

Laporan Praktikum 5

Pengembangan Aplikasi Mobile



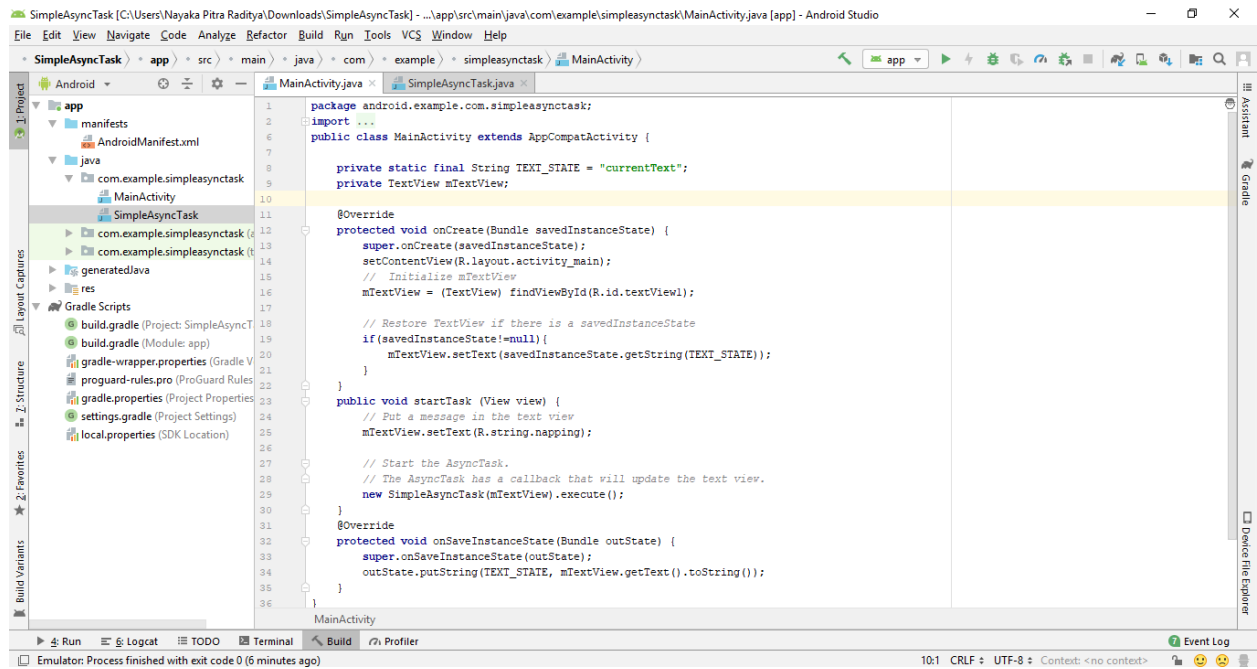
Nama : Nayaka Pitra Raditya
NIM : 14116030

