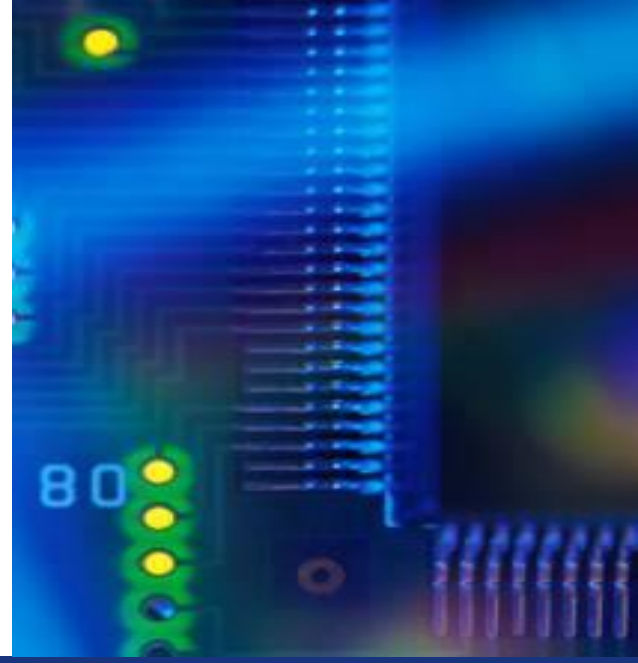
KEMENTERIAN KOMUNIKASI DAN INFORMATIKA
REPUBLIK INDONESIA
Menuju Masyarakat Informasi Indonesia

DIGITAL TALENT SCHOLARSHIP

vsga vocational school graduate academy



JUNIOR MOBILE PROGRAMMER

PROJECT: APLIKASI DATABASE DENGAN SQLITE + BACKEND

(Aplikasi Database SQLite & Backend API)

Deskripsi Singkat

Deskripsi Singkat mengenai Topik

Peserta pelatihan melakukan praktek mengerjakan project membuat aplikasi database dengan backend

Tujuan Pelatihan

1. Peserta pelatihan dapat mengerjakan tugas yang diberikan sesuai dengan persyaratan yang ditentukan.

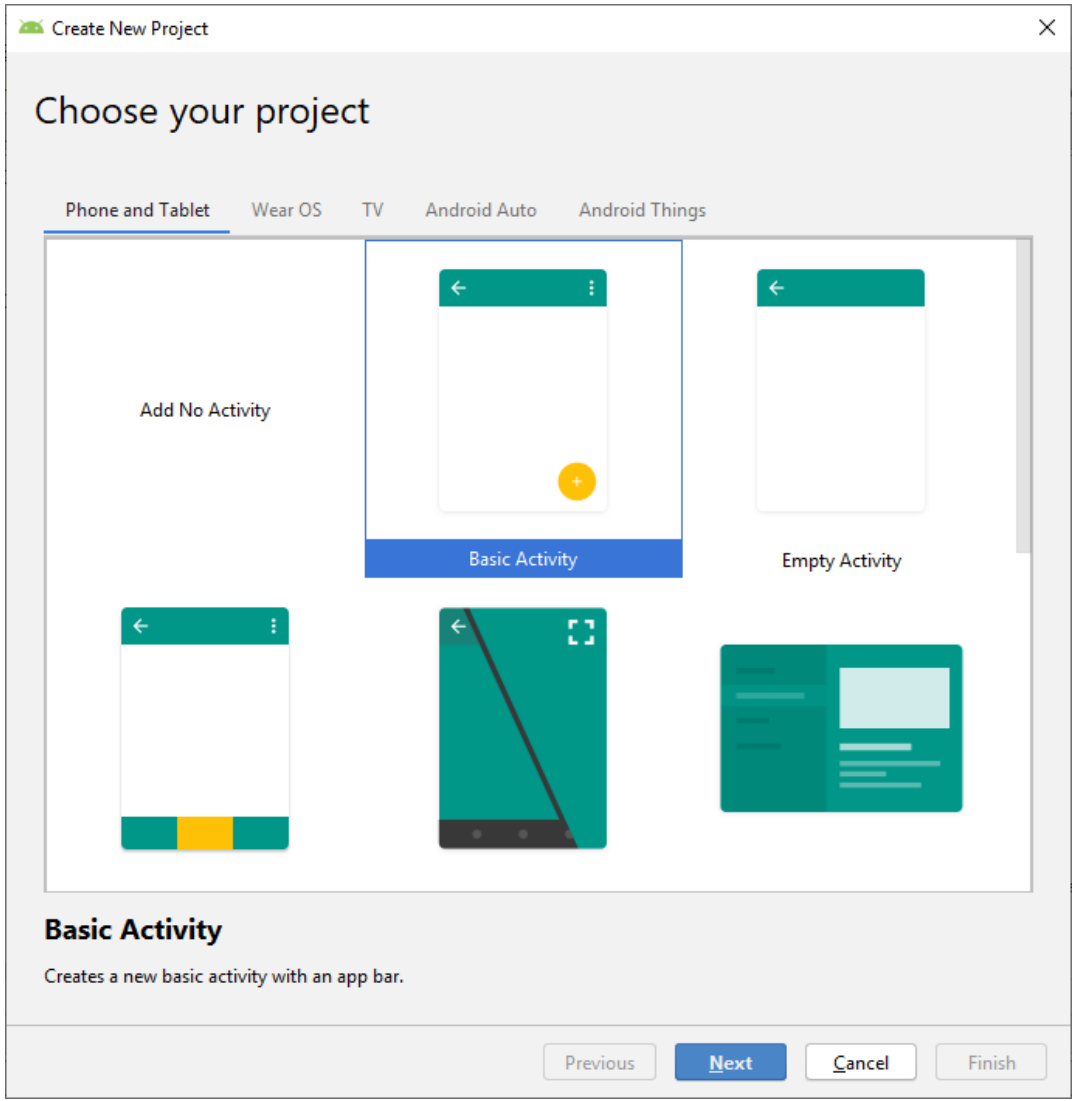
Materi Yang akan disampaikan:

1. -

Tugas :

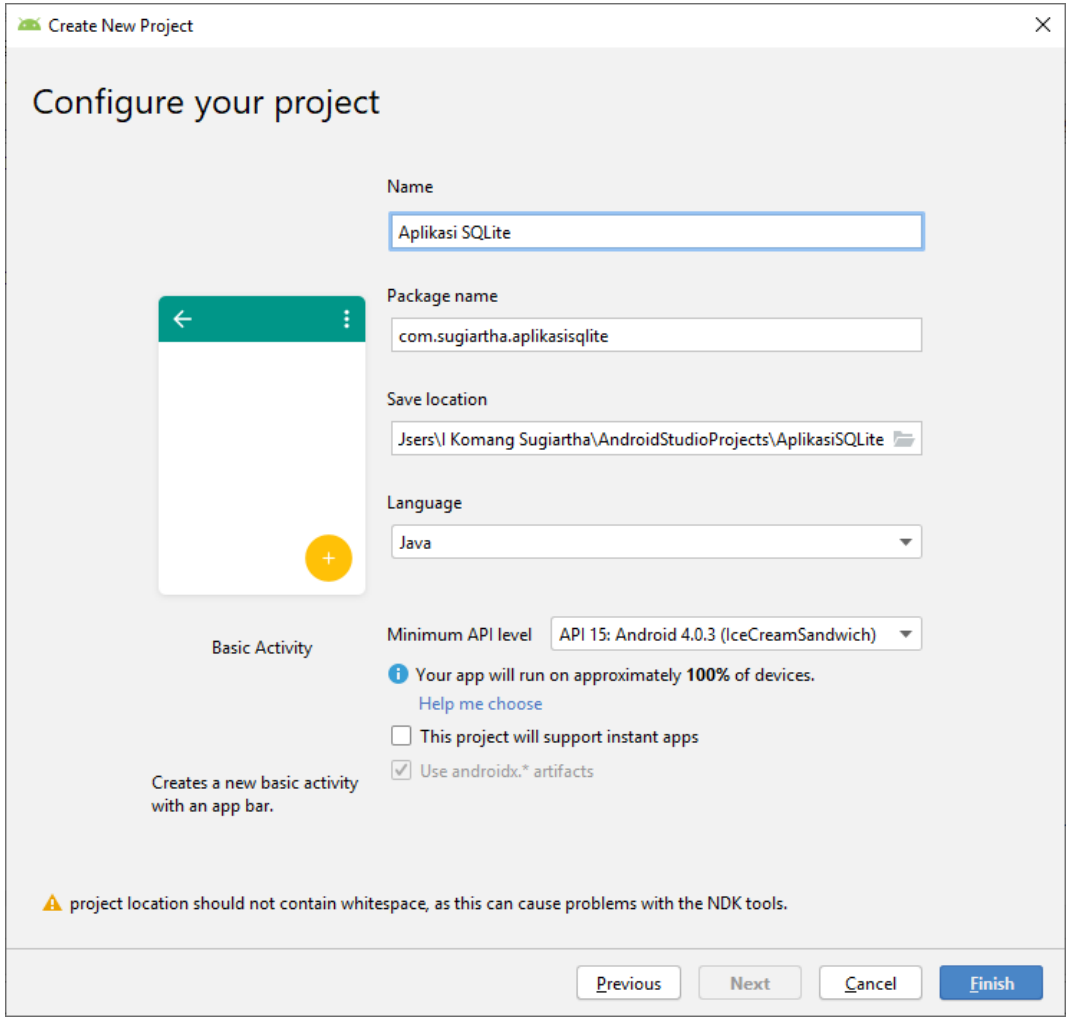
Membuat aplikasi database dengan backend menggunakan alat bantu yang telah diinstalasi sesuai dengan spesifikasi projek yang diberikan.

Aplikasi Database SQLite



- Buat Project Baru dengan cara klik menu File → New → New Project.
- Pilih Basic Activity.

