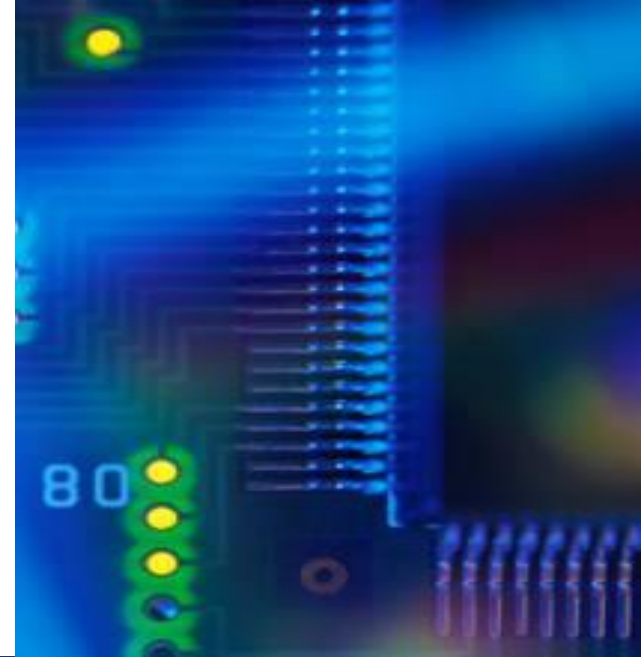




KEMENTERIAN KOMUNIKASI DAN INFORMATIKA  
REPUBLIK INDONESIA

*Menuju Masyarakat Informasi Indonesia*



## 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.

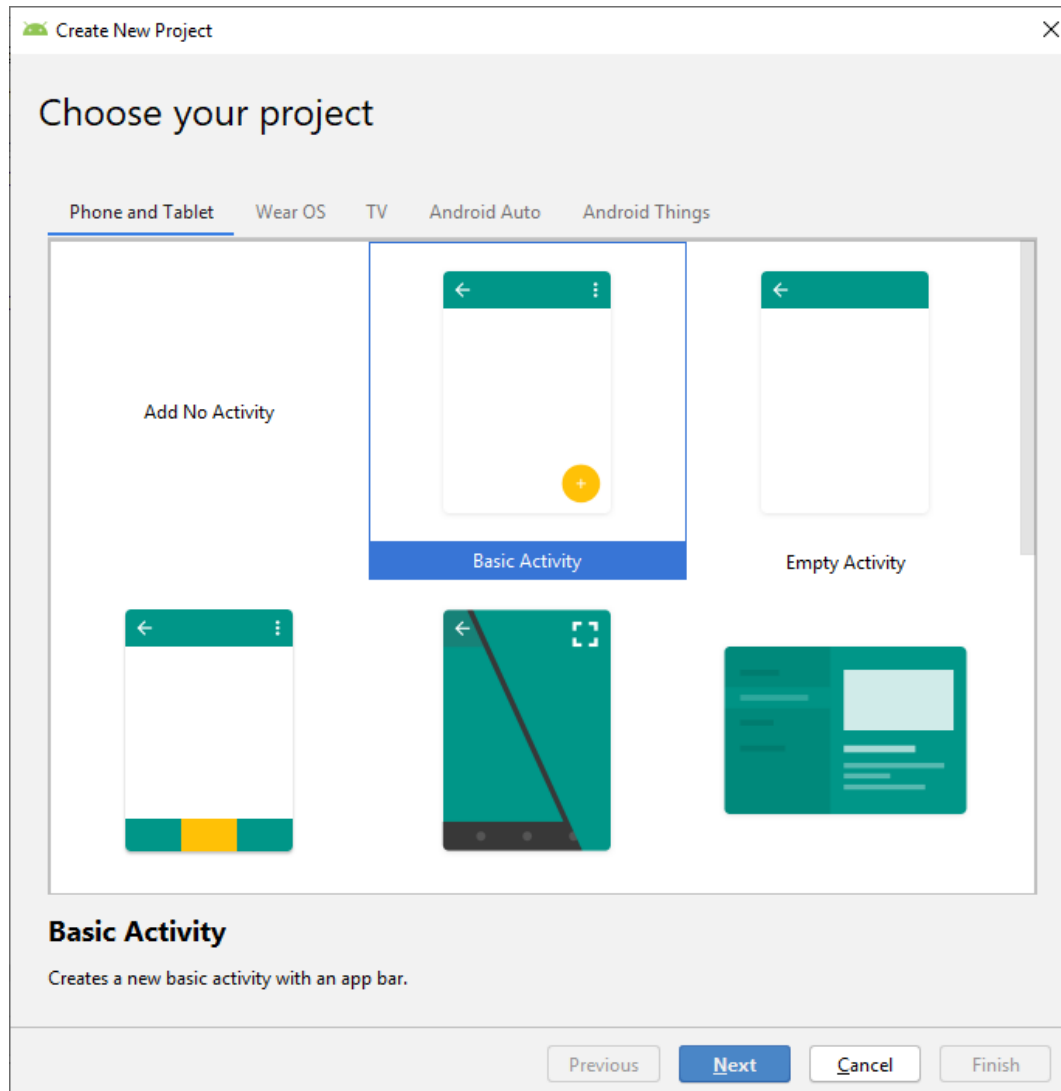
## Materi Yang akan disampaikan:

1. -

## Tugas :

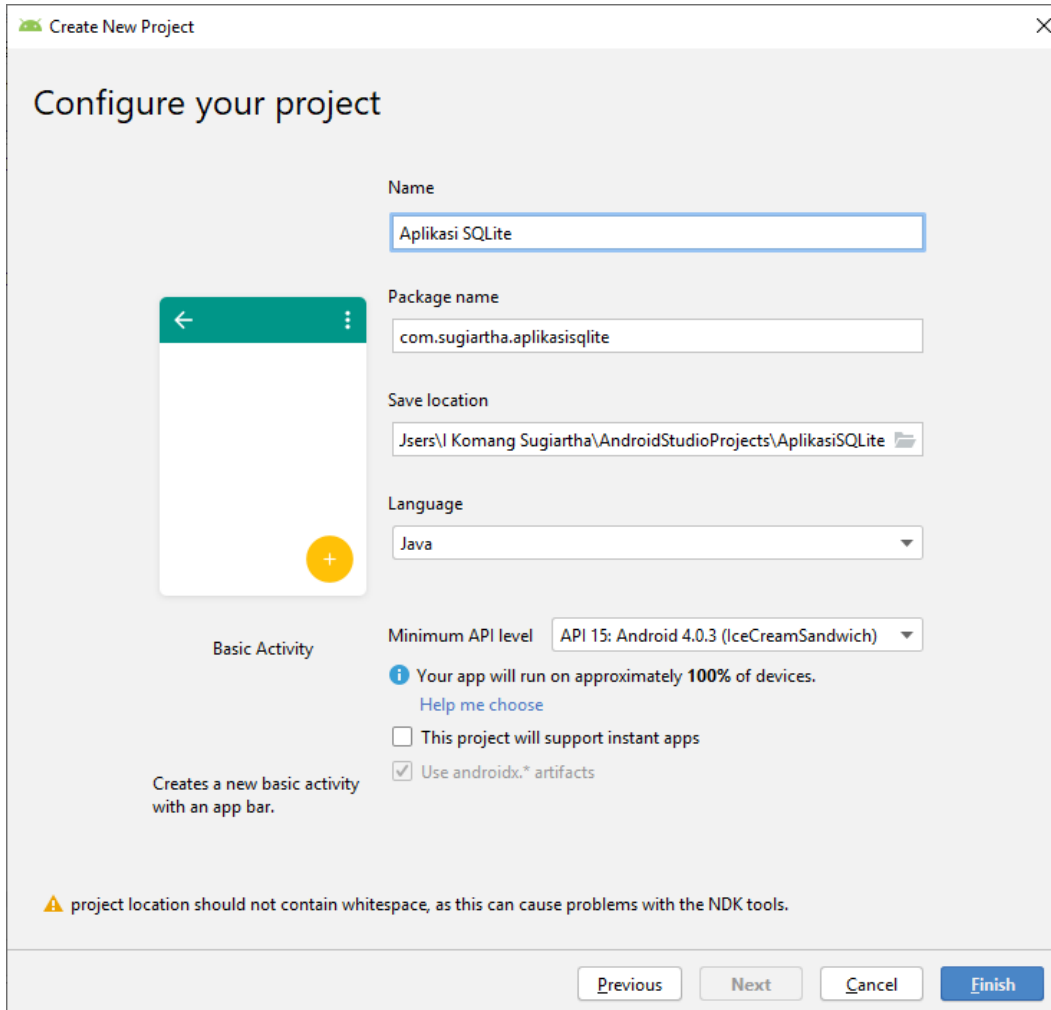
Membuat aplikasi database dengan backend menggunakan alat bantu yang telah diinstalasi sesuai dengan spesifikasi projek yang diberikan.