TP 2018/2019

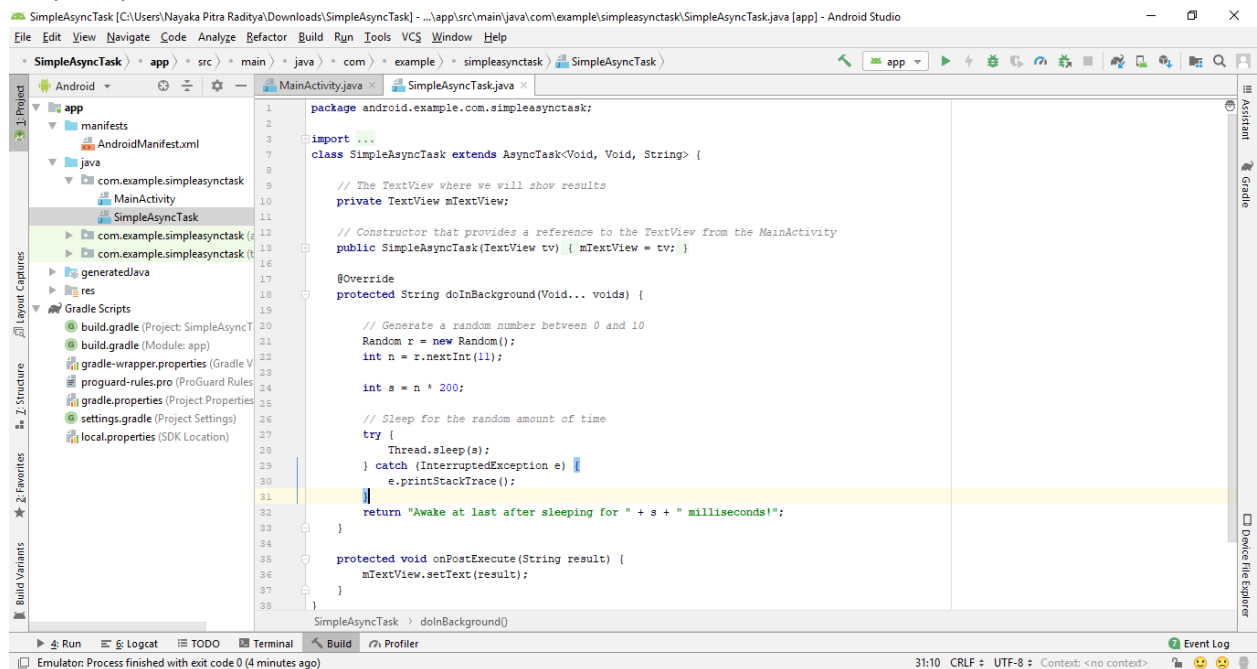
1. Membuat AsyncTask

Screenshot Source Code

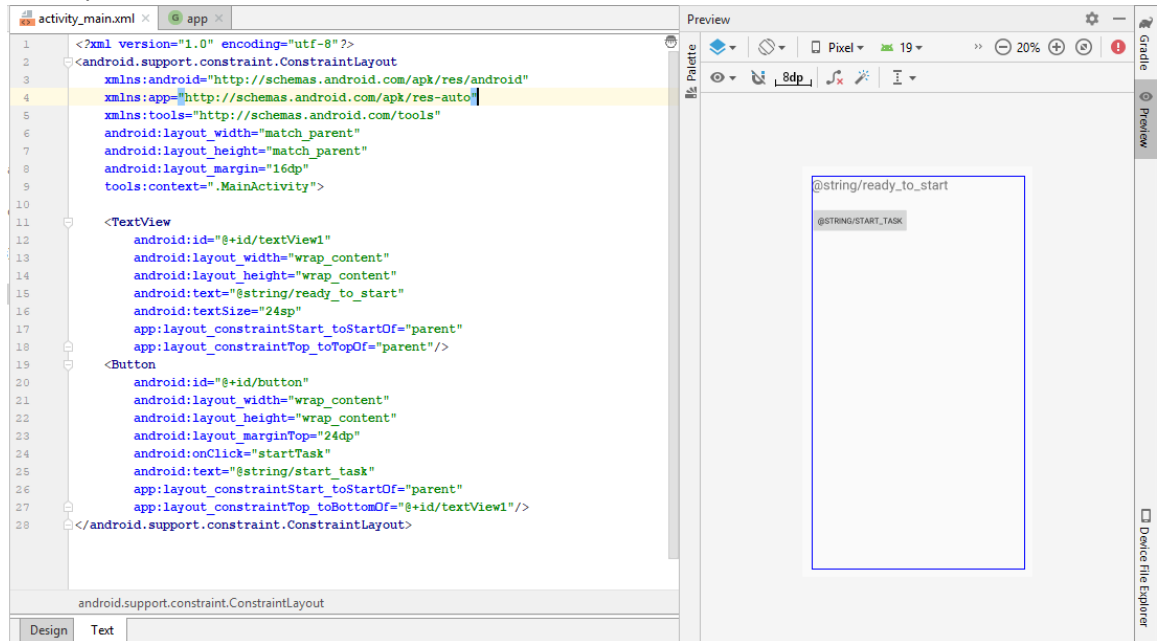
a. MainActivity



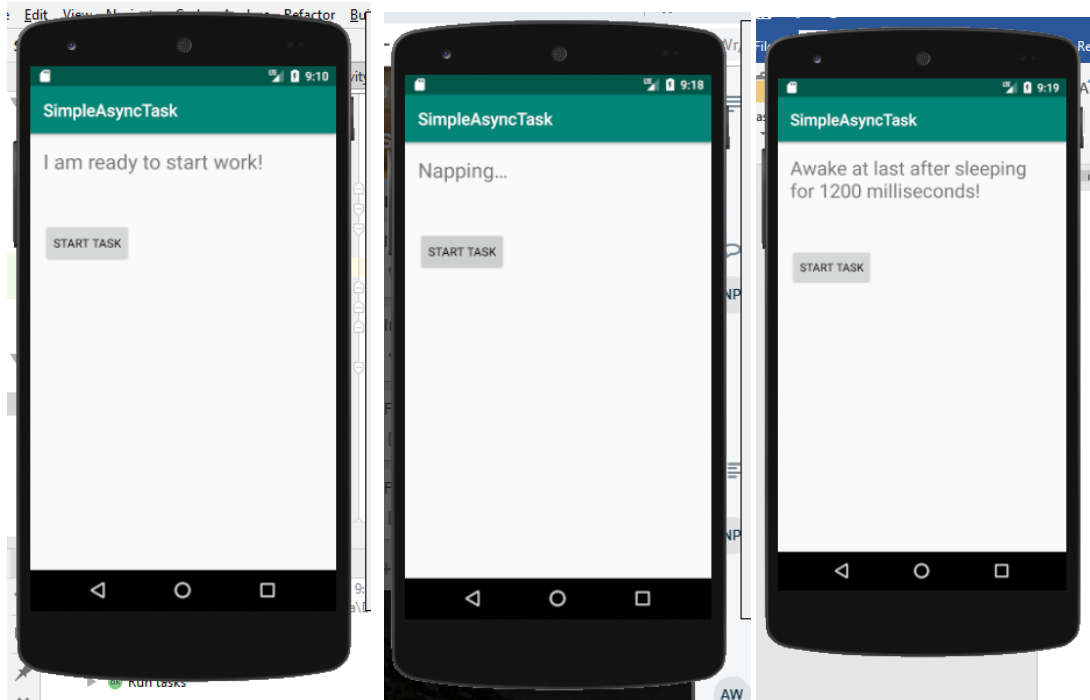
b. SimpleAsyncTask



c. ActivityMain



Screenshot Program



2. Menghubungkan ke Internet dengan AsyncTask dan AsyncTaskLoader

Screenshot Source

a. MainActivity

```
activity_main.xml x MainActivity.java x FetchBook.java x
1 package com.example.android.whowroteit;
2
3 import android.content.Context;
4 import android.net.ConnectivityManager;
5 import android.net.NetworkInfo;
6 import android.os.Bundle;
7 import android.support.v7.app.AppCompatActivity;
8 import android.view.View;
9 import android.view.inputmethod.InputMethodManager;
10 import android.widget.EditText;
11 import android.widget.TextView;
12
13
14 public class MainActivity extends AppCompatActivity {
15
16     // Variables for the search input field, and results TextViews.
17     private EditText mBookInput;
18     private TextView mTitleText;
19     private TextView mAuthorText;
20
21     @Override
22     protected void onCreate(Bundle savedInstanceState) {
23         super.onCreate(savedInstanceState);
24         setContentView(R.layout.activity_main);
25
26         // Initialize all the view variables.
27         mBookInput = (EditText) findViewById(R.id.bookInput);
28         mTitleText = (TextView) findViewById(R.id.titleText);
29         mAuthorText = (TextView) findViewById(R.id.authorText);
30     }
31
32     public void searchBooks(View view) {
