

## TUGAS UTS MAHASISWA

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Disusun oleh:

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**PROGRAM STUSY TEKNIK INFORMATIKA  
UNIVERSITAN TEKOLOGI BANDUNG TAHUN  
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## 1. Apa fungsi setOnClickListener?

Jawaban : setOnClickListener adalah method yang digunakan dalam Android untuk memberikan aksi atau tindakan pada komponen UI seperti Button, ImageView, atau TextView ketika diklik oleh pengguna.

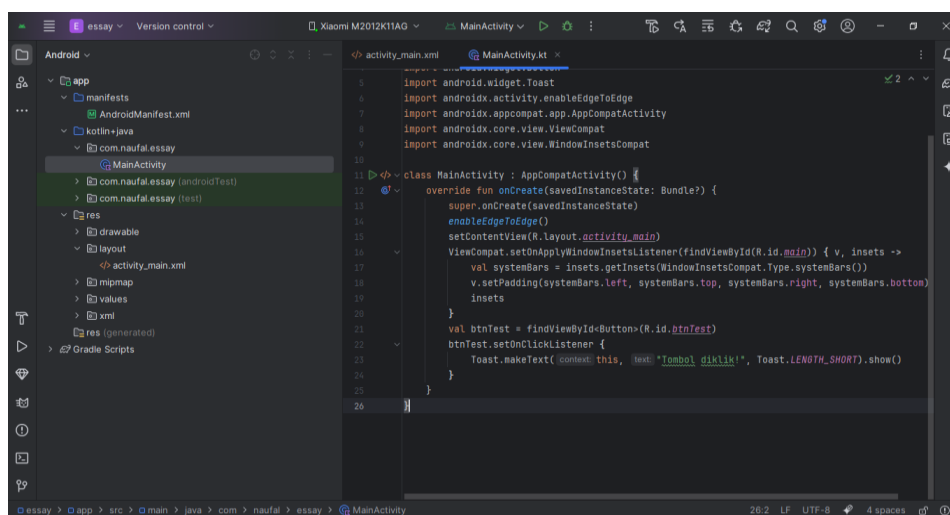
Apa syarat pemanggilan setOnClickListener? Berikan contoh dan screenshot kode

Jawaban : Syaratnya adalah

- Komponen yang dipanggil **sudah terhubung** ke kode Kotlin melalui findViewById.
- Komponen UI seperti Button atau ImageView memiliki id di XML.

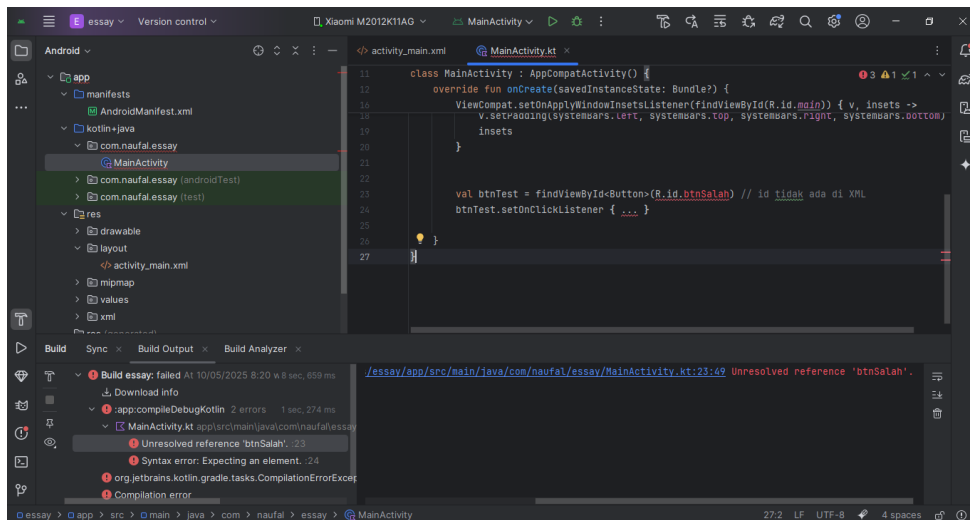
```
<Button
    android:id="@+id/btnTest"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Klik Saya" />
```

```
val btnTest = findViewById<Button>(R.id.btnTest)
btnTest.setOnClickListener {
    Toast.makeText(this, "Tombol diklik!", Toast.LENGTH_SHORT).show()
}
```



## 2. Error apa yang terjadi jika salah menginisialisasi findViewById atau objek XML belum ada?

Jawaban : **Error:** NullPointerException atau Unresolved reference.



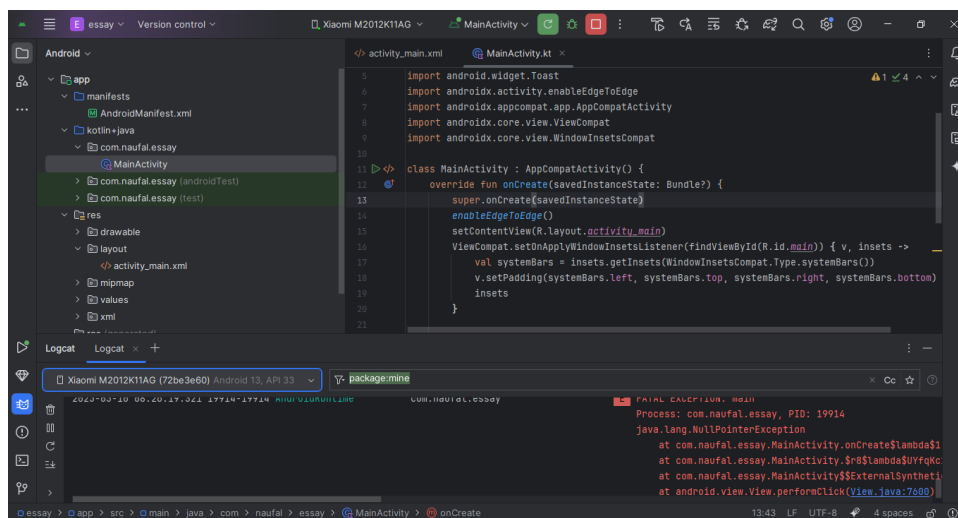
### 3. Buat contoh program yang menampilkan pesan error NullPointerException

