewById(R.id.txtUserName);
        final EditText txtPassword = findViewById(R.id.txtPassword);

        final SharedPreferences pref = getSharedPreferences("user_details", MODE_PRIVATE);
        final Intent intent = new Intent(this, HomeActivity.class);

        btnLogin.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (txtUserName.getText().toString().equals("edo") &&
                        txtPassword.getText().toString().equals("edo")) {
                    SharedPreferences.Editor editor = pref.edit();
                    editor.putString("fullname", "Edward Suwirya");
                    editor.commit();
                    Toast.makeText(getApplicationContext(), "Login Successful", Toast.LENGTH_SHORT).show();
                    startActivity(intent);
                } else {
                    Toast.makeText(getApplicationContext(), "Login Failed", Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
```

```
}
```




```java
import android.content.SharedPreferences;
import android.os.Bundle;

import androidx.appcompat.app.ActionBar;
import androidx.appcompat.app.AppCompatActivity;

import com.enigma.pascal.helloworlddb.R;

public class HomeActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_home);
        SharedPreferences prf = getSharedPreferences("user_details", MODE_PRIVATE);
        ActionBar mActionBar = getSupportActionBar();
        mActionBar.setTitle("Welcome " + prf.getString("fullname", ""));
    }
}
```

Buat Activity baru,
namakan HomeActivity

↓

Drag T**abLayout** yang ada di
Pallete > Containers

↓

isikan label text tabitem di
strings.xml di
{root} > res > values