Aplikasi Database SQLite



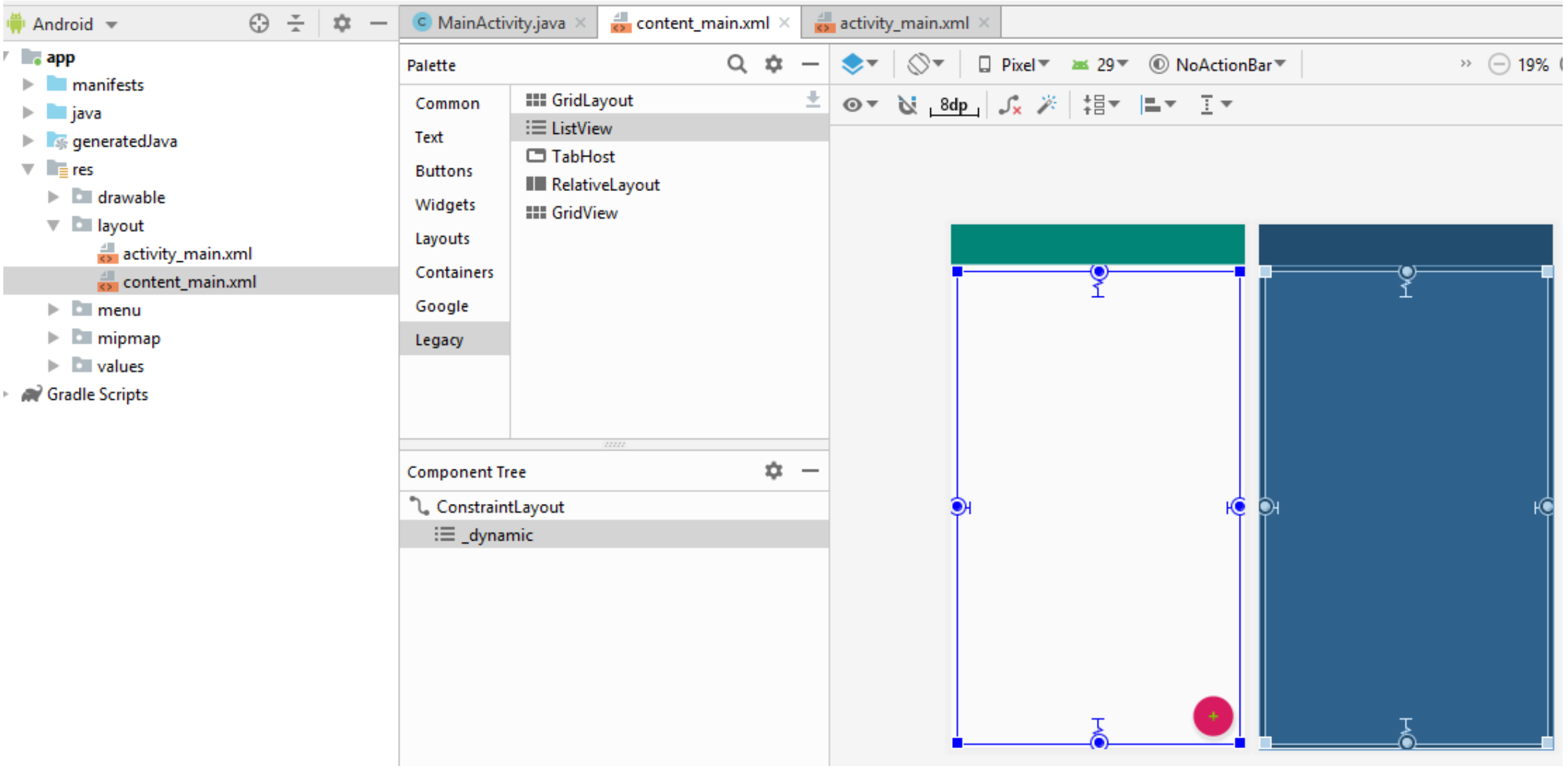
- Isi Name dengan nama Aplikasi SQLite
- Kolom yang lain biarkan secara default.
- Klik Finish

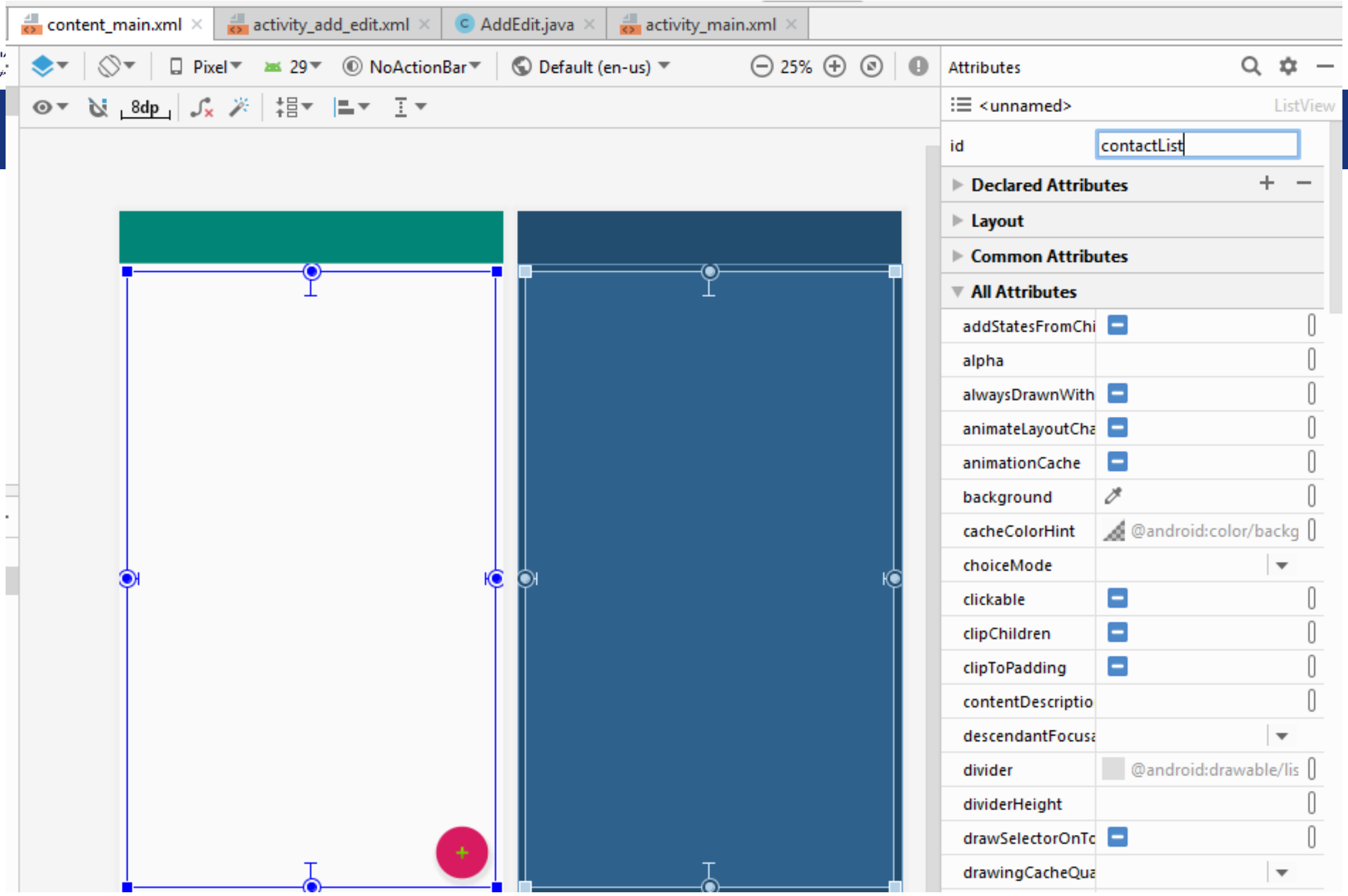
Aplikasi Database SQLite

- Buka layout activity_main.xml dan ganti bagian ic_dialog_email menjadi ic_input_add

```
25      <com.google.android.material.floatingactionbutton.FloatingActionButton
26          android:id="@+id/fab"
27          android:layout_width="wrap_content"
28          android:layout_height="wrap_content"
29          android:layout_gravity="bottom|end"
30          android:layout_margin="16dp"
31          app:srcCompat="@android:drawable/ic_input_add" />
32
33  </androidx.coordinatorlayout.widget.CoordinatorLayout>
```

Aplikasi Database SQLite




content_main.xml
activity_add_edit.xml
AddEdit.java
activity_main.xml
Pixel
29
NoActionBar
Default (en-us)
25%
8dp
Attributes
<unnamed>
ListView
id
contactList
Declared Attributes
Layout
Common Attributes
All Attributes
addStatesFromChi
alpha
alwaysDrawnWith
animateLayoutCha
animationCache
background
cacheColorHint
@android:color/backg
choiceMode
clickable
clipChildren
clipToPadding
contentDescriptio
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divider
@android:drawable/lis
dividerHeight
drawSelectorOnTc
drawingCacheQua