Jawaban : codenya

```
val btnTest = findViewById<Button>(R.id.btnTest)
btnTest.setOnClickListener {
    val nama: String? = null
    val panjang = nama!!.length
    Toast.makeText(this, "Panjang nama: $panjang",
    Toast.LENGTH_SHORT).show()
}
```

<Button

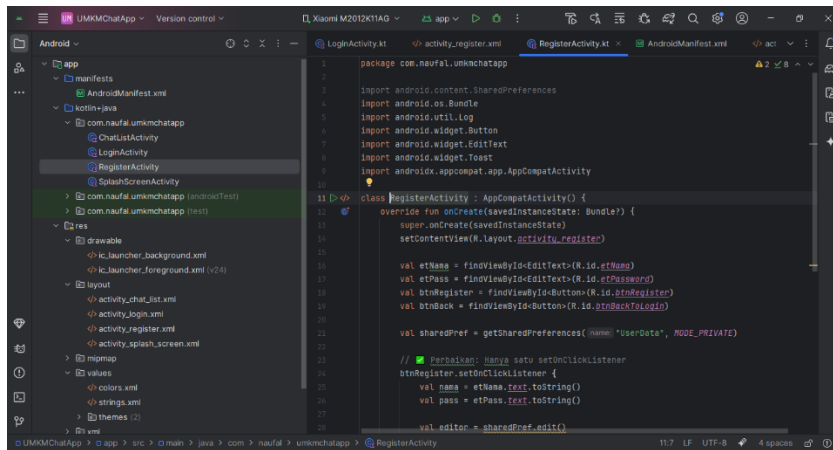
```
android:id="@+id/btnTest"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Tes NullPointerException" />
```



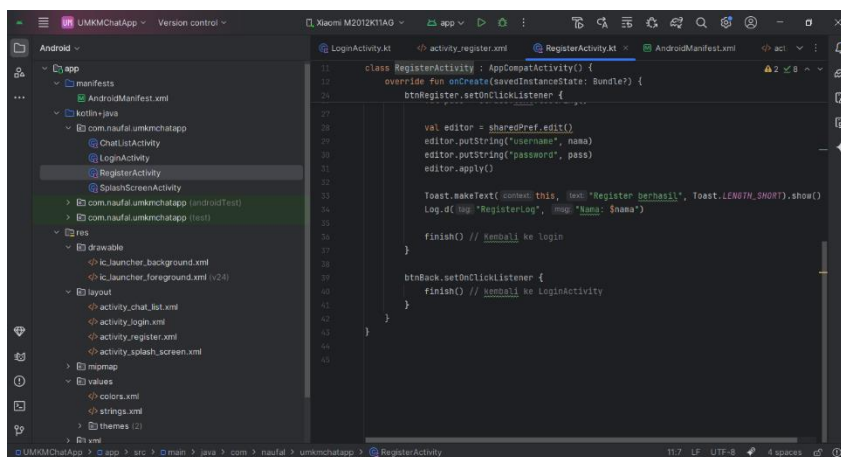
## Studi Kasus

Aplikasi **UMKM Chat App** adalah aplikasi Android sederhana berbasis **Kotlin + XML** yang dirancang untuk mendukung usaha kecil (UMKM) dalam komunikasi dengan pelanggan.