```
<string name="tab_bayar_beli">Bayar &amp; Beli</string>
<string name="tab_promo">Promo</string>
```

↓

Drag Vi**ewPager** yang ada di
Pallete > Containers

Pada res > klik kanan >
new **> Android Resource Directory, berikan directory name : menu lalu pilih Resource Type : menu**

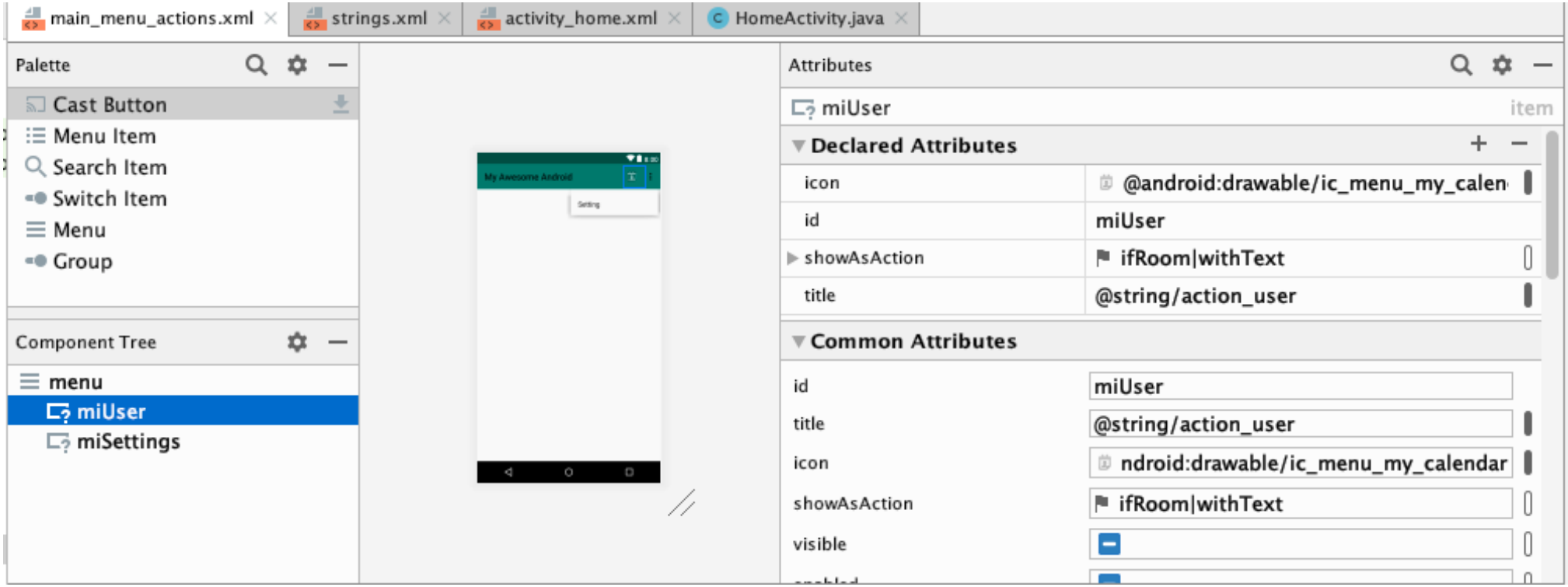
↓

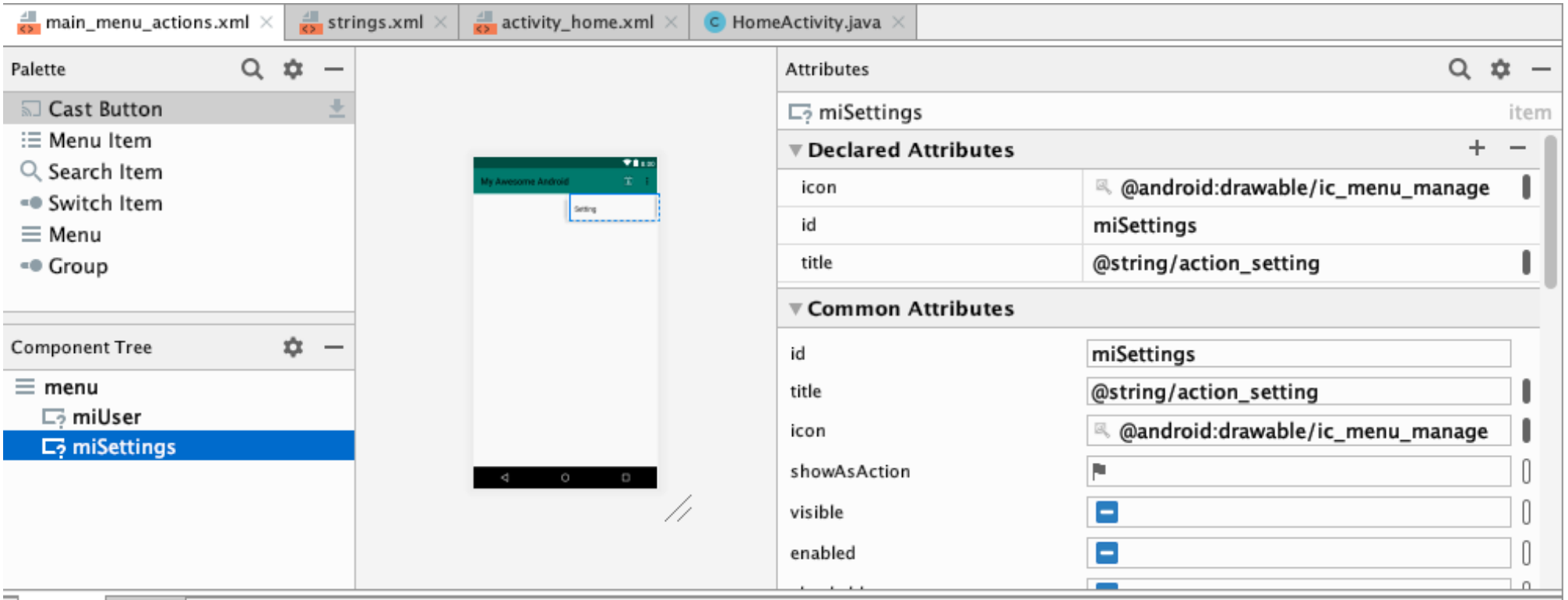
Pada res > menu > klik kanan >
new > Menu resource file > main_menu_actions

↓

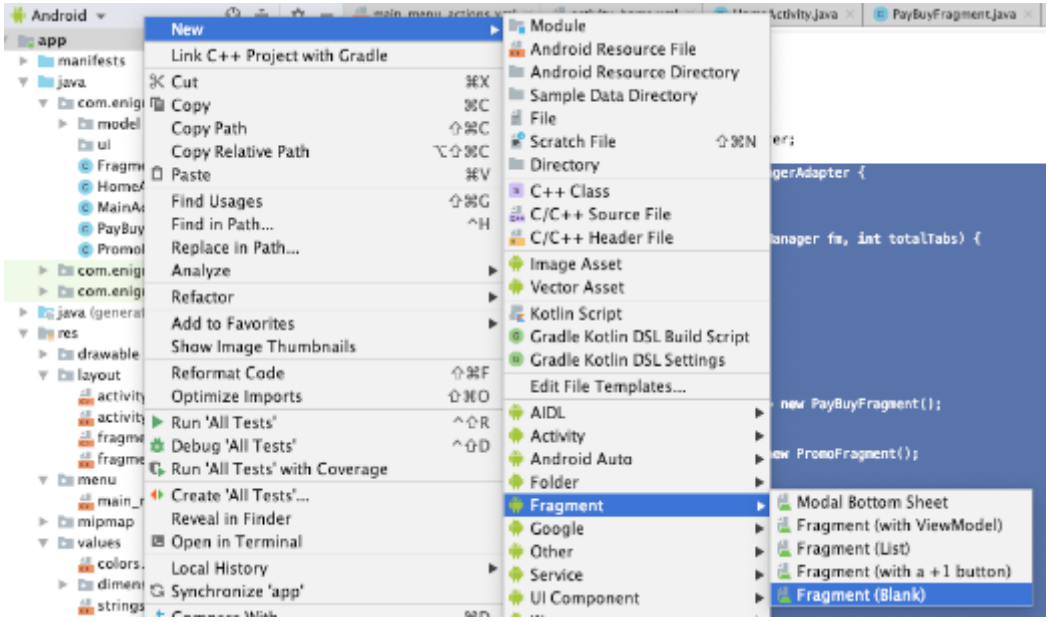
klik ganda main_menu_actions.xml, drag M**enu item**