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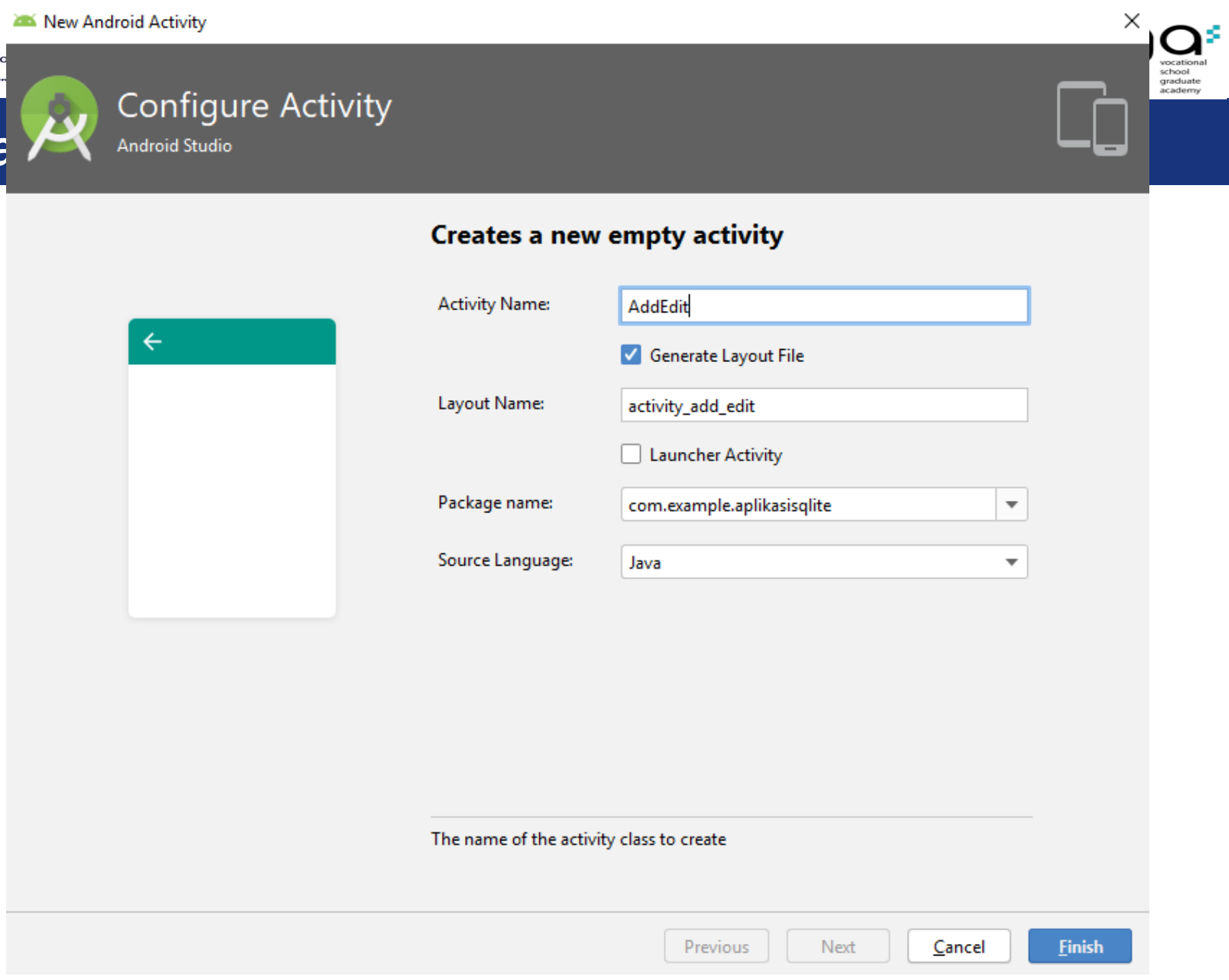
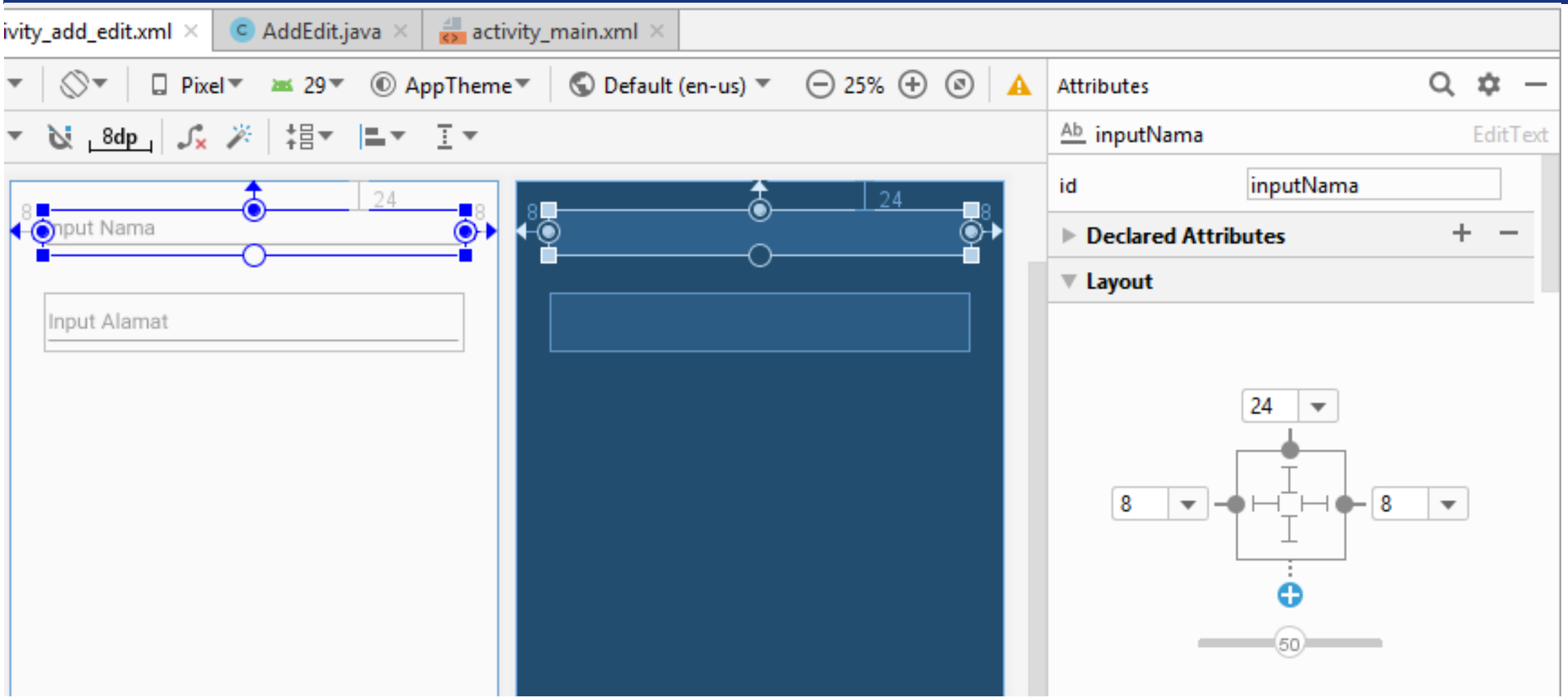
Aplika



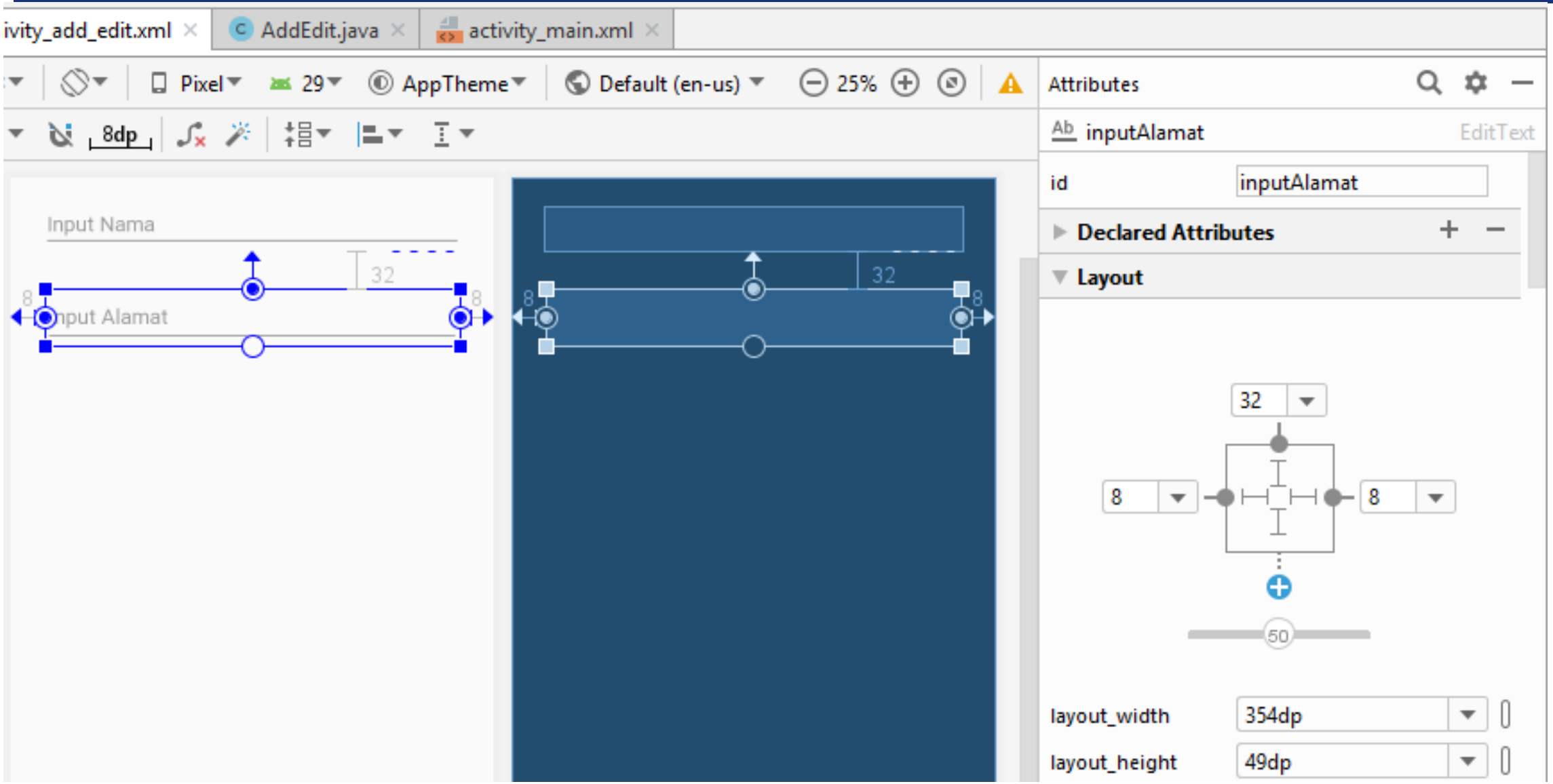
Aplikasi Database SQLite

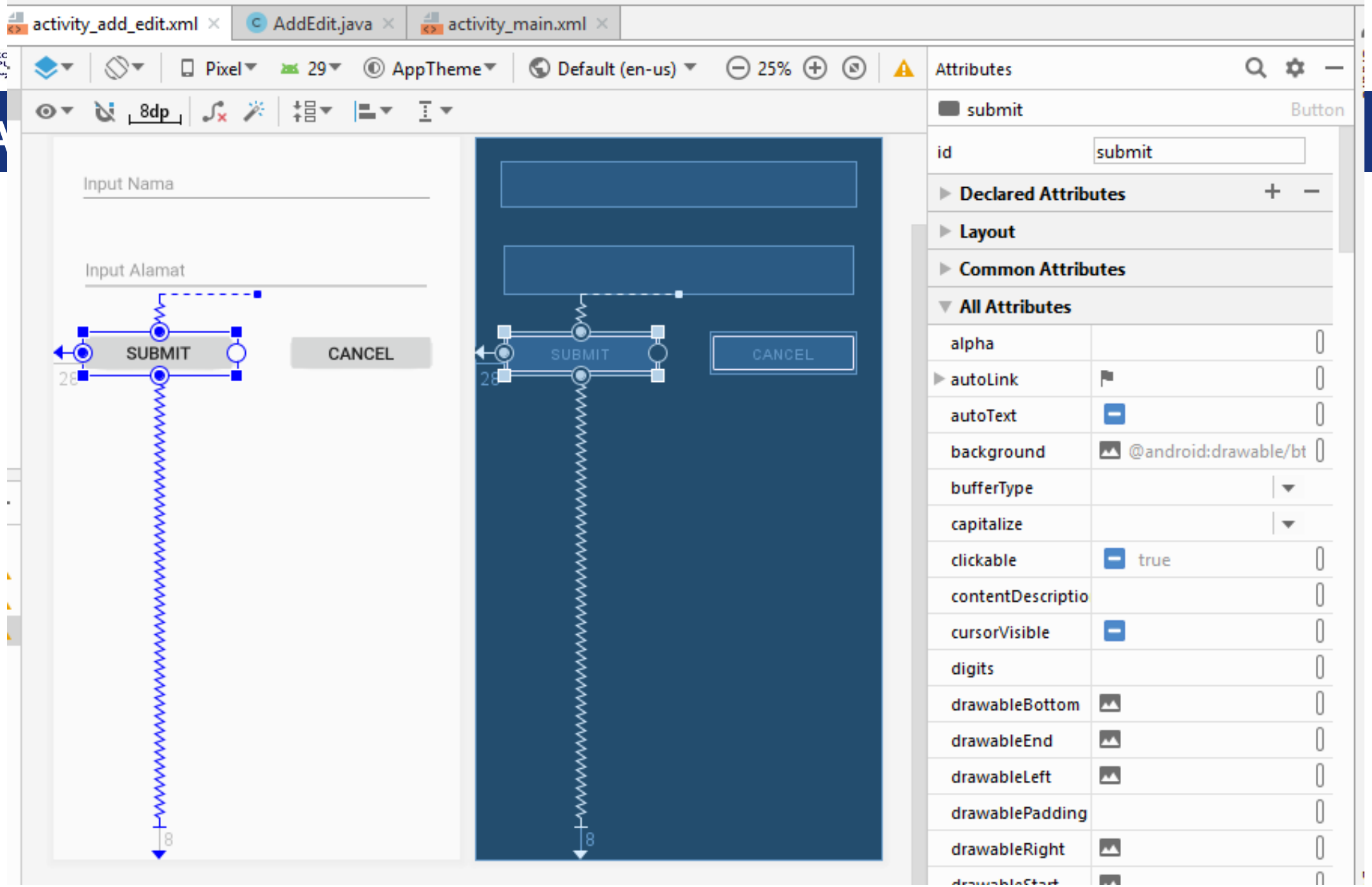
```
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toolbar toolbar = findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);

        FloatingActionButton fab = findViewById(R.id.fab);
        fab.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
//                Snackbar.make(view, "Replace with your own action", Snackbar.LENGTH_LONG)
//                        .setAction("Action", null).show();
                Intent intent = new Intent( packageContext: MainActivity.this, AddEdit.class);
                startActivity(intent);
            }
        });
    }
```