33         // Get the search string from the input field.
```

```
activity_main.xml x MainActivity.java x FetchBook.java x
32 public void searchBooks(View view) {
33     // Get the search string from the input field.
34     String queryString = mBookInput.getText().toString();
35
36     // Hide the keyboard when the button is pushed.
37     InputMethodManager inputManager = (InputMethodManager)
38         getSystemService(Context.INPUT_METHOD_SERVICE);
39     inputManager.hideSoftInputFromWindow(getCurrentFocus().getWindowToken(),
40         InputMethodManager.HIDE_NOT_ALWAYS);
41
42     // Check the status of the network connection.
43     ConnectivityManager connMgr = (ConnectivityManager)
44         getSystemService(Context.CONNECTIVITY_SERVICE);
45     NetworkInfo networkInfo = connMgr.getActiveNetworkInfo();
46
47     // If the network is active and the search field is not empty, start a FetchBook AsyncTask.
48     if (networkInfo != null && networkInfo.isConnected() && queryString.length() != 0) {
49         new FetchBook(mTitleText, mAuthorText, mBookInput).execute(queryString);
50     }
51     // Otherwise update the TextView to tell the user there is no connection or no search term.
52     else {
53         if (queryString.length() == 0) {
54             mAuthorText.setText("");
55             mTitleText.setText("Please enter a search term");
56         } else {
57             mAuthorText.setText("");
58             mTitleText.setText("Please check your network connection and try again.");
59         }
60     }
61 }
62 }
```