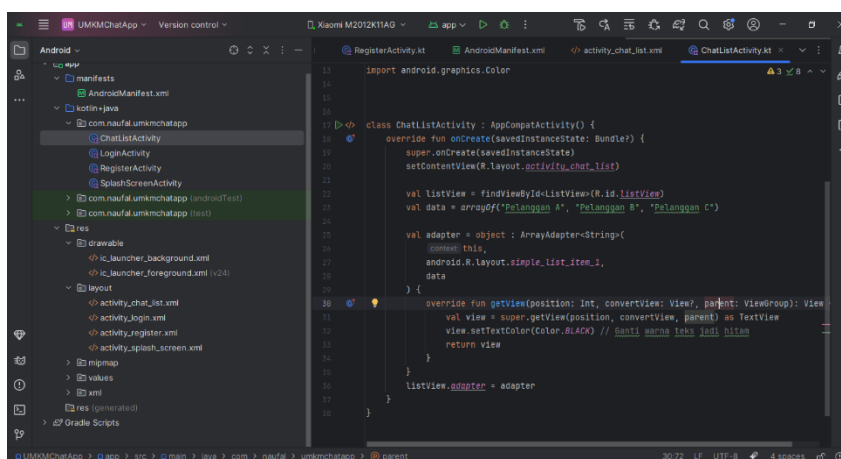
Ini adalah Screenshoot code aplikasi



```
1 package com.naufal.umkmchatapp
2
3 import android.content.SharedPreferences
4 import android.os.Bundle
5 import android.util.Log
6 import android.widget.Button
7 import android.widget.EditText
8 import android.widget.Toast
9 import androidx.appcompat.app.AppCompatActivity
10
11 class RegisterActivity : AppCompatActivity() {
12     override fun onCreate(savedInstanceState: Bundle?) {
13         super.onCreate(savedInstanceState)
14         setContentView(R.layout.activity_register)
15
16         val etName = findViewById<EditText>(R.id.etName)
17         val etPass = findViewById<EditText>(R.id.etPassword)
18         val btnRegister = findViewById<Button>(R.id.btnRegister)
19         val btnBack = findViewById<Button>(R.id.btnBackToLogin)
20
21         val sharedPreferences = getSharedPreferences("userData", MODE_PRIVATE)
22
23         // Persiapan: hanya satu setOnClickListener
24         btnRegister.setOnClickListener {
25             val name = etName.text.toString()
26             val pass = etPass.text.toString()
27
28             val editor = sharedPreferences.edit()
29         }
30     }
31 }
```



```
27         val editor = sharedPreferences.edit()
28         editor.putString("username", name)
29         editor.putString("password", pass)
30         editor.apply()
31
32         Toast.makeText(this, "Register berhasil", Toast.LENGTH_SHORT).show()
33         Log.d("RegisterLog", "msg: $name")
34
35         finish() // kembali ke login
36
37         btnBack.setOnClickListener {
38             finish() // kembali ke LoginActivity
39         }
40     }
41 }
```

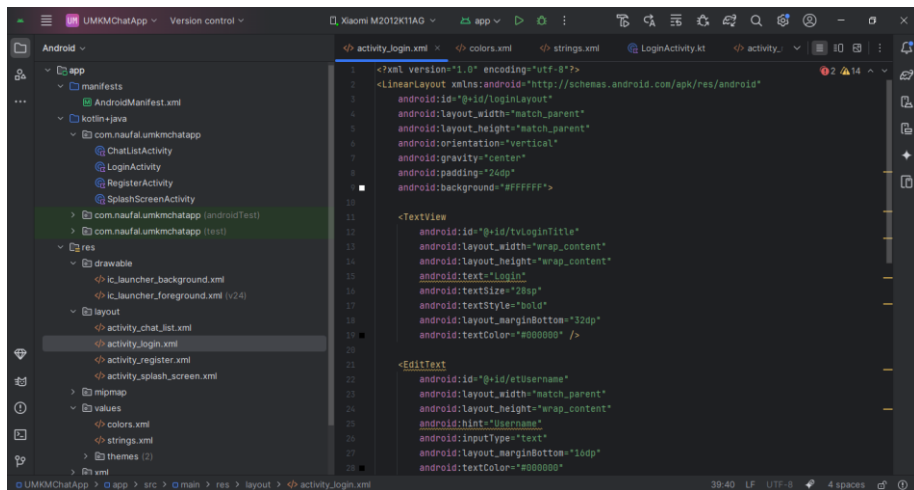
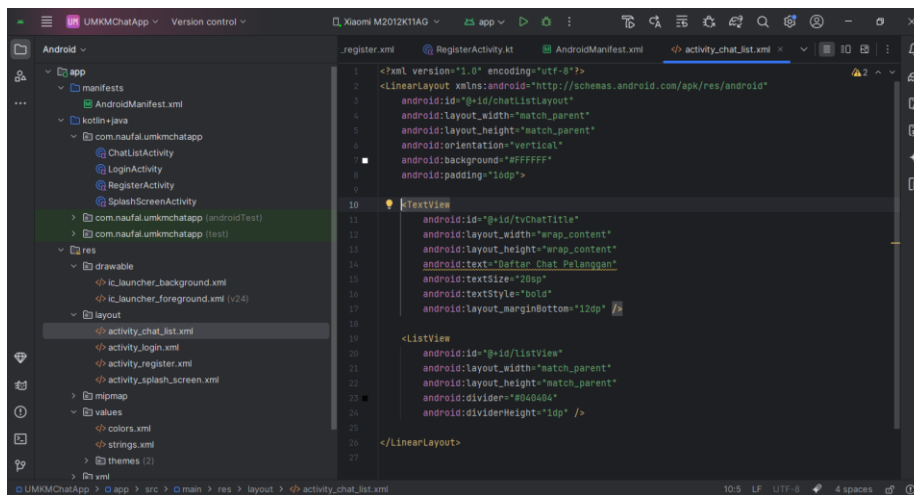


```
1 import android.graphics.Color
2
3 class ChatListActivity : AppCompatActivity() {
4     override fun onCreate(savedInstanceState: Bundle?) {
5         super.onCreate(savedInstanceState)
6         setContentView(R.layout.activity_chat_list)
7
8         val listView = findViewById<ListView>(R.id.listView)
9         val data = arrayOf("Pelanggan A", "Pelanggan B", "Pelanggan C")
10
11         val adapter = object : ArrayAdapter<String>(
12             context,
13             android.R.layout.simple_list_item_1,
14             data
15         ) {}
16
17         override fun getView(position: Int, convertView: View?, parent: ViewGroup): View {
18             val view = super.getView(position, convertView, parent) as TextView
19             view.setTextColor(Color.BLACK) // ganti warna teks jadi hitam
20             return view
21         }
22
23         listView.adapter = adapter
24     }
25 }
```

```
1 package com.naufal.umkmchatapp
2
3 import android.content.Intent
4 import android.content.SharedPreferences
5 import android.os.Bundle
6 import android.widget.Button
7 import android.widget.EditText
8 import android.widget.Toast
9 import androidx.appcompat.app.AppCompatActivity
10
11 class LoginActivity : AppCompatActivity() {
12     override fun onCreate(savedInstanceState: Bundle?) {
13         super.onCreate(savedInstanceState)
14         setContentView(R.layout.activity_login)
15
16         val etUsername = findViewById<EditText>(R.id.etUsername)
17         val etPassword = findViewById<EditText>(R.id.etPassword)
18         val btnLogin = findViewById<Button>(R.id.btnLogin)
19         val btnGoToRegister = findViewById<Button>(R.id.btnGoToRegister)
20
21         val sharedPreferences = getSharedPreferences("userData", MODE_PRIVATE)
22         val savedUser = sharedPreferences.getString("username", null)
23         val savedPass = sharedPreferences.getString("password", null)
24
25         btnLogin.setOnClickListener {
26             val inputUser = etUsername.text.toString()
27             val inputPass = etPassword.text.toString()
28
29             if ((inputUser == savedUser && inputPass == savedPass) ||
30                 (inputUser == "admin" && inputPass == "1234")) {
31                 startActivity(Intent(packageContext, ChatListActivity::class.java))
32                 finish()
33             } else {
34                 Toast.makeText(this, "Login gagal!", Toast.LENGTH_SHORT).show()
35             }
36         }
37
38         btnGoToRegister.setOnClickListener {
39             startActivity(Intent(packageContext, RegisterActivity::class.java))
40         }
41     }
42 }
```

```
1 package com.naufal.umkmchatapp
2
3 import android.content.Intent
4 import android.content.SharedPreferences
5 import android.os.Bundle
6 import android.widget.Button
7 import android.widget.EditText
8 import android.widget.Toast
9 import androidx.appcompat.app.AppCompatActivity
10
11 class LoginActivity : AppCompatActivity() {
12     override fun onCreate(savedInstanceState: Bundle?) {
13         super.onCreate(savedInstanceState)
14         setContentView(R.layout.activity_login)
15
16         val etUsername = findViewById<EditText>(R.id.etUsername)
17         val etPassword = findViewById<EditText>(R.id.etPassword)
18         val btnLogin = findViewById<Button>(R.id.btnLogin)
19         val btnGoToRegister = findViewById<Button>(R.id.btnGoToRegister)
20
21         val sharedPreferences = getSharedPreferences("userData", MODE_PRIVATE)
22         val savedUser = sharedPreferences.getString("username", null)
23         val savedPass = sharedPreferences.getString("password", null)
24
25         btnLogin.setOnClickListener {
26             val inputUser = etUsername.text.toString()
27             val inputPass = etPassword.text.toString()
28
29             if ((inputUser == savedUser && inputPass == savedPass) ||
30                 (inputUser == "admin" && inputPass == "1234")) {
31                 startActivity(Intent(packageContext, ChatListActivity::class.java))
32                 finish()
33             } else {
34                 Toast.makeText(this, "Login gagal!", Toast.LENGTH_SHORT).show()
35             }
36         }
37
38         btnGoToRegister.setOnClickListener {
39             startActivity(Intent(packageContext, RegisterActivity::class.java))
40         }
41     }
42 }
```

```
1 package com.naufal.umkmchatapp
2
3 import android.content.Intent
4 import android.os.Bundle
5 import android.os.Handler
6 import android.os.Looper
7 import androidx.appcompat.app.AppCompatActivity
8
9 class SplashScreenActivity : AppCompatActivity() {
10     override fun onCreate(savedInstanceState: Bundle?) {
11         super.onCreate(savedInstanceState)
12         setContentView(R.layout.activity_splash_screen)
13
14         Handler(Looper.getMainLooper()).postDelayed({
15             startActivity(Intent(packageContext, LoginActivity::class.java))
16             finish()
17         }, delayMillis = 2000)
18     }
19 }
```