Aplikasi Database SQLite



Aplikasi Database SQLite




activity_add_edit.xml
AddEdit.java
activity_main.xml
Pixel
29
AppTheme
Default (en-us)
25%
8dp
Input Nama
Input Alamat
SUBMIT
CANCEL
Attributes
submit
Button
id
submit
Declared Attributes
Layout
Common Attributes
All Attributes
alpha
autoLink
autoText
background
@android:drawable/bt
bufferType
capitalize
clickable
true
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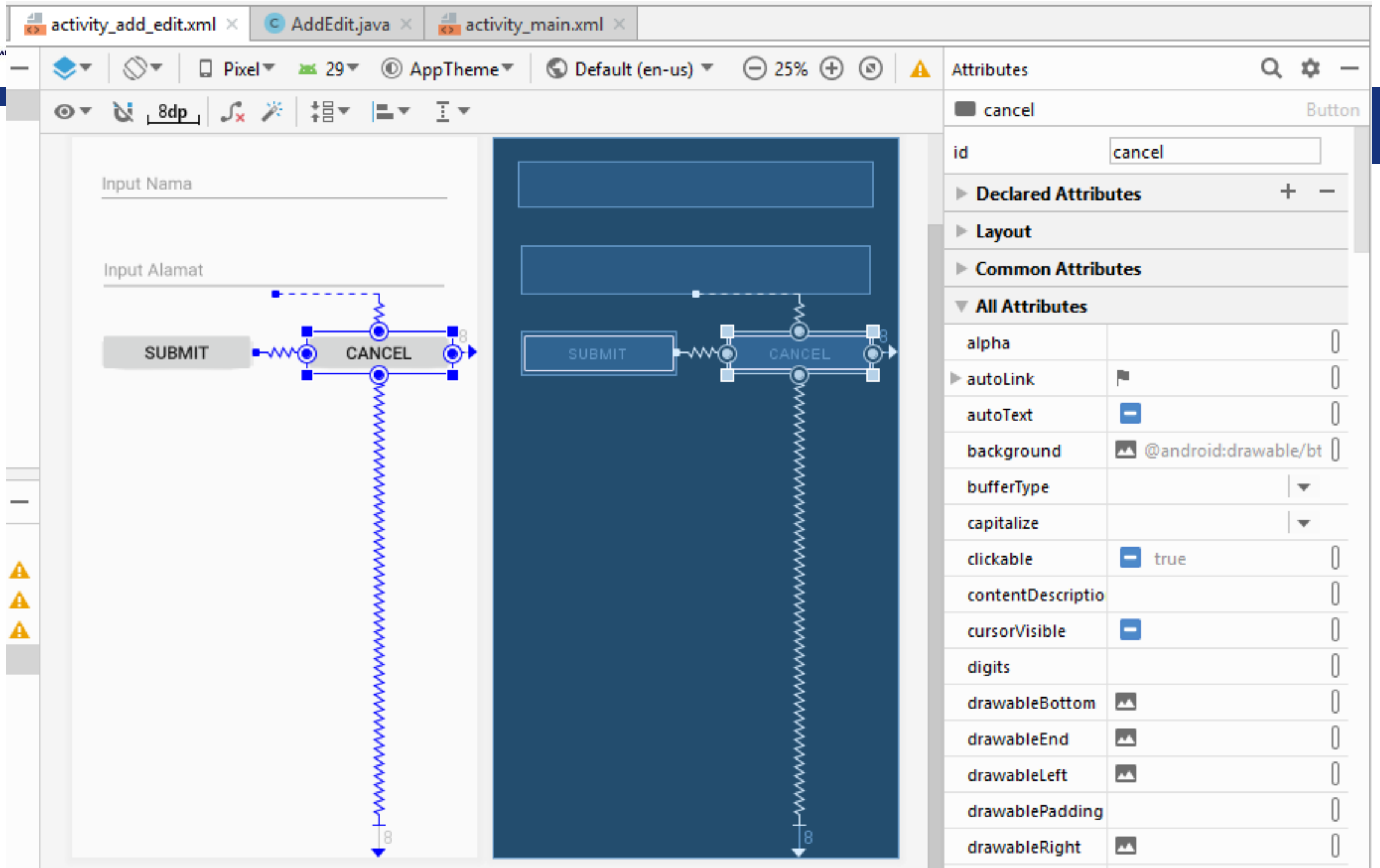
activity_add_edit.xml
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Button
id
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Declared Attributes
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alpha
autoLink
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@android:drawable/bt
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capitalize
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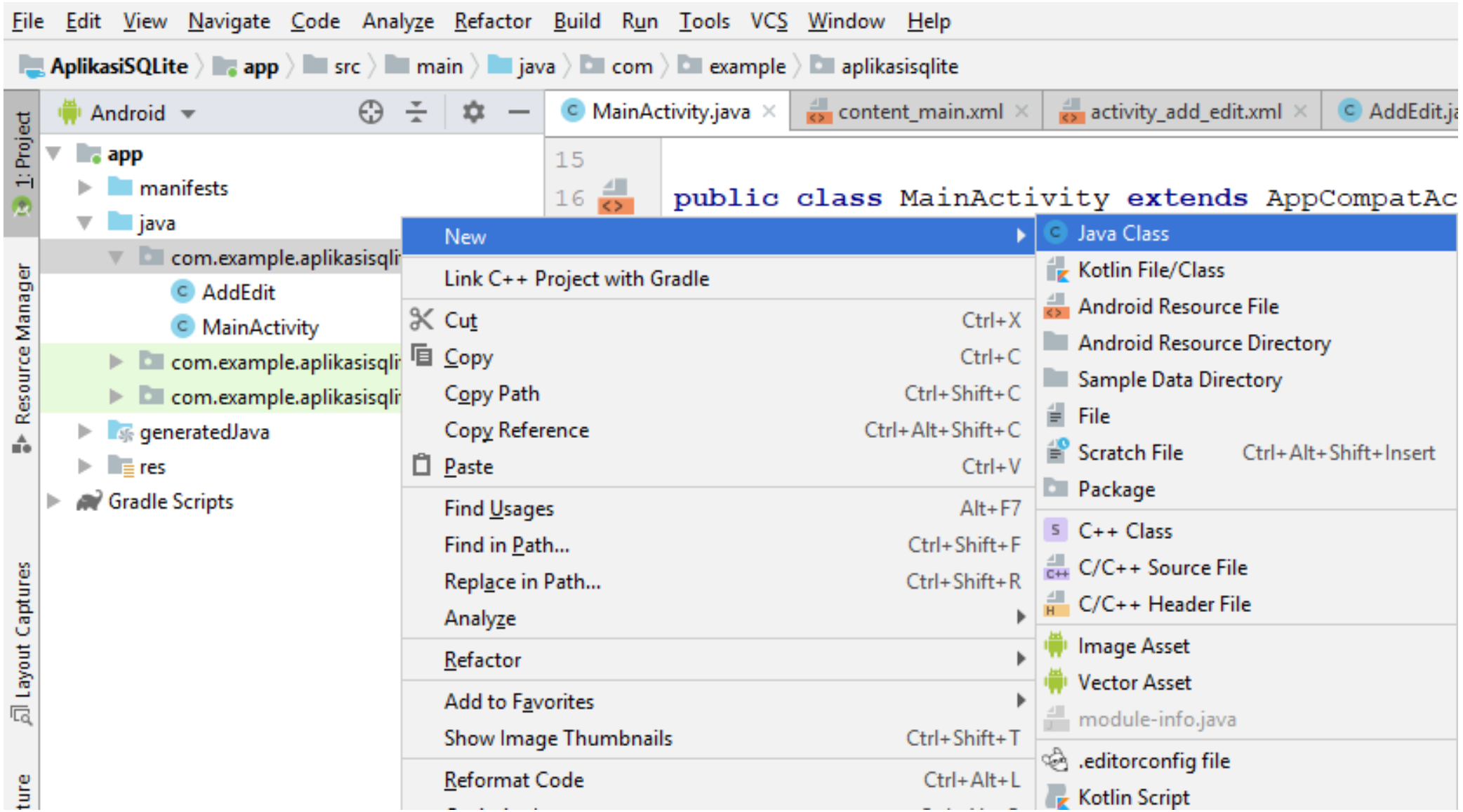
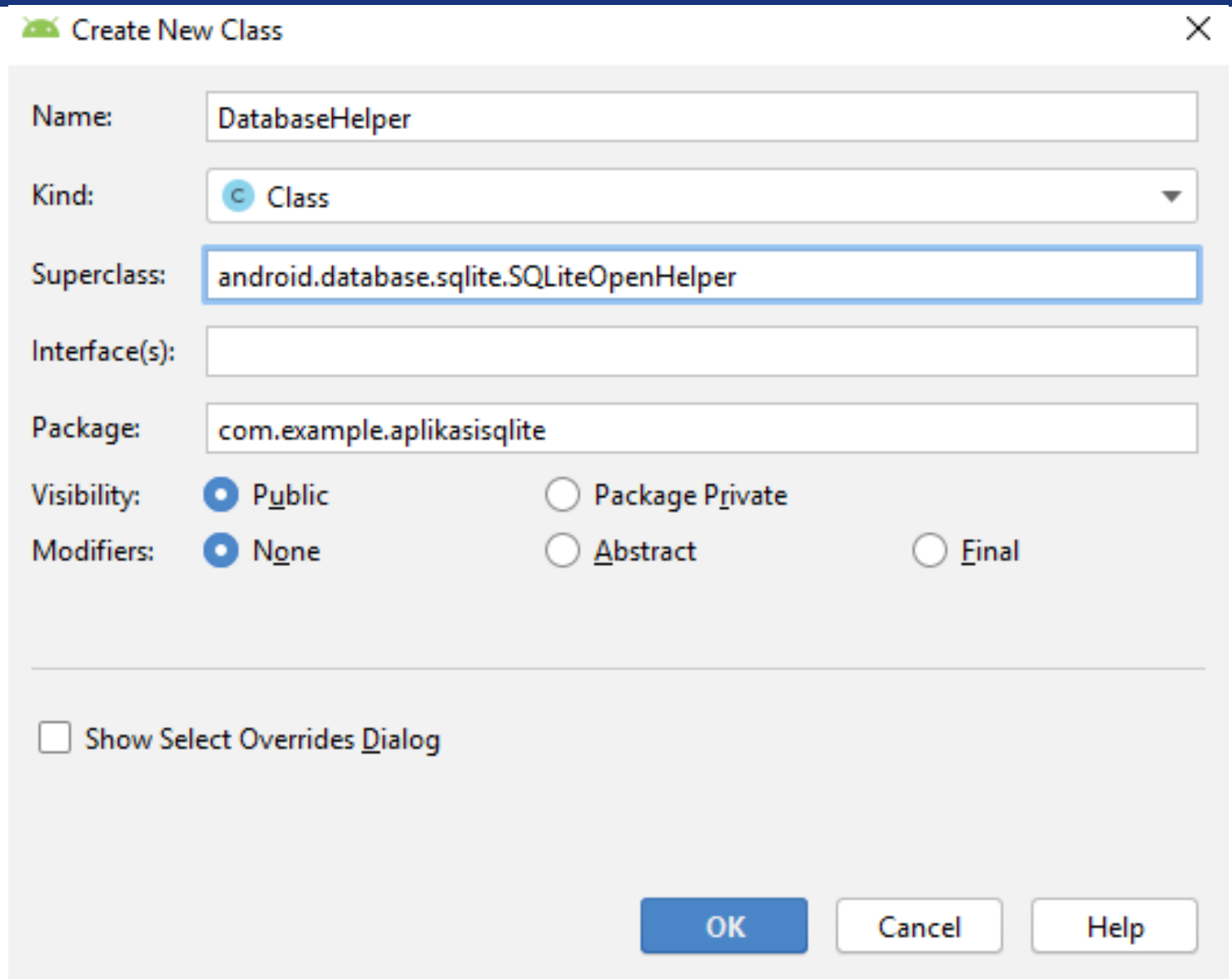
contentDescriptio
cursorVisible
digits
drawableBottom
drawableEnd
drawableLeft
drawablePadding
drawableRight