```
<string name="action_setting">Setting</string>
<string name="action_user">User</string>
```


main_menu_actions.xml
strings.xml
activity_home.xml
HomeActivity.java
Palette
Cast Button
Menu Item
Search Item
Switch Item
Menu
Group
Component Tree
menu
miUser
miSettings
Attributes
miUser
item
Declared Attributes
icon
@android:drawable/ic_menu_my_calen
id
miUser
showAsAction
ifRoom|withText
title
@string/action_user
Common Attributes
id
miUser
title
@string/action_user
icon
ndroid:drawable/ic_menu_my_calendar
showAsAction
ifRoom|withText
visible


main_menu_actions.xml
strings.xml
activity_home.xml
HomeActivity.java
Palette
Cast Button
Menu Item
Search Item
Switch Item
Menu
Group
Component Tree
menu
miUser
miSettings
Attributes
miSettings
item
Declared Attributes
icon
@android:drawable/ic_menu_manage
id
miSettings
title
@string/action_setting
Common Attributes
id
miSettings
title
@string/action_setting
icon
@android:drawable/ic_menu_manage
showAsAction
visible
enabled

Buat 2 buah Blank Fragment



Buat PayBuyFragment dan PromoFragment, pindahkan ke package ui

Buat ui > FragmentAdapter.java

```
public class FragmentAdapter extends FragmentPagerAdapter {
    Context context;
    int totalTabs;

    public FragmentAdapter(Context c, FragmentManager fm, int totalTabs) {
        super(fm, BEHAVIOR_RESUME_ONLY_CURRENT_FRAGMENT);

        context = c;
        this.totalTabs = totalTabs;
    }

    @Override
    public Fragment getItem(int position) {
        switch (position) {
            case 0:
                PayBuyFragment payBuyFragment = new PayBuyFragment();
                return payBuyFragment;
            case 1:
                PromoFragment promoFragment = new PromoFragment();
                return promoFragment;
            default:
                PayBuyFragment payBuyFragmentDef = new PayBuyFragment();
                return payBuyFragmentDef;
        }
    }