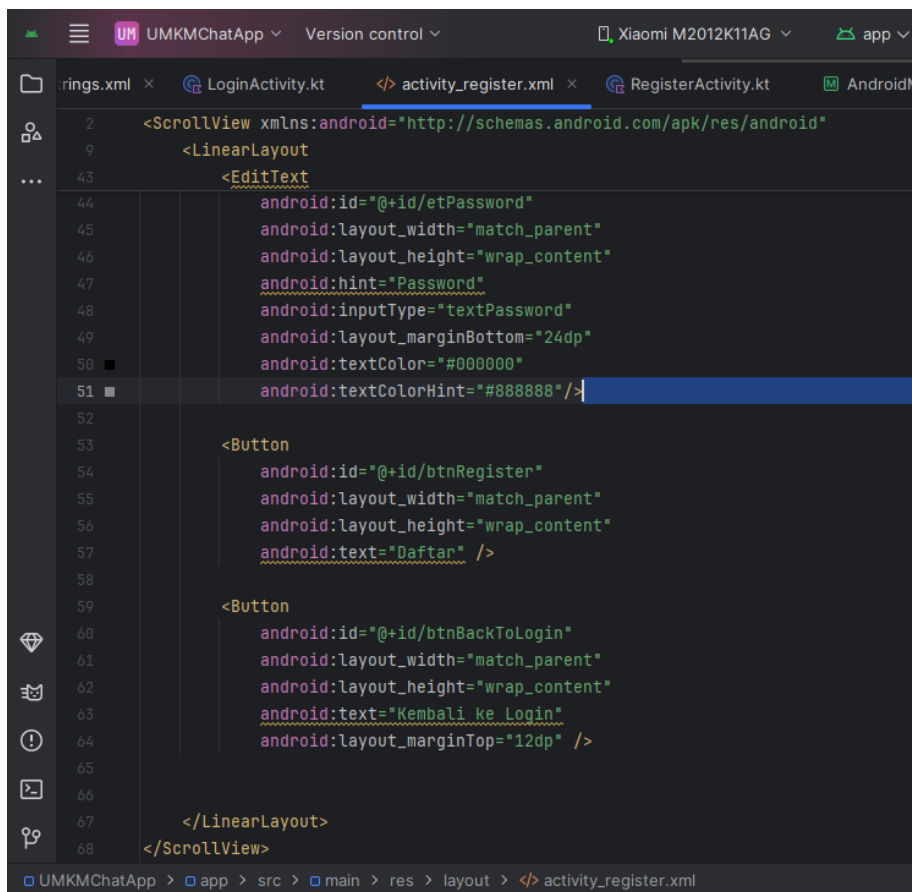


```
UMKMChatApp Version control Xiaomi M2012K11AG app
rings.xml LoginActivity.kt activity_register.xml RegisterActivity.kt AndroidManifest.xml
1 <?xml version="1.0" encoding="utf-8"?>
2 <ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
3     android:id="@+id/registerScrollView"
4     android:layout_width="match_parent"
5     android:layout_height="match_parent"
6     android:padding="24dp"
7     android:background="#FFFFFF">
8
9     <LinearLayout
10         android:layout_width="match_parent"
11         android:layout_height="wrap_content"
12         android:orientation="vertical"
13         android:gravity="center_horizontal">
14
15         <TextView
16             android:id="@+id/tvRegisterTitle"
17             android:layout_width="wrap_content"
18             android:layout_height="wrap_content"
19             android:text="Register Akun"
20             android:textSize="24sp"
21             android:textStyle="bold"
22             android:layout_marginBottom="24dp"
23             android:textColor="#000000" />
24
25         <ImageView
26             android:id="@+id/imgLogo"
27             android:layout_width="120dp"
28             android:layout_height="120dp"