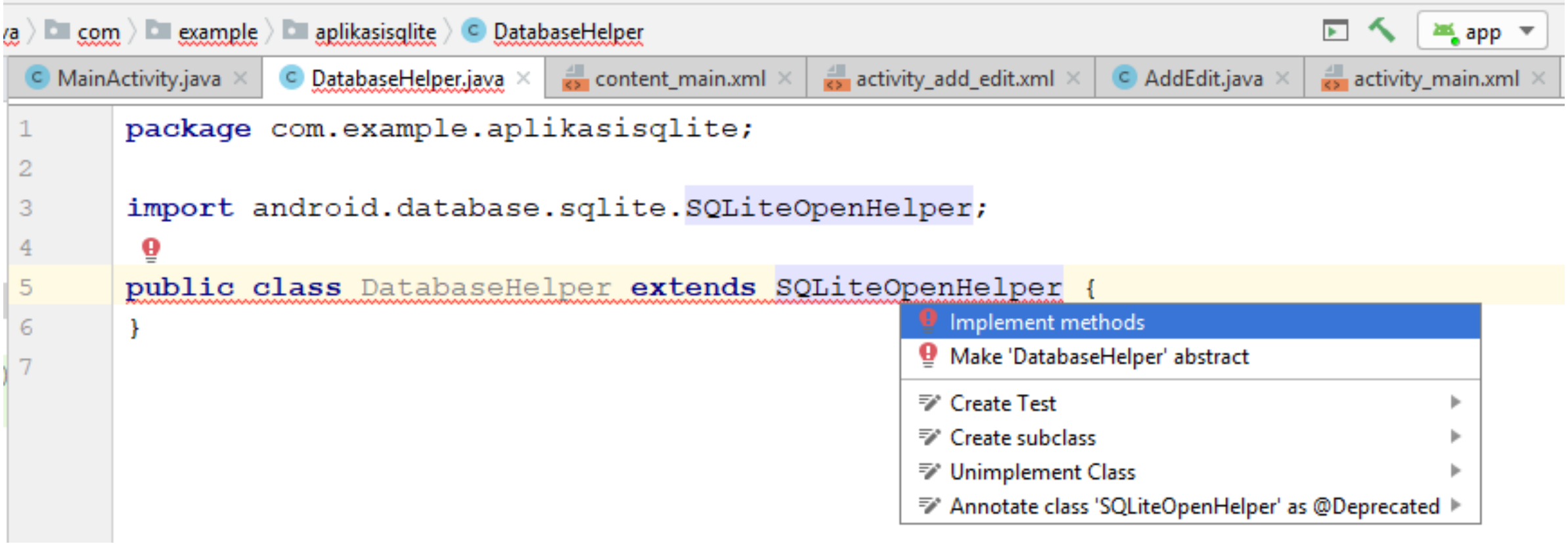
Aplikasi Database SQLite



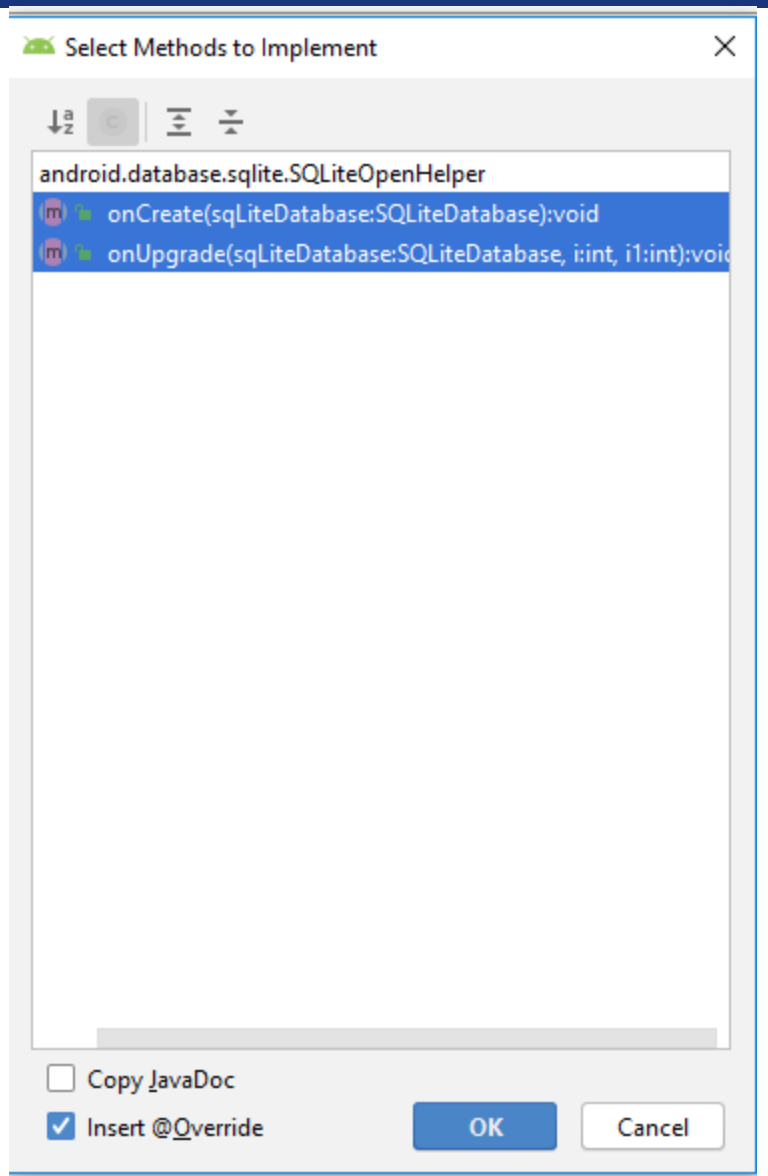
Aplikasi Database SQLite



Aplikasi Database SQLite



Aplikasi Database SQLite



Aplikasi Database SQLite

example > aplikasisqlite > DatabaseHelper

ctivity.java | DatabaseHelper.java | content_main.xml | activity_add_edit.xml | AddEdit.java | activity_mai

```
package com.example.aplikasisqlite;

import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class DatabaseHelper extends SQLiteOpenHelper {
    @Override
    public void onCreate(SQLiteDatabase sqLiteDatabase) {

    }

    @Override
    public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {

    }
}
```

Aplikasi Database SQLite

```
public class DatabaseHelper extends SQLiteOpenHelper {

    public static final String DATABASE_NAME = "digitaltalent.db";
    private static final int DATABASE_VERSION = 2;
    private static final String TABLE_CONTACT = "contact";
    private static final String COLUMN_ID = "id";
    private static final String COLUMN_NAME = "name";
    private static final String COLUMN_ADDRESS = "address";

    private static final String CREATE_TABLE_CONTACT = "CREATE TABLE " + TABLE_CONTACT + "(" +
            COLUMN_ID + " INTEGER PRIMARY KEY AUTOINCREMENT," +
            COLUMN_NAME + " TEXT," +
            COLUMN_ADDRESS + " TEXT);";
```

Aplikasi Database SQLite

```
public DatabaseHelper(Context context){
    super(context, DATABASE_NAME, factory: null, DATABASE_VERSION);
    Log.d( tag: "table", CREATE_TABLE_CONTACT);
}

@Override
public void onCreate(SQLiteDatabase sqLiteDatabase) {
    sqLiteDatabase.execSQL(CREATE_TABLE_CONTACT);
}

@Override
public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {
    sqLiteDatabase.execSQL("DROP TABLE IF EXISTS '" + TABLE_CONTACT + "'");
    onCreate(sqLiteDatabase);
}
```

```java
public ArrayList<HashMap<String, String>> getAllData(){
    ArrayList<HashMap<String, String>> contactList;
    contactList = new ArrayList<HashMap<String, String>>();
    String selectQuery = "SELECT * FROM " + TABLE_CONTACT;
    SQLiteDatabase sqLiteDatabase = this.getWritableDatabase();
    Cursor cursor = sqLiteDatabase.rawQuery(selectQuery,  selectionArgs: null);

    if(cursor.moveToFirst()){
        do{
            HashMap<String, String> map = new HashMap<String, String>();
            map.put(COLUMN_ID, cursor.getString( i: 0));
            map.put(COLUMN_NAME, cursor.getString( i: 1));
            map.put(COLUMN_ADDRESS, cursor.getString( i: 2));
            contactList.add(map);
        }while (cursor.moveToNext());
    }
    Log.e( tag: "select contact ",  msg: "" + contactList);
    sqLiteDatabase.close();
    return contactList;
}
```

Aplikasi Database SQLite

```
public void insert(String name, String address){
    SQLiteDatabase sqLiteDatabase = this.getWritableDatabase();
    String insertQuery = "INSERT INTO " + TABLE_CONTACT + " (name, address) " +
            "VALUES ('" + name + "', '"+ address + "')";
    Log.e( tag: "insert contact ", msg: "" + insertQuery);
    sqLiteDatabase.execSQL(insertQuery);
    sqLiteDatabase.close();
}
```