b. FetchBook

```
1 package com.example.android.whowroteit;
2
3 import ...
4
17 public class FetchBook extends AsyncTask<String,Void,String>{
18
19     // Variables for the search input field, and results TextViews
20
21     private EditText mBookInput;
22     private TextView mTitleText;
23     private TextView mAuthorText;
24
25     // Class name for Log tag
26     private static final String LOG_TAG = FetchBook.class.getSimpleName();
27
28     // Constructor providing a reference to the views in MainActivity
29     public FetchBook(TextView titleText, TextView authorText, EditText bookInput) {
30         this.mTitleText = titleText;
31         this.mAuthorText = authorText;
32         this.mBookInput = bookInput;
33     }
34
35     @Override
36     protected String doInBackground(String... params) {
37
38         String queryString = params[0];
39
40         HttpURLConnection urlConnection = null;
41         BufferedReader reader = null;
42         String bookJSONString = null;
43
44         try {
45             // Base URI for the Books API.
46             final String BOOK_BASE_URL = "https://www.googleapis.com/books/v1/volumes?";
47
48         } catch (IOException e) {
49             // Handle exception
50         }
51     }
52 }
```

```
44 try {
45     // Base URI for the Books API.
46     final String BOOK_BASE_URL = "https://www.googleapis.com/books/v1/volumes?";
47
48     final String QUERY_PARAM = "q";
49     final String MAX_RESULTS = "maxResults";
50     final String PRINT_TYPE = "printType";
51
52     // Build up your query URI, limiting results to 10 items and printed books.
53     Uri buildURI = Uri.parse(BOOK_BASE_URL).buildUpon()
54         .appendQueryParameter(QUERY_PARAM, queryString)
55         .appendQueryParameter(MAX_RESULTS, "10")
56         .appendQueryParameter(PRINT_TYPE, "books")
57         .build();
58
59     URL requestURL = new URL(buildURI.toString());
60
61     urlConnection = (HttpURLConnection) requestURL.openConnection();
62     urlConnection.setRequestMethod("GET");
63     urlConnection.connect();
64
65     InputStream inputStream = urlConnection.getInputStream();
66
67     StringBuilder builder = new StringBuilder();
68
69     reader = new BufferedReader(new InputStreamReader(inputStream));
70
71     String line;
72     while ((line = reader.readLine()) != null) {
73         builder.append(line + "\n");
74     }
75
76 }
```

```
activity_main.xml x MainActivity.java x FetchBook.java x
77         if (builder.length() == 0) {
78             return null;
79         }
80         bookJSONString = builder.toString();
81
82         // Catch errors.
83     } catch (IOException e) {
84         e.printStackTrace();
85     }
86     finally {
87         if (urlConnection != null) {
88             urlConnection.disconnect();
89         }
90         if (reader != null) {
91             try {
92                 reader.close();
93             } catch (IOException e) {
94                 e.printStackTrace();
95             }
96         }
97     }
98
99     return bookJSONString;
100 }
101
102 @Override
103 protected void onPostExecute(String s) {
104     super.onPostExecute(s);
105     try {
106         // Convert the response into a JSON object.
107         JSONObject jsonObject = new JSONObject(s);
108         // Get the JSONArray of book items.
109         FetchBook
```