```

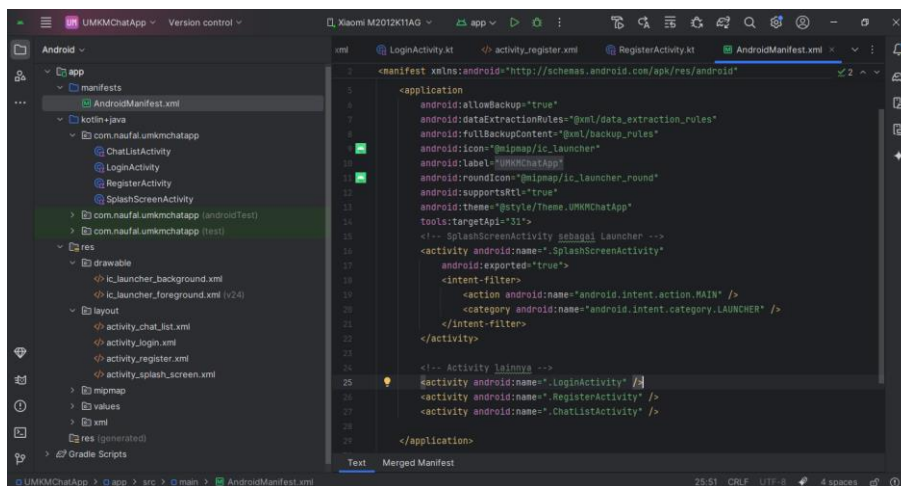
```
UMKMChatApp Version control Xiaomi M2012K11AG app
rings.xml LoginActivity.kt activity_register.xml RegisterActivity.kt AndroidManifest.xml
2 <ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
9 <LinearLayout
25 <ImageView
26     android:id="@+id/imgLogo"
27     android:layout_width="120dp"
28     android:layout_height="120dp"
29     android:src="@mipmap/ic_launcher"
30     android:layout_marginBottom="24dp" />
31
32 <EditText
33     android:id="@+id/etNama"
34     android:layout_width="match_parent"
35     android:layout_height="wrap_content"
36     android:hint="Nama"
37     android:inputType="textPersonName"
38     android:layout_marginBottom="16dp"
39     android:textColor="#000000"
40     android:textColorHint="#888888" />
41
42
43 <EditText
44     android:id="@+id/etPassword"
45     android:layout_width="match_parent"
46     android:layout_height="wrap_content"
47     android:hint="Password"
48     android:inputType="textPassword"
49     android:layout_marginBottom="24dp"
50     android:textColor="#AAAAAA"

```



```
2 <ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
9 <LinearLayout
43 <EditText
44     android:id="@+id/etPassword"
45     android:layout_width="match_parent"
46     android:layout_height="wrap_content"
47     android:hint="Password"
48     android:inputType="textPassword"
49     android:layout_marginBottom="24dp"
50     android:textColor="#000000"
51     android:textColorHint="#888888" />
52
53 <Button
54     android:id="@+id/btnRegister"
55     android:layout_width="match_parent"
56     android:layout_height="wrap_content"
57     android:text="Daftar" />
58
59 <Button
60     android:id="@+id/btnBackToLogin"
61     android:layout_width="match_parent"
62     android:layout_height="wrap_content"
63     android:text="Kembali ke Login"
64     android:layout_marginTop="12dp" />
65
66
67 </LinearLayout>
68 </ScrollView>
```