Aplikasi Database SQLite

```
public void update(int id, String name, String address){
    SQLiteDatabase sqLiteDatabase = this.getWritableDatabase();
    String updateQuery = "UPDATE " + TABLE_CONTACT + " SET " +
            COLUMN_NAME + "='" + name + "', " +
            COLUMN_ADDRESS + "='" + address + "'" +
            " WHERE " + COLUMN_ID + "=" + "'" + id + "'";
    Log.e( tag: "insert contact ",  msg: "" + updateQuery);
    sqLiteDatabase.execSQL(updateQuery);
    sqLiteDatabase.close();
}
```

Aplikasi Database SQLite

```
public void delete(int id){
    SQLiteDatabase sqLiteDatabase = this.getWritableDatabase();
    String deleteQuery = "DELETE FROM " + TABLE_CONTACT + " WHERE " +
            COLUMN_ID + "=" + "'" + id + "'";
    sqLiteDatabase.execSQL(deleteQuery);
    sqLiteDatabase.close();
}
```

MainActivity.java | DatabaseHelper.java | content_main.xml | activity_add_edit.xml | AddEdit.java

```java
package com.example.aplikasisqlite;

import ...

public class AddEdit extends AppCompatActivity {

    private EditText inputName;
    private EditText inputAddress;
    private DatabaseHelper databaseHelper;
    private ArrayList<String> arrayList;

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

Aplikasi Database SQLite

```
public void submit(View view) {
    inputName = findViewById(R.id.inputNama);
    inputAddress = findViewById(R.id.inputAlamat);
    databaseHelper = new DatabaseHelper( context: this);
    databaseHelper.insert(inputName.getText().toString(),
            inputAddress.getText().toString());
    inputName.setText("");
    inputAddress.setText("");
    Toast.makeText( context: AddEdit.this,  text: "Berhasil Disimpan!",
            Toast.LENGTH_SHORT).show();
}
```

MainActivity.java | DatabaseHelper.java | content_main.xml | activity_add_edit.xml | Add

```
1   package com.example.aplikasisqlite;
2
3   import ...
26
27  public class MainActivity extends AppCompatActivity {
28
29      private ListView listView;
30      DatabaseHelper databaseHelper;
31      ArrayList<HashMap<String, String>> row;
32      AlertDialog.Builder dialog;
33      public static  final String TAG_ID = "id";
34      public static  final String TAG_NAME = "name";
35      public static  final String TAG_ADDRESS = "address";
36
```

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Toolbar toolbar = findViewById(R.id.toolbar);
    setSupportActionBar(toolbar);

    FloatingActionButton fab = findViewById(R.id.fab);
    fab.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Snackbar.make(view, "Replace with your own action", Snackbar.LENGTH_LONG)
                    .setAction("Action", null).show();
            Intent intent = new Intent( packageContext: MainActivity.this, AddEdit.class);
            startActivity(intent);
        }
    });

    getSupportActionBar().setTitle("Daftar Kontak");
```

Aplikasi Database SQLite

```
private void getAllData(){
    listView = findViewById(R.id.contactList);

    databaseHelper = new DatabaseHelper(getApplicationContext());
    row = databaseHelper.getAllData();

    SimpleAdapter simpleAdapter = new SimpleAdapter( context: this, row,
            android.R.layout.simple_list_item_2, new String[]{TAG_NAME, TAG_ADDRESS},
            new int[]{android.R.id.text1, android.R.id.text2});
    listView.setAdapter(simpleAdapter);
    simpleAdapter.notifyDataSetChanged();
}
```

```java
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Toolbar toolbar = findViewById(R.id.toolbar);
    setSupportActionBar(toolbar);

    FloatingActionButton fab = findViewById(R.id.fab);
    fab.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Snackbar.make(view, "Replace with your own action", Snackbar.LENGTH_LONG)
                    .setAction("Action", null).show();
            Intent intent = new Intent( packageContext: MainActivity.this, AddEdit.class);
            startActivity(intent);
        }
    });

    getSupportActionBar().setTitle("Daftar Kontak");

    getAllData();
```

```
listView.setOnItemLongClickListener(new AdapterView.OnItemLongClickListener() {
    @Override
    public boolean onItemLongClick(AdapterView<?> adapterView, View view, int i, long l) {
        final String id = row.get(i).get(TAG_ID);
        final String name = row.get(i).get(TAG_NAME);
        final String address = row.get(i).get(TAG_ADDRESS);

        final CharSequence[] dialogitem = {"Edit", "Delete"};
        dialog = new AlertDialog.Builder( context: MainActivity.this);
        dialog.setCancelable(true);
        dialog.setItems(dialogitem, new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialogInterface, int i) {
                switch (i){
                    case 0:
                        Intent intent = new Intent( packageContext: MainActivity.this, AddEdit.class);
                        intent.putExtra(TAG_ID, id);
                        intent.putExtra(TAG_NAME, name);
                        intent.putExtra(TAG_ADDRESS, address);
                        startActivity(intent);
                        break;
                    case 1:
                        databaseHelper.delete(Integer.parseInt(id));
                        row.clear();
                        getAllData();
                        break;
```

```
            final CharSequence[] dialogitem = {"Edit", "Delete"};
            dialog = new AlertDialog.Builder( context: MainActivity.this);
            dialog.setCancelable(true);
            dialog.setItems(dialogitem, new DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialogInterface, int i) {
                    switch (i){
                        case 0:
                            Intent intent = new Intent( packageContext: MainActivity.this, AddEdit.class);
                            intent.putExtra(TAG_ID, id);
                            intent.putExtra(TAG_NAME, name);
                            intent.putExtra(TAG_ADDRESS, address);
                            startActivity(intent);
                            break;
                        case 1:
                            databaseHelper.delete(Integer.parseInt(id));
                            row.clear();
                            getAllData();
                            break;
                    }
                }
            }).show();
            return false;
        }
    });
    getAllData();
}
```

Aplikasi Database SQLite

```
@Override
protected void onResume() {
    super.onResume();
    row.clear();
    getAllData();
}
```

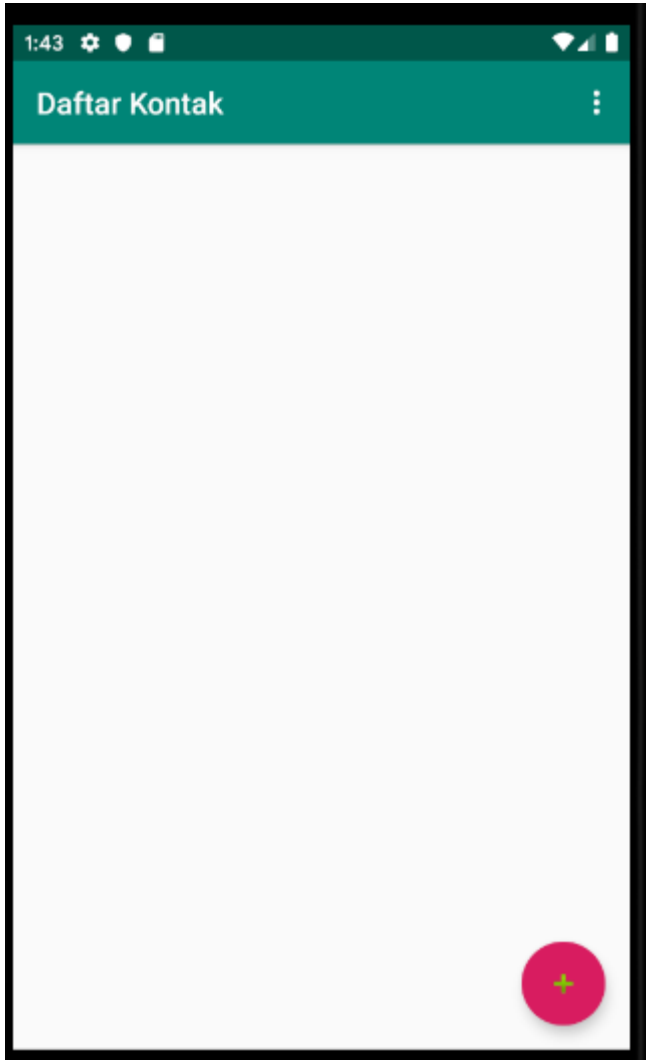
MainActivity.java | DatabaseHelper.java | content_main.xml | activity_add_edit.xml | AddEdit.java

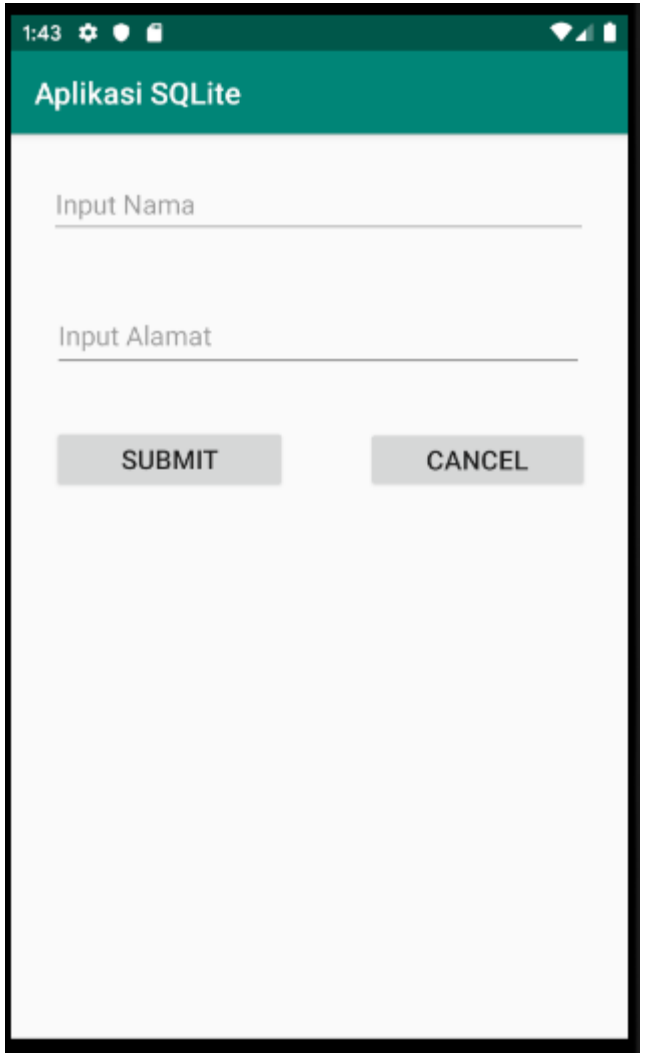
```java
package com.example.aplikasisqlite;

import ...

public class AddEdit extends AppCompatActivity {

    private EditText inputName;
    private EditText inputAddress;
    private DatabaseHelper databaseHelper;
    private ArrayList<String> arrayList;
    private String idExtra;
    private Bundle extras;
    public static  final String TAG_ID = "id";
    public static  final String TAG_NAME = "name";
    public static  final String TAG_ADDRESS = "address";
```