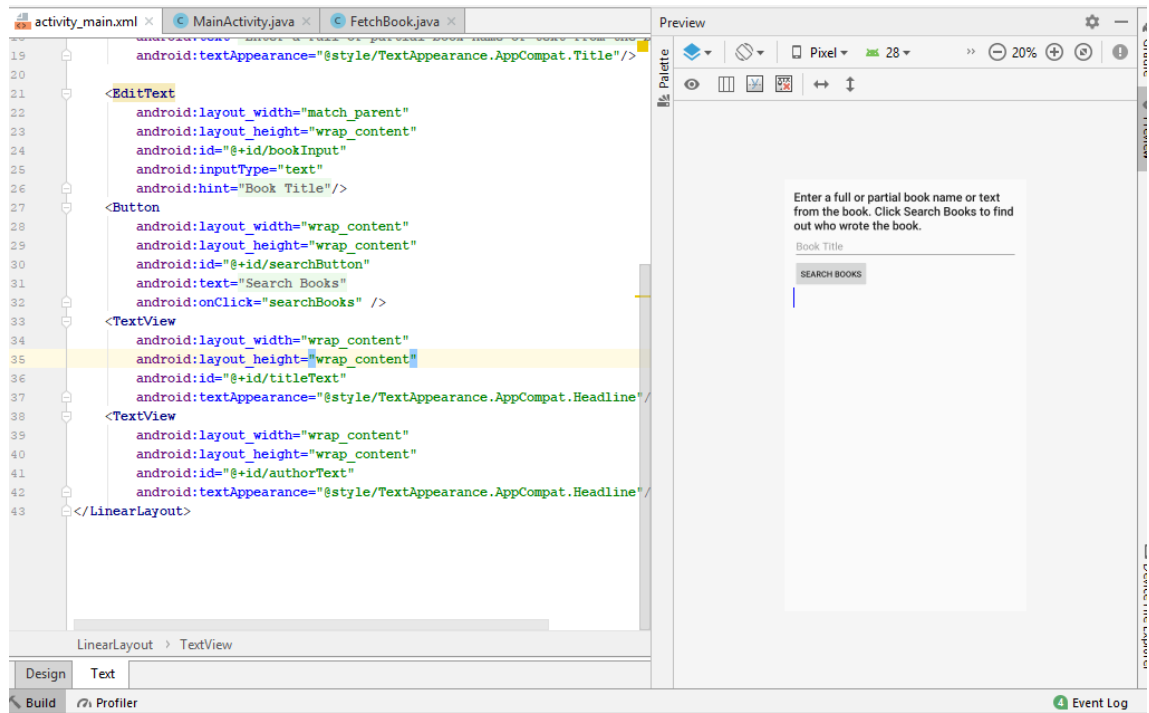
Gradle
Device File Explorer
Event Log

```
activity_main.xml x MainActivity.java x FetchBook.java x
109         // Get the JSONArray of book items.
110         JSONArray itemsArray = jsonObject.getJSONArray( "items");
111
112         // Initialize iterator and results fields.
113         int i = 0;
114         String title = null;
115         String authors = null;
116
117         while (i < itemsArray.length() || (authors == null && title == null)) {
118             // Get the current item information.
119             JSONObject book = itemsArray.getJSONObject(i);
120             JSONObject volumeInfo = book.getJSONObject("volumeInfo");
121
122             try {
123                 title = volumeInfo.getString( "title");
124                 authors = volumeInfo.getString( "authors");
125             } catch (Exception e){
126                 e.printStackTrace();
127             }
128
129             i++;
130         }
131
132         if (title != null && authors != null){
133             mTitleText.setText(title);
134             mAuthorText.setText(authors);
135             mBookInput.setText("");
136         } else {
137             mTitleText.setText(R.string.no_results);
138             mAuthorText.setText("");
139         }
140     } catch (Exception e){
141         FetchBook
```