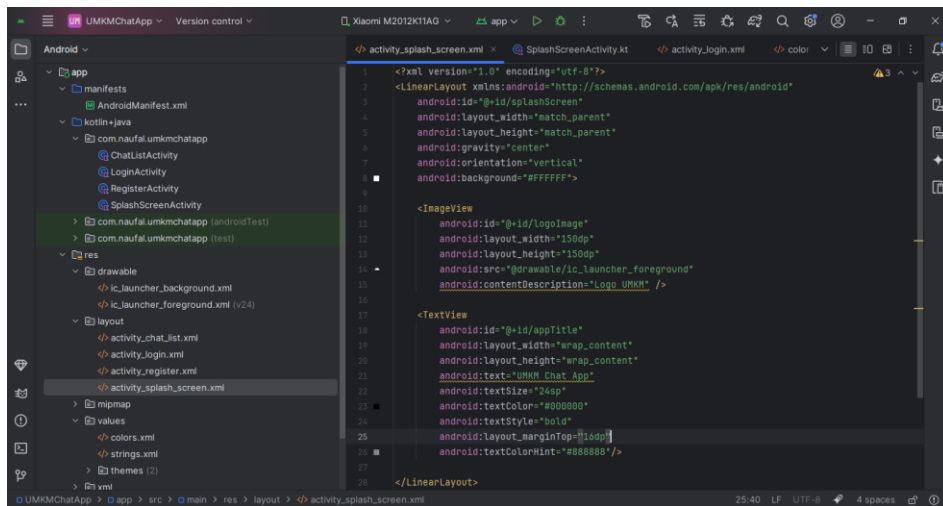
UMKMChatApp > app > src > main > res > layout > activity\_register.xml



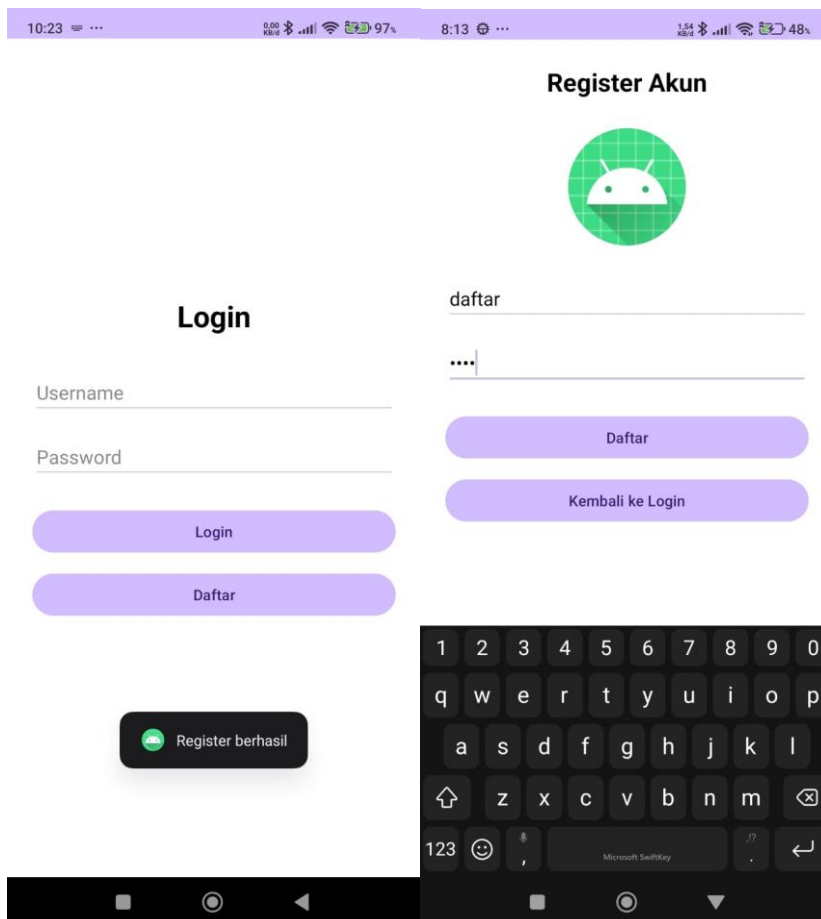
```
7 <manifest xmlns:android="http://schemas.android.com/apk/res/android"
8
9 <application
10     android:allowBackup="true"
11     android:dataExtractionRules="@xml/data_extraction_rules"
12     android:fullBackupContent="@xml/backup_rules"
13     android:icon="@mipmap/ic_launcher"
14     android:label="@string/app_name"
15     android:roundIcon="@mipmap/ic_launcher_round"
16     android:supportRtl="true"
17     android:theme="@style/Theme.UMKMChatApp"
18     tools:targetApi="31"
19     <!-- SplashScreenActivity sebagai Launcher -->
20     <activity android:name=".SplashScreenActivity"
21         android:exported="true"
22         <intent-filter>
23             <action android:name="android.intent.action.MAIN" />
24             <category android:name="android.intent.category.LAUNCHER" />
25         </intent-filter>
26     </activity>
27
28     <!-- Activity lainnya -->
29     <activity android:name=".LoginActivity" />
30     <activity android:name=".RegisterActivity" />
31     <activity android:name=".ChatListActivity" />
32 </application>
```