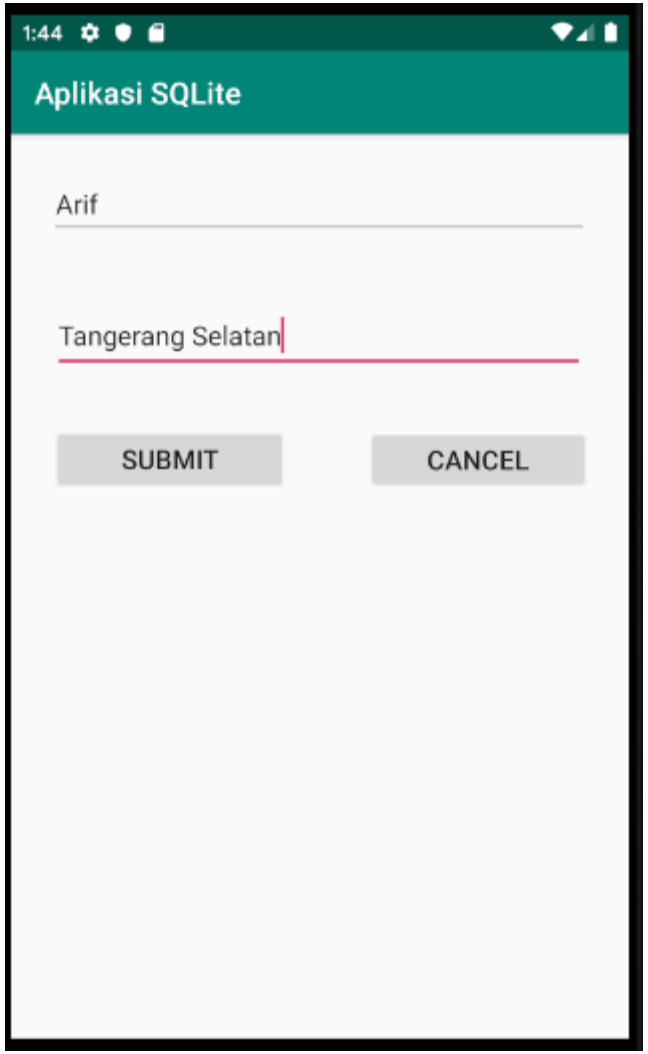
```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_add_edit);

    inputName = findViewById(R.id.inputNama);
    inputAddress = findViewById(R.id.inputAlamat);
    extras = getIntent().getExtras();

    if(extras != null){
        idExtra = extras.getString(TAG_ID);
        inputName.setText(extras.getString(TAG_NAME));
        inputAddress.setText(extras.getString(TAG_ADDRESS));
    }
}
```

```
public void submit(View view) {
    if(extras != null){
        databaseHelper = new DatabaseHelper( context: this);
        databaseHelper.update(Integer.parseInt(idExtra), inputName.getText().toString(),
                inputAddress.getText().toString());
        Toast.makeText( context: AddEdit.this, text: "Berhasil Diupdate!",
                Toast.LENGTH_SHORT).show();
    } else {
        inputName = findViewById(R.id.inputNama);
        inputAddress = findViewById(R.id.inputAlamat);
        databaseHelper = new DatabaseHelper( context: this);
        databaseHelper.insert(inputName.getText().toString(),
                inputAddress.getText().toString());
        inputName.setText("");
        inputAddress.setText("");
        Toast.makeText( context: AddEdit.this, text: "Berhasil Disimpan!",
                Toast.LENGTH_SHORT).show();
    }
}
```

Aplikasi Database SQLite



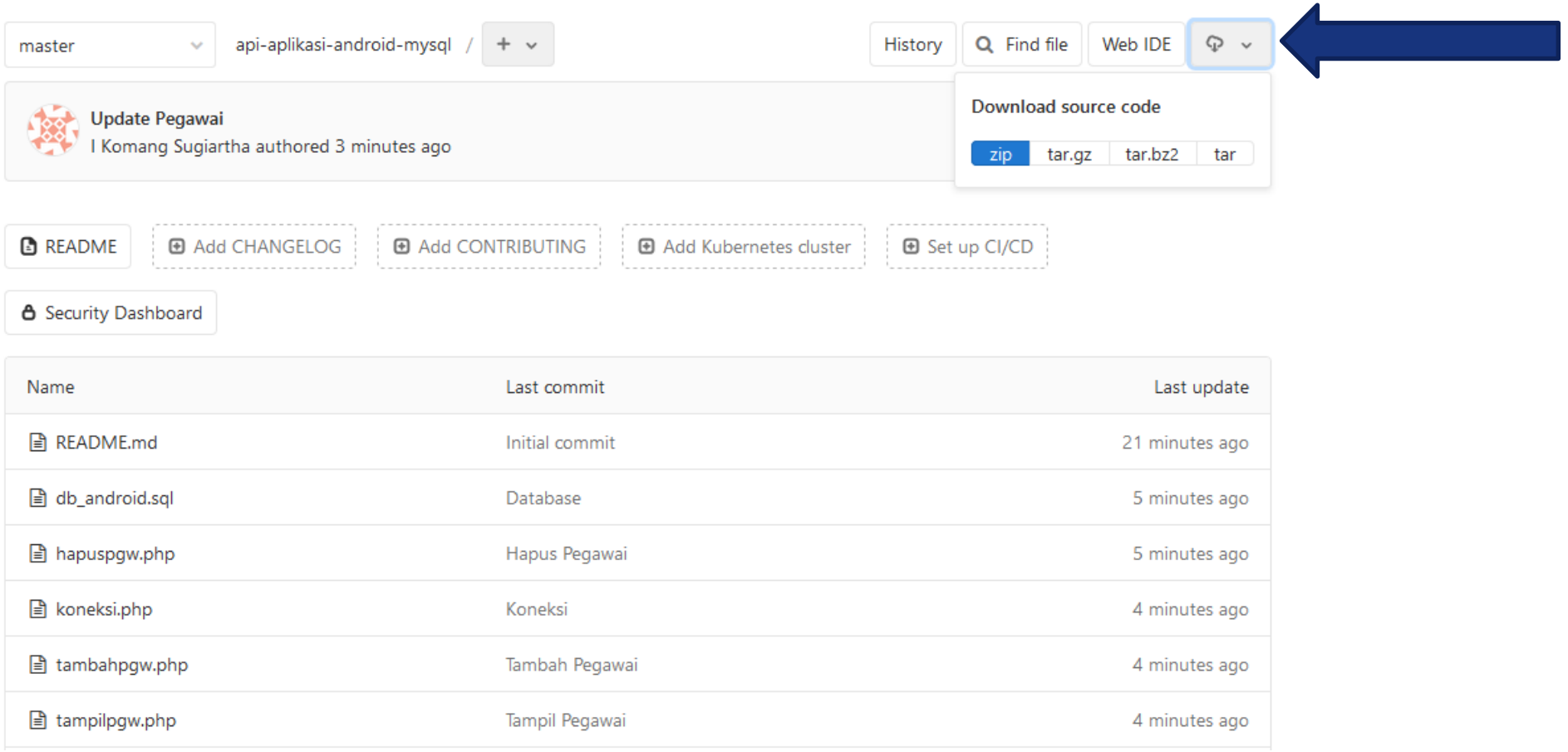




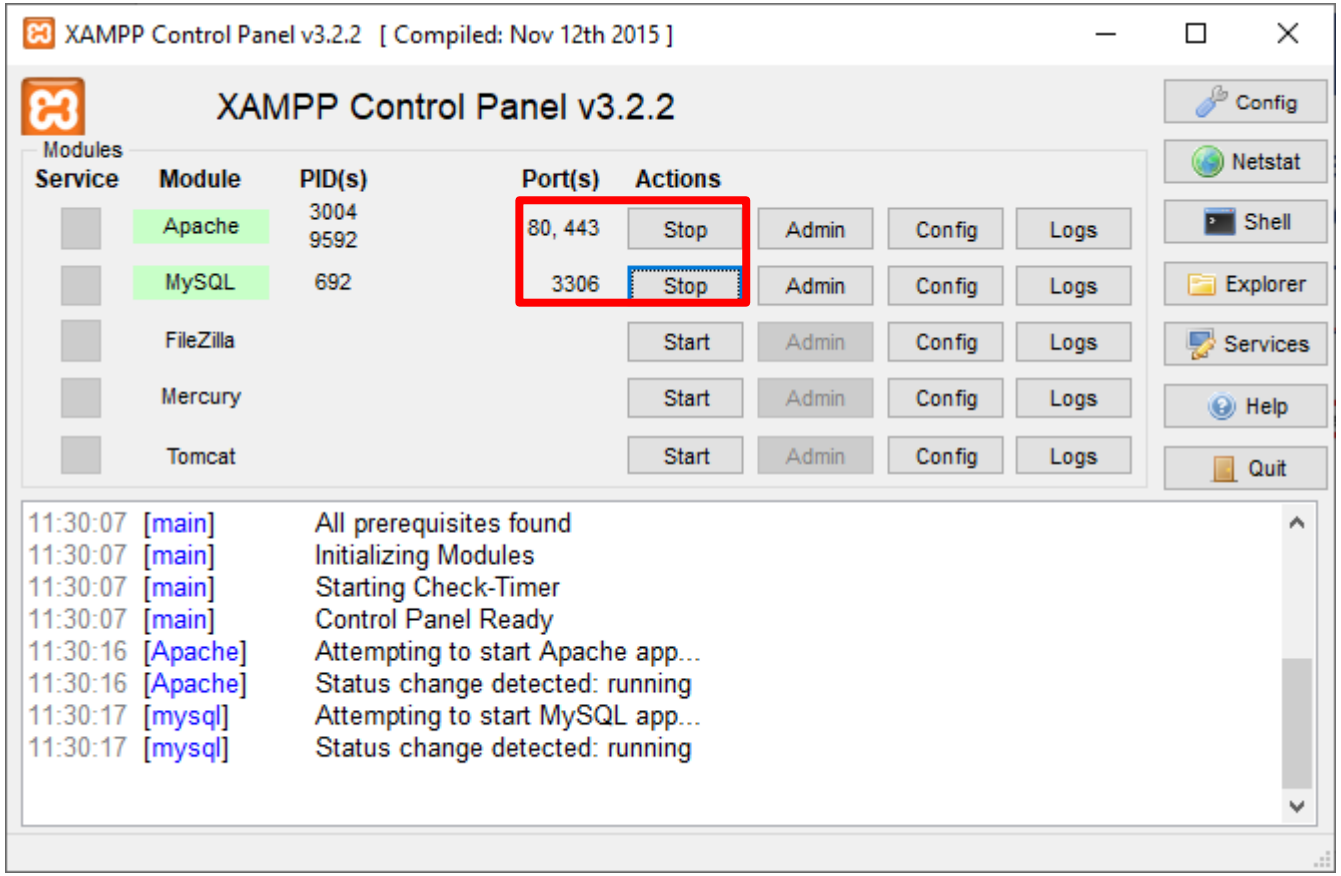
Aplikasi Database SQLite

Backend API Aplikasi Android

- Download backend API melalui link berikut : https://gitlab.com/sugiartha/api-aplikasi-android-mysql