# Aplikasi Database SQLite



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

# Aplikasi Database SQLite



Create New Project

Configure your project

Name  
Aplikasi SQLite

Package name  
com.sugiartha.aplikasisqlite

Save location  
Jsers\I Komang Sugiartha\AndroidStudioProjects\AplikasiSQLite

Language  
Java

Minimum API level  
API 15: Android 4.0.3 (IceCreamSandwich)

*i* Your app will run on approximately **100%** of devices.  
[Help me choose](#)

☐ This project will support instant apps

☒ Use androidx.\* artifacts

**Basic Activity**  
Creates a new basic activity with an app bar.

**Warning:** project location should not contain whitespace, as this can cause problems with the NDK tools.

Previous Next Cancel Finish

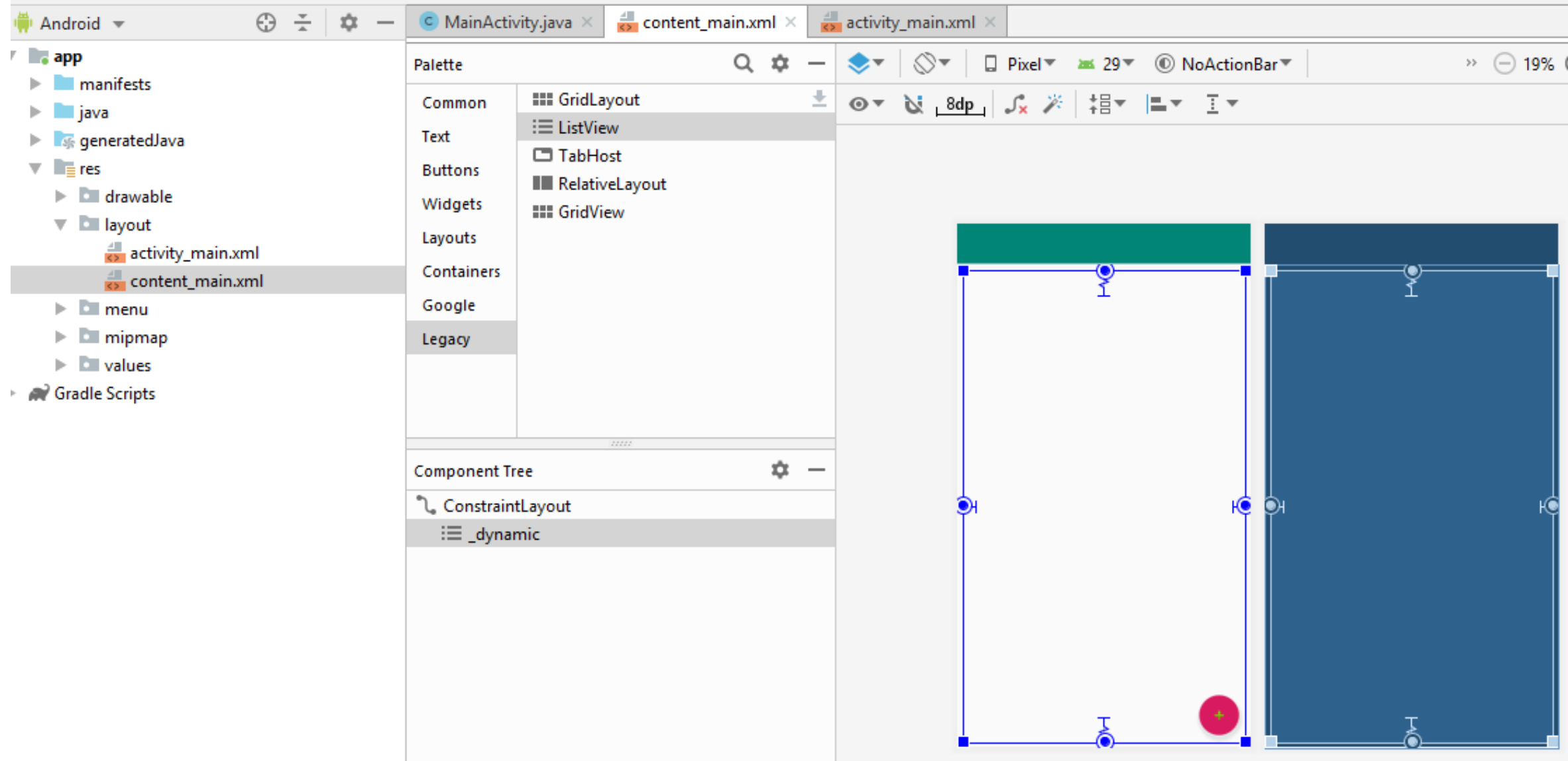
- ❖ Isi Name dengan nama Aplikasi SQLite
- ❖ Kolom yang lain biarkan secara default.
- ❖ Klik Finish