UMKMChatApp > app > src > main > AndroidManifest.xml

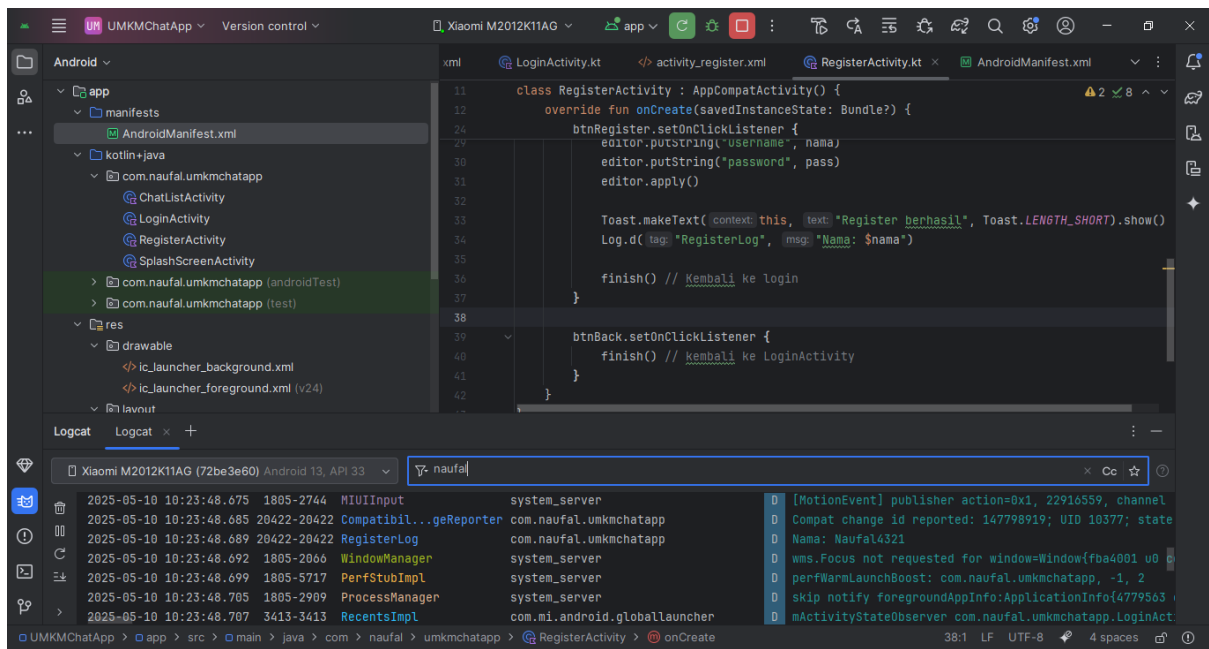




Evenlog saat mengklik daftar



Logcat saat klik tombol daftar dengan username Naufal4321



## Penjelasan tiap baris code pada file kotlin

### ***SplashScreenActivity.kt***

```
class SplashScreenActivity : AppCompatActivity() {
```

Membuat class SplashScreenActivity sebagai Activity awal

```
    override fun onCreate(savedInstanceState: Bundle?) {
```

Fungsi onCreate dipanggil saat activity pertama kali dibuat.

```
        super.onCreate(savedInstanceState)
```

Memanggil implementasi dari superclass (*AppCompatActivity*).

```
        setContentView(R.layout.activity_splash_screen)
```

Menampilkan tampilan dari activity\_splash\_screen.xml.

```
        Handler(Looper.getMainLooper()).postDelayed({
            startActivity(Intent(this, LoginActivity::class.java))
            finish()
        }, 2000)
```

Menunda 2 detik sebelum berpindah ke LoginActivity dan menutup splash screen.

### ***LoginActivity.kt***

```
val etUsername = findViewById<EditText>(R.id.etUsername)
val etPassword = findViewById<EditText>(R.id.etPassword)
val btnLogin = findViewById<Button>(R.id.btnLogin)
val btnGoToRegister = findViewById<Button>(R.id.btnGoToRegister)
```

Menghubungkan komponen UI dari XML ke kode Kotlin.

```
val sharedPref = getSharedPreferences("UserData", MODE_PRIVATE)
val savedUser = sharedPref.getString("username", null)
val savedPass = sharedPref.getString("password", null)
```

Mengambil data username dan password yang sebelumnya disimpan di SharedPreferences.

```
btnLogin.setOnClickListener {
```

Menentukan aksi saat tombol login ditekan.

```
    val inputUser = etUsername.text.toString()
    val inputPass = etPassword.text.toString()
```

Mengambil inputan user.

```
    if ((inputUser == savedUser && inputPass == savedPass) || ...)
```

Mengecek apakah login cocok dengan data register atau admin default.

```
startActivity(Intent(this, ChatListActivity::class.java))
finish()
```

Jika benar, pindah ke halaman ChatListActivity.

```
Toast.makeText(this, "Login gagal!", Toast.LENGTH_SHORT).show()
```

Jika salah, tampilkan notifikasi gagal.

```
btnGoToRegister.setOnClickListener {
    startActivity(Intent(this, RegisterActivity::class.java))
}
```

Jika ditekan, pindah ke RegisterActivity.