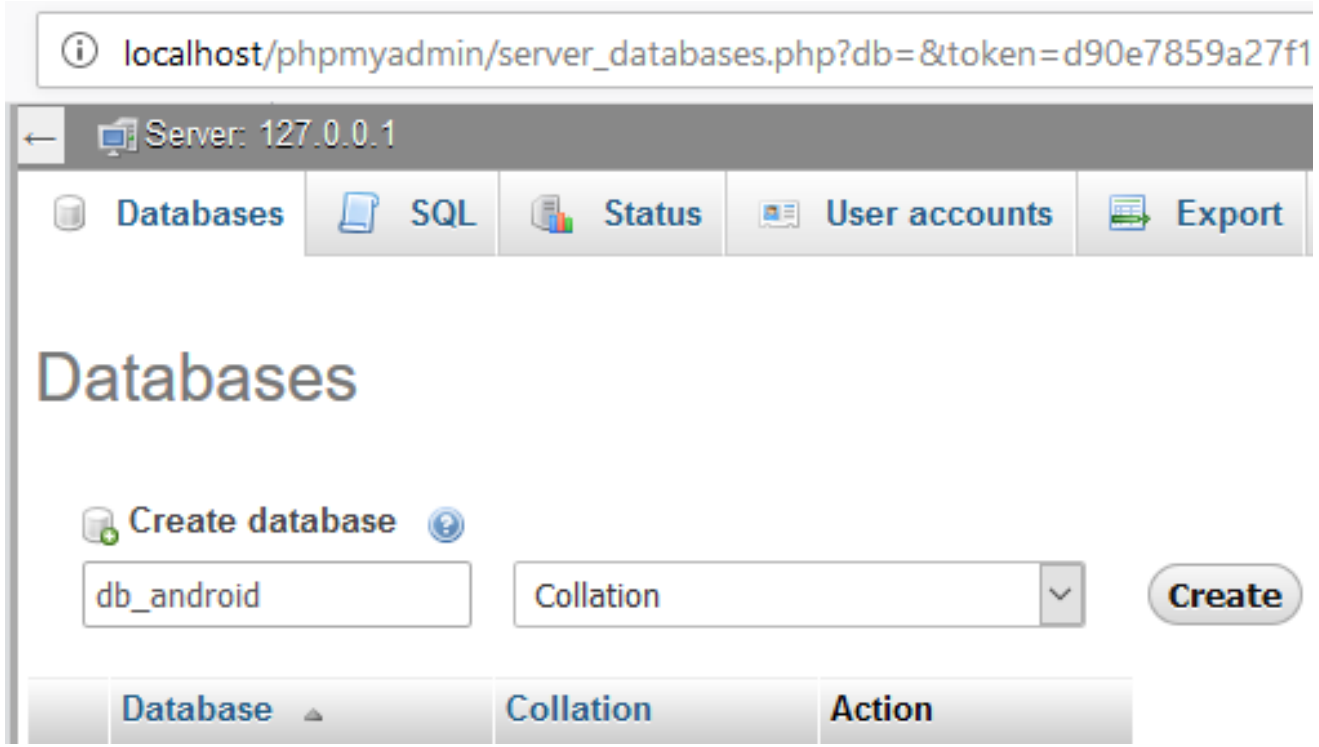


Backend API Aplikasi Android



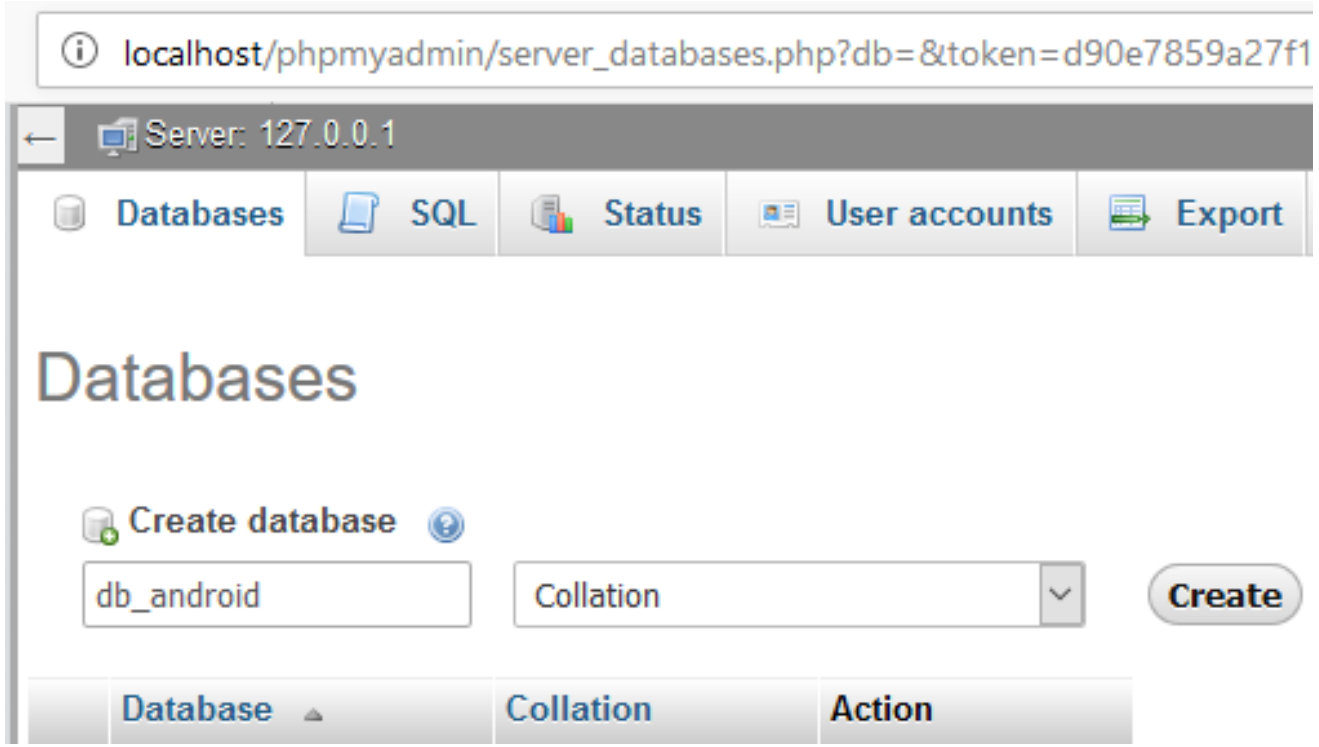
- Buka aplikasi XAMPP
- Start Apache dan MySQL

Backend API Aplikasi Android



- Buka web browser (Firefox. Chrome, dll)
- Ketik di URL : http://localhost/phpmyadmin
- Buat database dengan nama db_android

Backend API Aplikasi Android



- Buka web browser (Firefox. Chrome, dll)
- Ketik di URL : http://localhost/phpmyadmin
- Buat database dengan nama db_android
- Buka db_android kemudian import database yang ada di folder pegawai.

Backend API Aplikasi Android

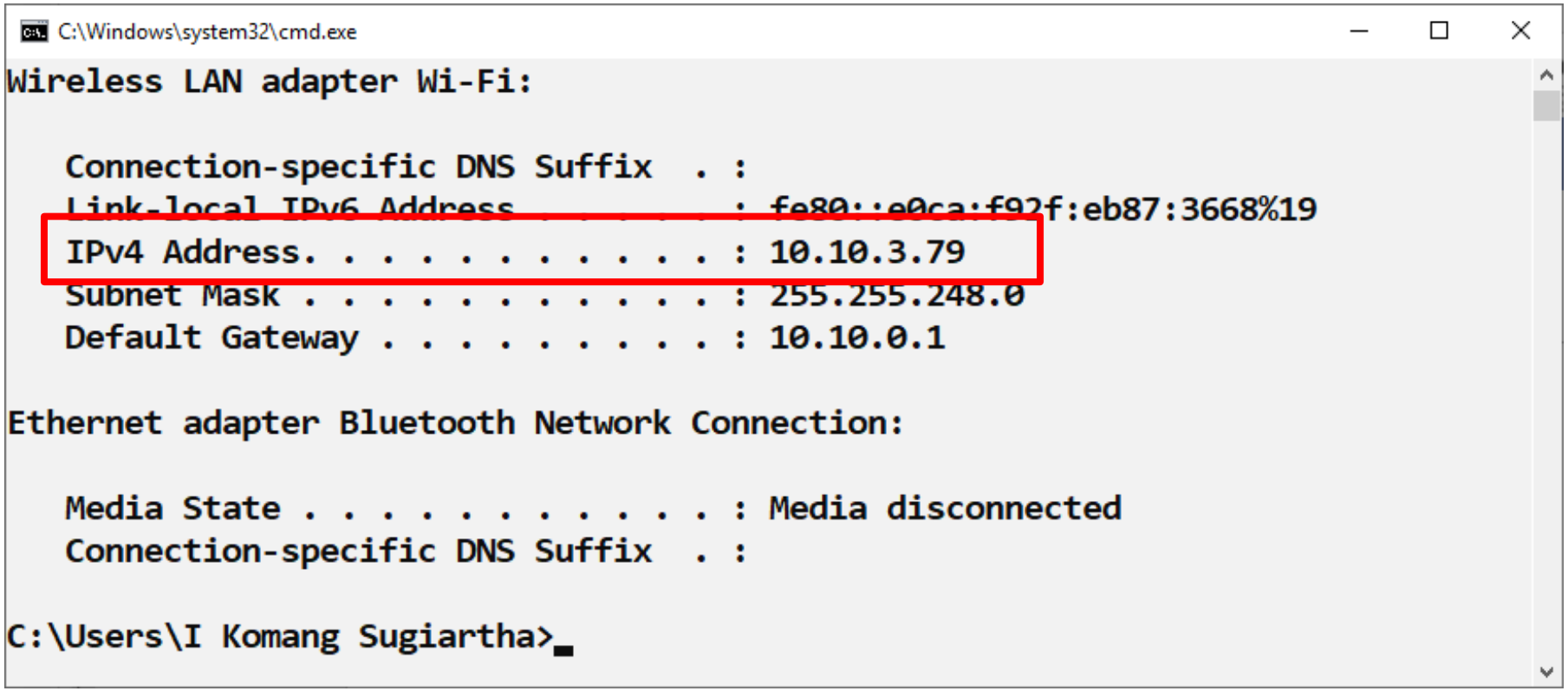
❖ Berikut cara pemanggilan API pada Aplikasi Android

```
public static final String URL_ADD="http://192.168.1.102/pegawai/tambahpgw.php";
public static final String URL_GET_ALL = "http://192.168.1.102/pegawai/tampilsemuapgw.php";
public static final String URL_GET_EMP = "http://192.168.1.102/pegawai/tampilpgw.php?id=";
public static final String URL_UPDATE_EMP = "http://192.168.1.102/pegawai/updatepgw.php";
public static final String URL_DELETE_EMP = "http://192.168.1.102/pegawai/hapuspgw.php?id=";
```

❖ IP disesuaikan dengan IP pada computer/laptop masing-masing peserta.

Backend API Aplikasi Android

❖ Cara mengecek IP dengan cara buka CMD dan ketik IPCONFIG



Kesimpulan Pertemuan

1. <Kesimpulan materi 1>
2. <Kesimpulan materi 2>
3. <Kesimpulan materi 3>
4. <dst>

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