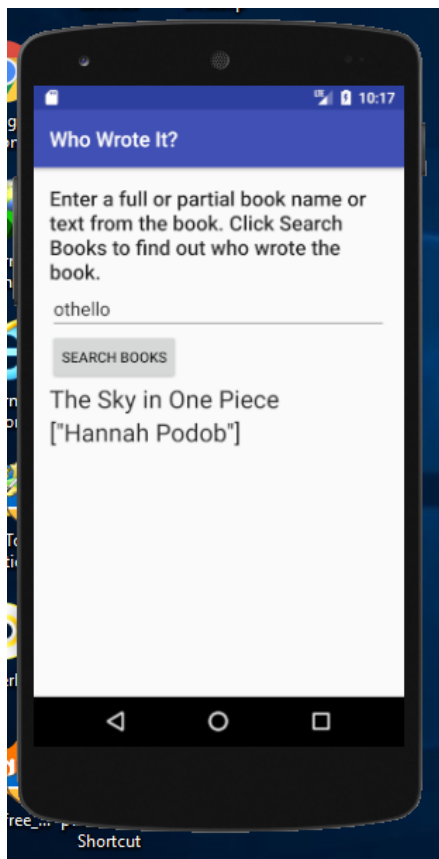
Gradle
Device File Explorer
Event Log

```
activity_main.xml x MainActivity.java x FetchBook.java x
115 String authors = null;
116
117 while (i < itemsArray.length() || (authors == null && title == null)) {
118     // Get the current item information.
119     JSONObject book = itemsArray.getJSONObject(i);
120     JSONObject volumeInfo = book.getJSONObject("volumeInfo");
121
122     try {
123         title = volumeInfo.getString( name: "title");
124         authors = volumeInfo.getString( name: "authors");
125     } catch (Exception e) {
126         e.printStackTrace();
127     }
128
129     i++;
130 }
131
132 if (title != null && authors != null) {
133     mTitleText.setText(title);
134     mAuthorText.setText(authors);
135     mBookInput.setText("");
136 } else {
137     mTitleText.setText(R.string.no_results);
138     mAuthorText.setText("");
139 }
140
141 } catch (Exception e) {
142     mTitleText.setText(R.string.no_results);
143     mAuthorText.setText("");
144     e.printStackTrace();
145 }
146
147 }
148
149
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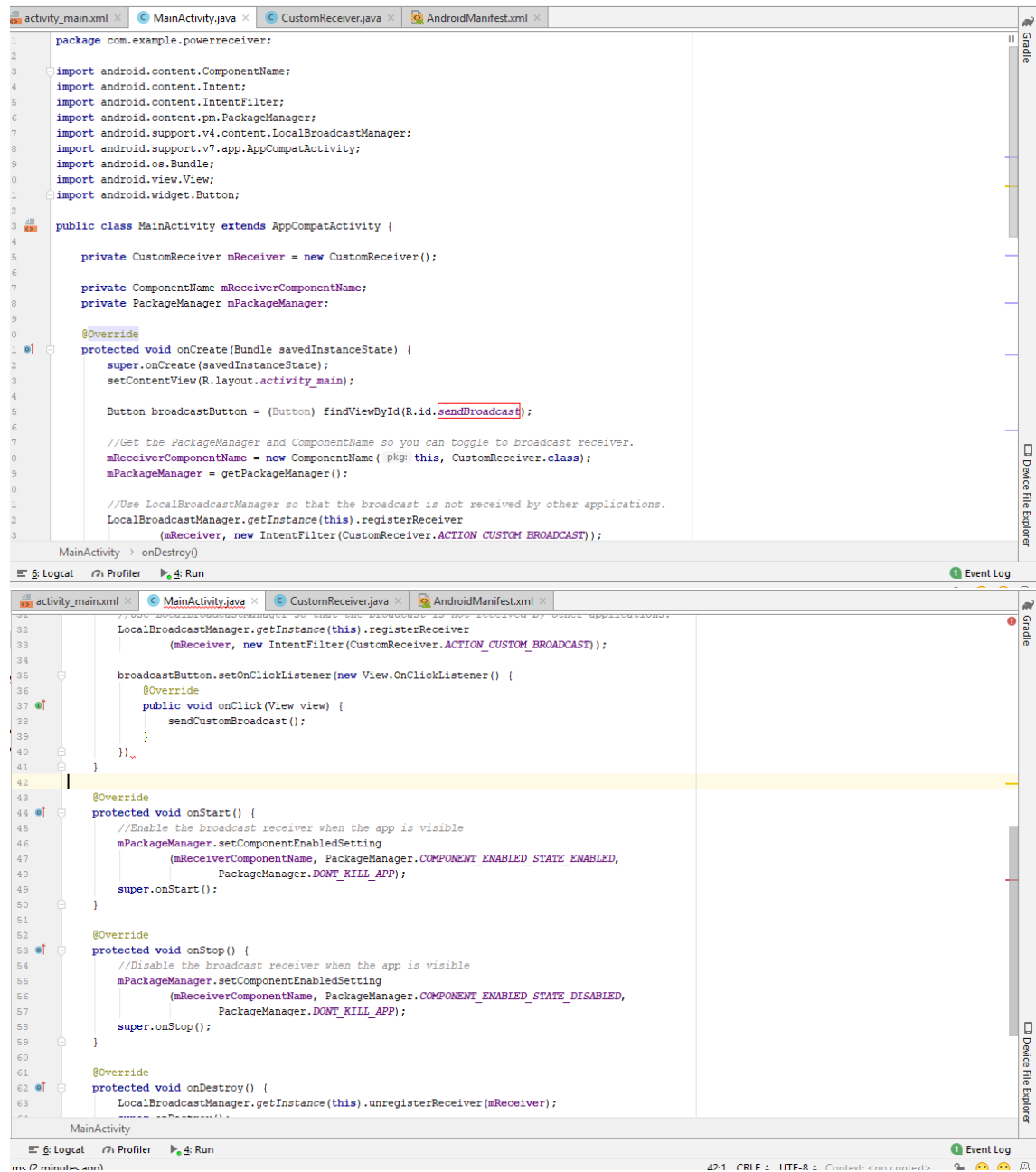
Screenshot Program



3. Penerima siaran

Screenshot Source Code

a. MainActivity



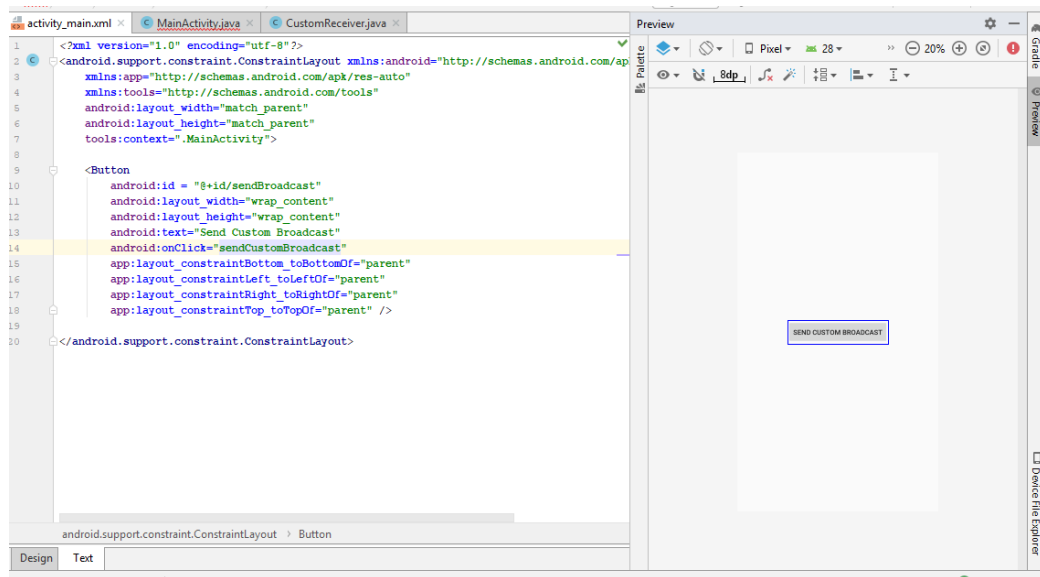
```
1 package com.example.powerreceiver;
2
3 import android.content.ComponentName;
4 import android.content.Intent;
5 import android.content.IntentFilter;
6 import android.content.pm.PackageManager;
7 import android.support.v4.content.LocalBroadcastManager;
8 import android.support.v7.app.AppCompatActivity;
9 import android.os.Bundle;
10 import android.view.View;
11 import android.widget.Button;
12
13 public class MainActivity extends AppCompatActivity {
14     private CustomReceiver mReceiver = new CustomReceiver();
15
16     private ComponentName mReceiverComponentName;
17     private PackageManager mPackageManager;
18
19     @Override