# 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 x activity\_add\_edit.xml x AddEdit.java x activity\_main.xml x

Pixel 29 NoActionBar Default (en-us) 25%

8dp

Attributes

<unnamed> ListView

id contactList

Declared Attributes + -

Layout

Common Attributes

All Attributes

addStatesFromChi	-	0
alpha		0
alwaysDrawnWith	-	0
animateLayoutCha	-	0
animationCache	-	0
background		0
cacheColorHint	@android:color/backg	0
choiceMode		
clickable	-	0
clipChildren	-	0
clipToPadding	-	0
contentDescriptio		0
descendantFocusa		
divider	@android:drawable/lis	0
dividerHeight		0
drawSelectorOnTo	-	0
drawingCacheQua		

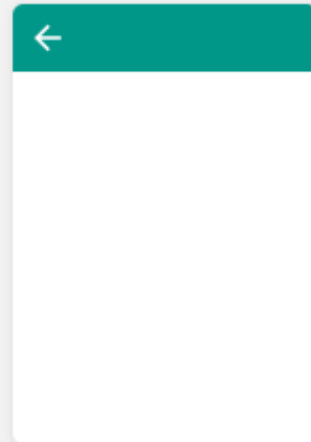


## Configure Activity

Android Studio



### Creates a new empty activity



Activity Name:

☒ Generate Layout File

Layout Name:

☐ Launcher Activity

Package name:

Source Language:

The name of the activity class to create

Previous

Next

Cancel

Finish



# 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

activity\_add\_edit.xml × AddEdit.java × activity\_main.xml ×

Pixel 29 AppTheme Default (en-us) 25%

8dp

Input Nama

Input Alamat

Attributes

Ab inputNama EditText

id inputNama

Declared Attributes

Layout

# Aplikasi Database SQLite

ivity\_add\_edit.xml x AddEdit.java x activity\_main.xml x

Pixel 29 AppTheme Default (en-us) 25%

8dp

Input Nama

Input Alamat

32

8

Attributes

inputAlamat EditText

id inputAlamat

Declared Attributes

Layout

32

8

8

50

layout\_width 354dp

layout\_height 49dp

activity\_add\_edit.xml x AddEdit.java x activity\_main.xml x

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

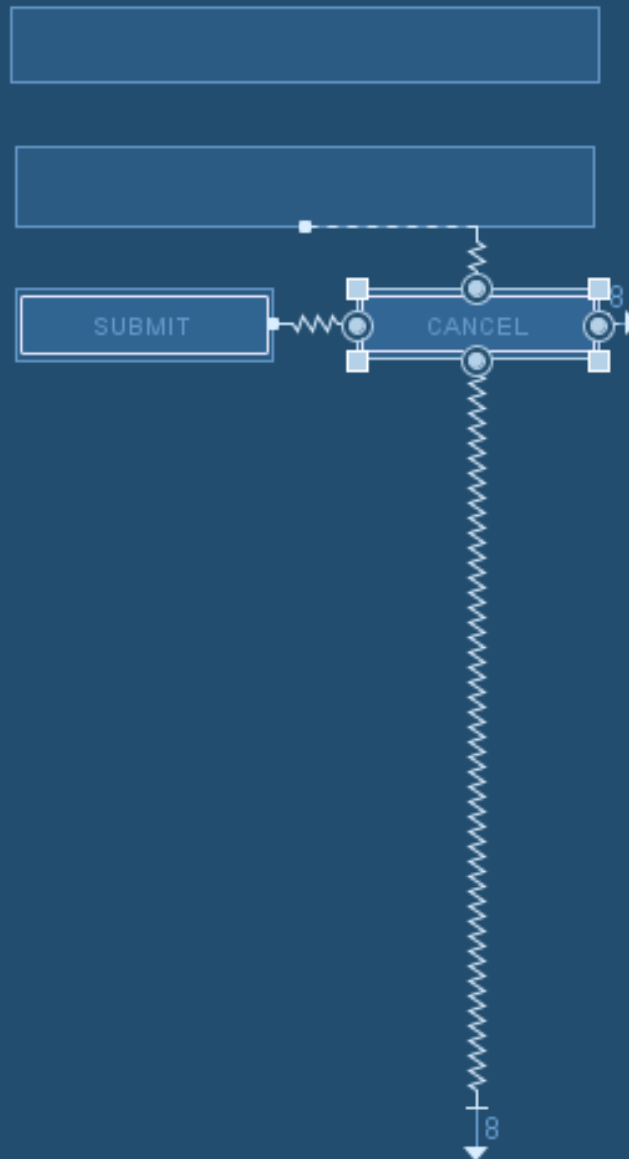
alpha		0
autoLink		0
autoText		0
background	@android:drawable/bt	0
bufferType		▼
capitalize		▼
clickable	true	0
contentDescription		0
cursorVisible		0
digits		0
drawableBottom		0
drawableEnd		0
drawableLeft		0
drawablePadding		0
drawableRight		0
drawableStart		0