## ***RegisterActivity.kt***

```
val etNama = findViewById<EditText>(R.id.etNama)
val etPass = findViewById<EditText>(R.id.etPassword)
val btnRegister = findViewById<Button>(R.id.btnRegister)
val btnBack = findViewById<Button>(R.id.btnBackToLogin)
```

Menghubungkan input nama, password, dan tombol-tombol ke Kotlin.

```
val sharedPref = getSharedPreferences("UserData", MODE_PRIVATE)
```

Membuka file penyimpanan lokal.

```
btnRegister.setOnClickListener {
    val nama = etNama.text.toString()
    val pass = etPass.text.toString()
}
```

Mengambil input dari user.

```
val editor = sharedPref.edit()
editor.putString("username", nama)
editor.putString("password", pass)
editor.apply()
```

Menyimpan data ke SharedPreferences.

```
Toast.makeText(this, "Register berhasil", Toast.LENGTH_SHORT).show()
Log.d("RegisterLog", "Nama: $nama")
```

Menampilkan notifikasi dan log debug.

```
finish()
```

Menutup halaman register (kembali ke login).

```
btnBack.setOnClickListener {
    finish()
}
```

Tombol kembali juga menutup halaman.

## ***ChatListActivity.kt***

```
val listView = findViewById<ListView>(R.id.listView)
```

Menghubungkan ListView dari layout ke Kotlin.

```
val data = arrayOf("Pelanggan A", "Pelanggan B", "Pelanggan C")
```

Data dummy chat pelanggan.

```
val adapter = object : ArrayAdapter<String>(  
    this,  
    android.R.layout.simple_list_item_1,  
    data  
)
```

Membuat objek ArrayAdapter khusus (anonymous class) untuk menampilkan array data ke dalam ListView, menggunakan layout bawaan simple\_list\_item\_1.

```
override fun getView(position: Int, convertView: View?, parent: ViewGroup): View {
```

Override method `getView` agar bisa mengubah tampilan masing-masing item list (baris).

```
val view = super.getView(position, convertView, parent) as TextView
```

Memanggil method asli `getView()` untuk mendapatkan tampilan item, lalu memastikan bahwa itu adalah `TextView`.

```
view.setTextColor(Color.BLACK)
```

Mengatur warna teks item menjadi hitam agar terlihat jelas di background putih.

```
return view
```

Mengembalikan tampilan `TextView` yang sudah diubah warnanya ke dalam `ListView`.

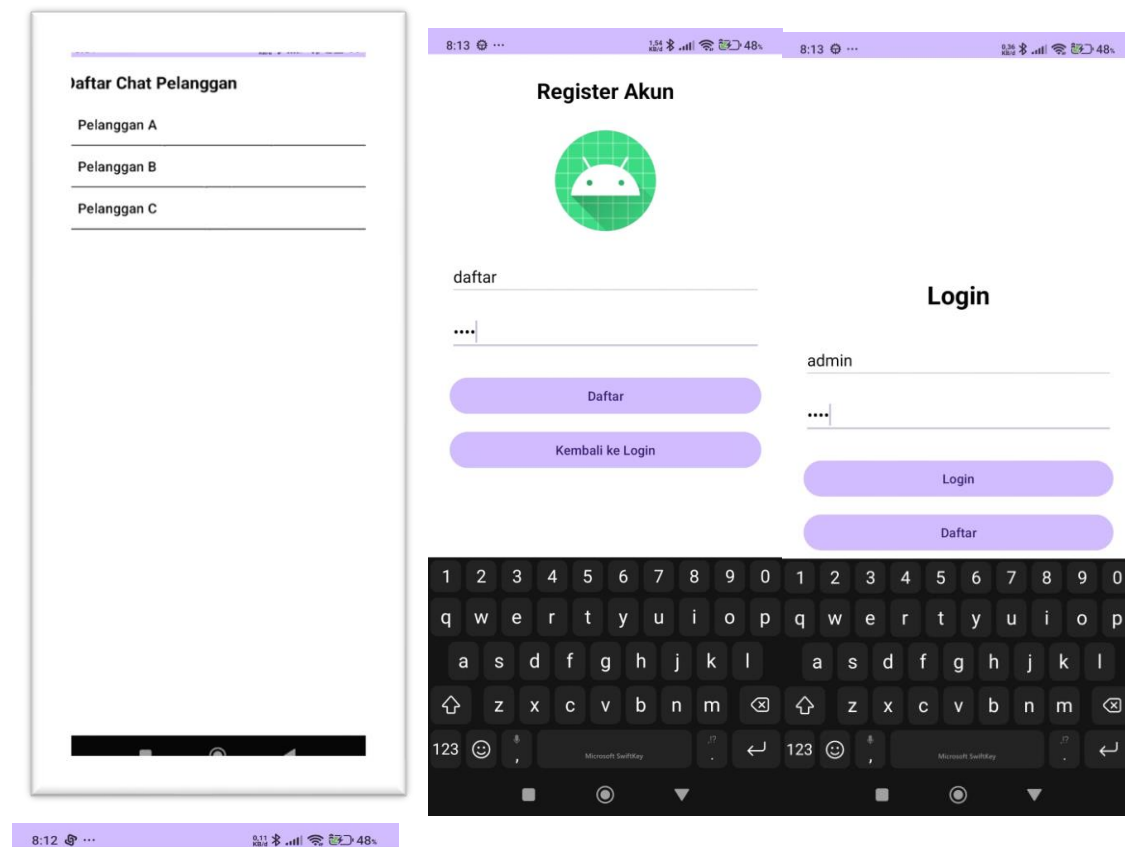
```
listView.adapter = adapter
```

Mengatur adapter yang sudah dikustomisasi ke dalam komponen `ListView`.

Link Github :

[https://github.com/NaufalEka4371/Tugas\\_Uts\\_Mobile](https://github.com/NaufalEka4371/Tugas_Uts_Mobile)

## Tampilan Aplikasi



  
**UMKM Chat App**