20     protected void onCreate(Bundle savedInstanceState) {
21         super.onCreate(savedInstanceState);
22         setContentView(R.layout.activity_main);
23
24         Button broadcastButton = (Button) findViewById(R.id.sendBroadcast);
25
26         //Get the PackageManager and ComponentName so you can toggle to broadcast receiver.
27         mReceiverComponentName = new ComponentName( pkg: this, CustomReceiver.class);
28         mPackageManager = getPackageManager();
29
30         //Use LocalBroadcastManager so that the broadcast is not received by other applications.
31         LocalBroadcastManager.getInstance(this).registerReceiver
32             (mReceiver, new IntentFilter(CustomReceiver.ACTION_CUSTOM_BROADCAST));
33     }
34
35     //onDestroy()
36
37     LocalBroadcastManager.getInstance(this).registerReceiver
38         (mReceiver, new IntentFilter(CustomReceiver.ACTION_CUSTOM_BROADCAST));
39
40     broadcastButton.setOnClickListener(new View.OnClickListener() {
41         @Override
42         public void onClick(View view) {
43             sendCustomBroadcast();
44         }
45     })
46
47     @Override
48     protected void onStart() {
49         //Enable the broadcast receiver when the app is visible
50         mPackageManager.setComponentEnabledSetting
51             (mReceiverComponentName, PackageManager.COMPONENT_ENABLED_STATE_ENABLED,
52              PackageManager.DONT_KILL_APP);
53         super.onStart();
54     }
55
56     @Override
57     protected void onStop() {
58         //Disable the broadcast receiver when the app is visible
59         mPackageManager.setComponentEnabledSetting
60             (mReceiverComponentName, PackageManager.COMPONENT_ENABLED_STATE_DISABLED,
61              PackageManager.DONT_KILL_APP);
62         super.onStop();
63     }
64
65     @Override
66     protected void onDestroy() {
67         LocalBroadcastManager.getInstance(this).unregisterReceiver(mReceiver);
68     }
69 }
```