Input Nama

Input Alamat

SUBMIT

CANCEL



Attributes

cancel

Button

id cancel

Declared Attributes

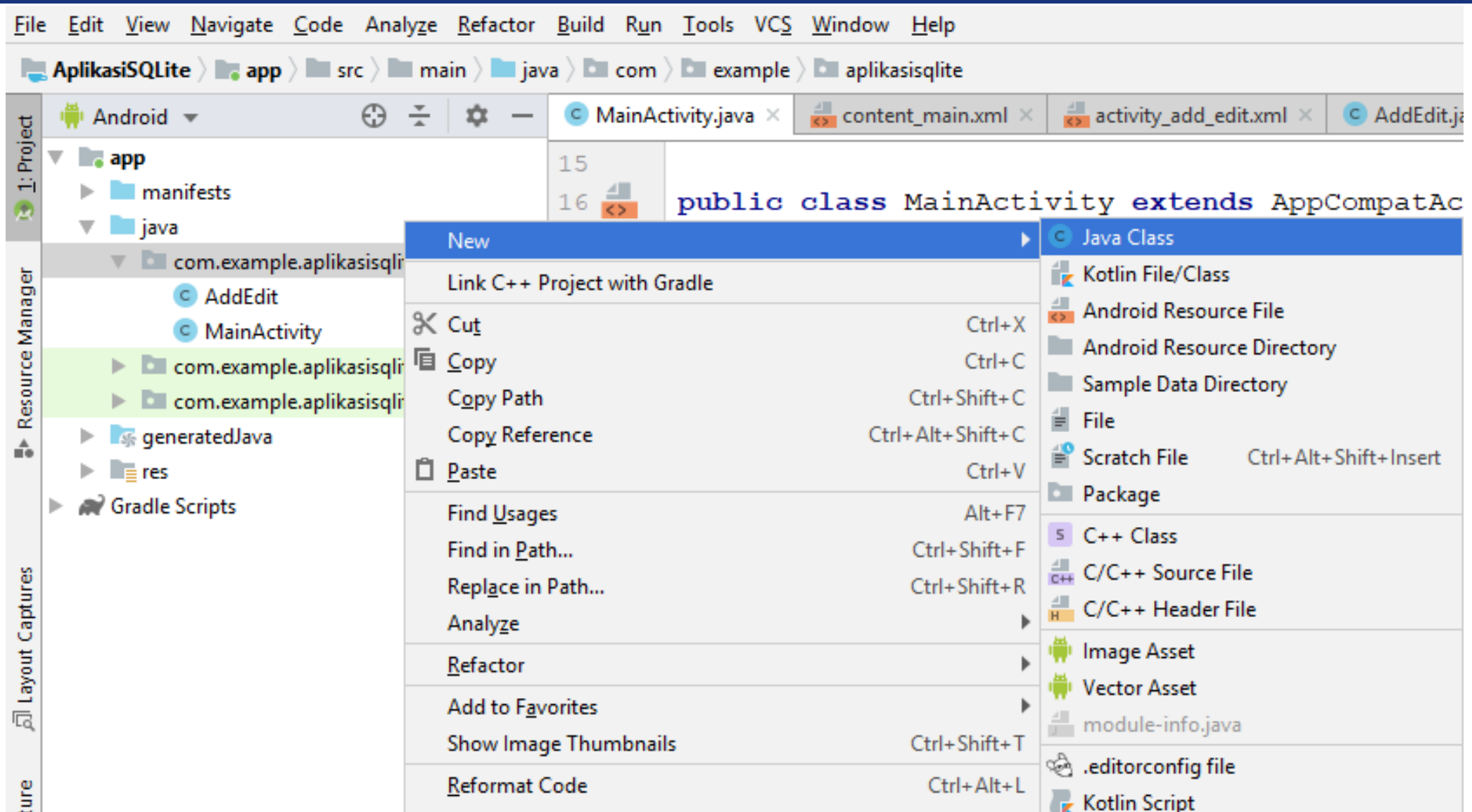
Layout

Common Attributes


All Attributes

alpha		0
autoLink		0
autoText		0
background	@android:drawable/bt	0
bufferType		0
capitalize		0
clickable	true	0
contentDescriptio		0
cursorVisible		0
digits		0
drawableBottom		0
drawableEnd		0
drawableLeft		0
drawablePadding		0
drawableRight		0

# Aplikasi Database SQLite




# Aplikasi Database SQLite

 Create New Class



Name: DatabaseHelper

Kind:  Class

Superclass: android.database.sqlite.SQLiteOpenHelper

Interface(s):