    @Override
    public int getCount() {
        return totalTabs;
    }
}
```

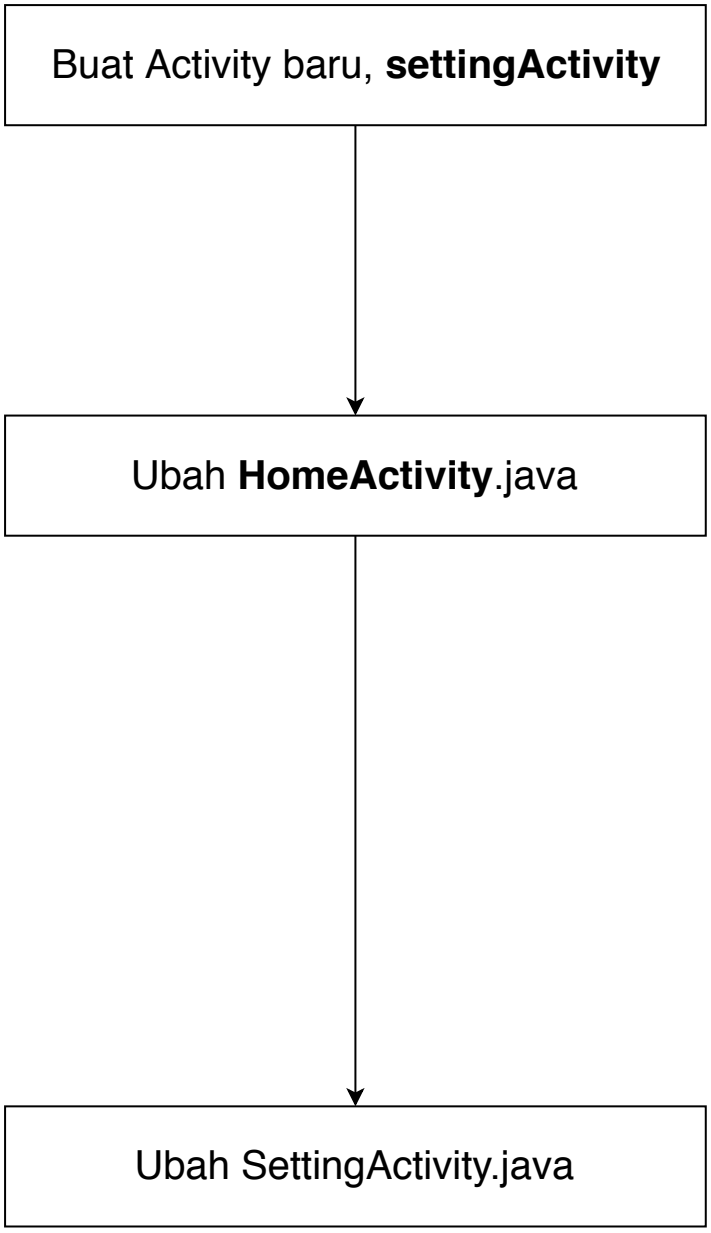
Ubah HomeActivity.java

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_home);
    ActionBar actionBar = getSupportActionBar();
    actionBar.setTitle(getString(R.string.app_name));

    TabLayout tabLayout = findViewById(R.id.tabLayout);
    final ViewPager viewPager = findViewById(R.id.viewPager);
    final FragmentAdapter adapter = new FragmentAdapter(this, getSupportFragmentManager(),
            tabLayout.getTabCount());

    viewPager.setAdapter(adapter);
    viewPager.addOnPageChangeListener(new TabLayout.TabLayoutOnPageChangeListener(tabLayout));
    tabLayout.addOnTabSelectedListener(new TabLayout.OnTabSelectedListener() {
        @Override
        public void onTabSelected(TabLayout.Tab tab) {
            viewPager.setCurrentItem(tab.getPosition());
        }

        @Override
        public void onTabUnselected(TabLayout.Tab tab) {

        }

        @Override
        public void onTabReselected(TabLayout.Tab tab) {

        }
    });
}
```

```java
@Override
public boolean onCreateOptionsMenu(Menu menu) {
    MenuInflater inflater = getMenuInflater();
    inflater.inflate(R.menu.main_menu_actions, menu);
    return super.onCreateOptionsMenu(menu);
}



@Override
public void onBackPressed() {

}
```

Overriding method onBackPressed mencegah user klik back pada device

Pada **PayBuyFragment.java** & **PromoFragment.java**,
comment method **onAttach**




```java
@Override
public boolean onOptionsItemSelected(MenuItem item) {
    int id = item.getItemId();

    if (id == R.id.miSettings) {
        Intent intent = new Intent(this, SettingActivity.class)
        startActivity(intent);
    }

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

```java
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    getSupportActionBar().setDisplayHomeAsUpEnabled(true);
    setContentView(R.layout.activity_setting);
}

@Override
public boolean onOptionsItemSelected(MenuItem item) {
    switch (item.getItemId()) {
        case android.R.id.home:
            finish();
            return true;
    }
    return super.onOptionsItemSelected(item);
}
```

```
);
```

Buat package baru, namakan model

↓

Buat class java UserInfo

```java
package com.enigma.pascal.myawesomeandroid.model;

import java.util.Objects;

public class UserInfo {
    String userName;
    String userFullName;
    String address;

    public String getUserName() { return userName; }

    public void setUserName(String userName) { this.userName = userName; }

    public String getUserFullName() { return userFullName; }

    public void setUserFullName(String userFullName) { this.userFullName = userFullNam

    public String getAddress() { return address; }

    public void setAddress(String address) { this.address = address; }

    @Override
    public boolean equals(Object o) {...}

    @Override
    public int hashCode() { return Objects.hash(userName, userFullName, address); }
}
```

e; }

Ubah MainActivity.java

```
private void goToSecondActivity(UserInfo userInfo) {
        Intent intent = new Intent(this, HomeActivity.class);
        intent.putExtra("fullName", userInfo.getUserFullName());
        intent.putExtra("address", userInfo.getAddress());
        startActivity(intent);
    }

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

        final EditText txtUserName = findViewById(R.id.txtUserName);
        final EditText txtPassword = findViewById(R.id.txtPassword);

        Button button = findViewById(R.id.btnLogin);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String userName = txtUserName.getText().toString();
                String password = txtPassword.getText().toString();
                if (userName.equals("edo") && password.equals("123")) {
                    UserInfo userInfo = new UserInfo();
                    userInfo.setUserName(userName);
                    userInfo.setUserFullName("Edward Suwirya");
                    userInfo.setAddress("Pondok Bambu");
                    goToSecondActivity(userInfo);

                } else {
                    System.out.println("Error login");
                }

            }
        });
    }
}
```