```
39     }
40
41 }
42
43 @Override
44 protected void onStart() {
45     //Enable the broadcast receiver when the app is visible
46     mPackageManager.setComponentEnabledSetting
47         (mReceiverComponentName, PackageManager.COMPONENT_ENABLED_STATE_ENABLED,
48          PackageManager.DONT_KILL_APP);
49     super.onStart();
50 }
51
52 @Override
53 protected void onStop() {
54     //Disable the broadcast receiver when the app is visible
55     mPackageManager.setComponentEnabledSetting
56         (mReceiverComponentName, PackageManager.COMPONENT_ENABLED_STATE_DISABLED,
57          PackageManager.DONT_KILL_APP);
58     super.onStop();
59 }
60
61 @Override
62 protected void onDestroy() {
63     LocalBroadcastManager.getInstance(this).unregisterReceiver(mReceiver);
64     super.onDestroy();
65 }
66
67 private void sendCustomBroadcast() {
68     Intent customBroadcastIntent = new Intent(CustomReceiver.ACTION_CUSTOM_BROADCAST);
69     LocalBroadcastManager.getInstance(this).sendBroadcast(customBroadcastIntent);
70 }
71 }
```

b. CustomReceiver

```
1 package com.example.powerreceiver;
2
3 import ...
4
5
6
7 public class CustomReceiver extends BroadcastReceiver {
8
9     //String constant that defines the custom Broadcast Action
10     static final String ACTION_CUSTOM_BROADCAST =
11         "com.example.android.powerreceiver.ACTION_CUSTOM_BROADCAST";
12
13     public CustomReceiver() {
14     }
15
16 @Override
17 public void onReceive(Context context, Intent intent) {
18     String intentAction = intent.getAction();
19     String toastMessage = null;
20     switch (intentAction){
21         case Intent.ACTION_POWER_CONNECTED:
22             toastMessage = context.getString(R.string.power_connected);
23             break;
24         case Intent.ACTION_POWER_DISCONNECTED:
25             toastMessage = context.getString(R.string.power_disconnected);
26             break;
27         case ACTION_CUSTOM_BROADCAST:
28             toastMessage = context.getString(R.string.custom_broadcast_toast);
29             break;
30     }
31     Toast.makeText(context, toastMessage, Toast.LENGTH_SHORT).show();
32 }
33 }
34
35
36 }
```

c. ActivityMain



Screenshot Program