Package: com.example.aplikasisqlite

Visibility: ☒ Public

☐ Package Private

Modifiers: ☒ None

☐ Abstract

☐ Final

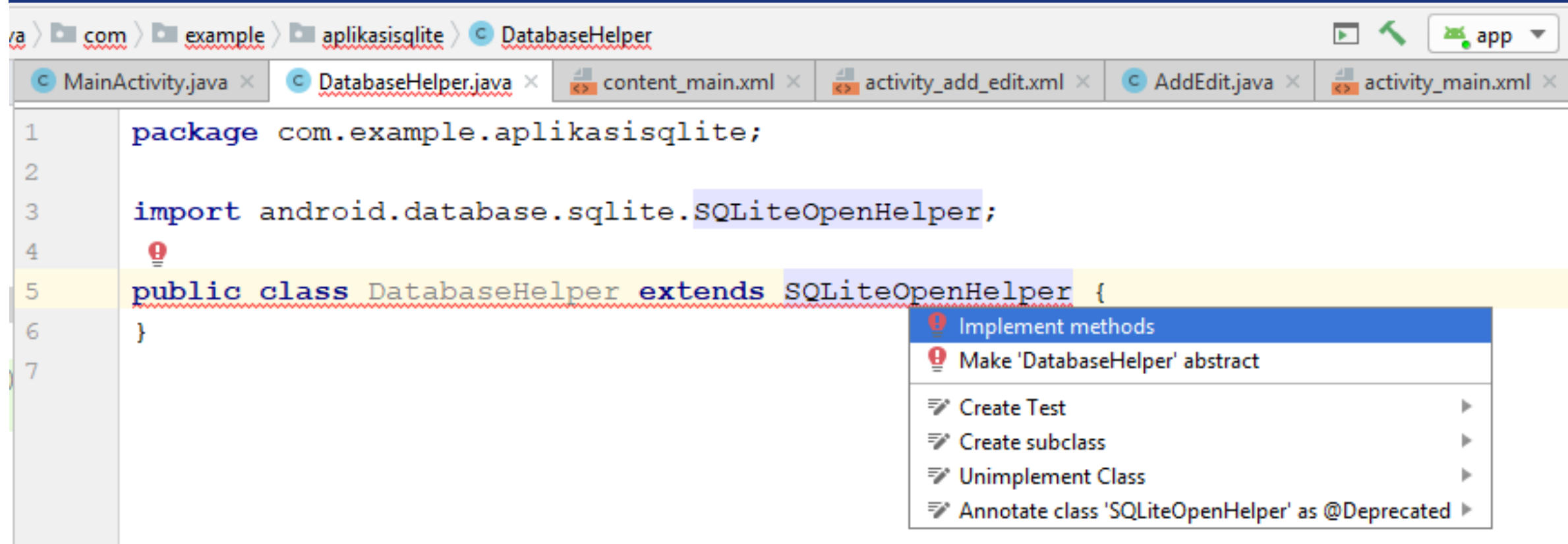
☐ Show Select Overrides Dialog

OK

Cancel

Help

# Aplikasi Database SQLite

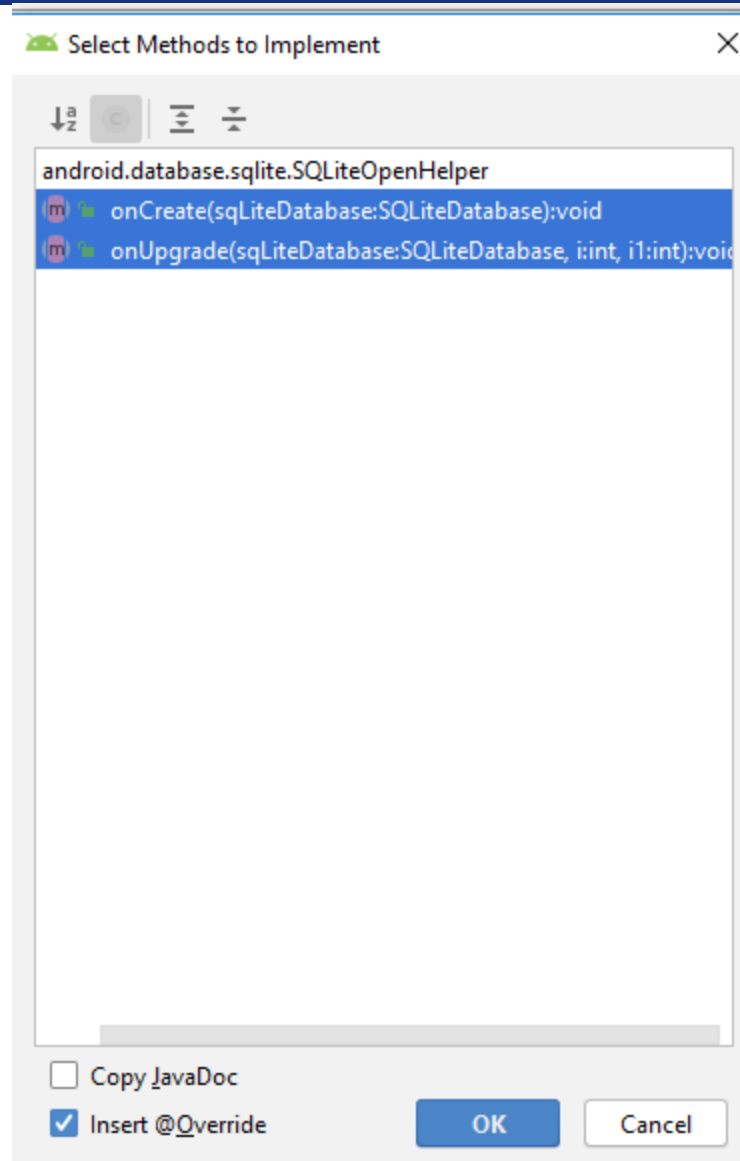


```
1 package com.example.aplikasisqlite;
2
3 import android.database.sqlite.SQLiteOpenHelper;
4
5 public class DatabaseHelper extends SQLiteOpenHelper {
6 }
7
```

- Implement methods
- Make 'DatabaseHelper' abstract
- Create Test
- Create subclass
- Unimplement Class
- Annotate class 'SQLiteOpenHelper' as @Deprecated



# Aplikasi Database SQLite



# Aplikasi Database SQLite



```
> example > aplikasisqlite > DatabaseHelper
activity.java x DatabaseHelper.java x content_main.xml x activity_add_edit.xml x AddEdit.java x 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 il) {

    }
}
```

# 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);  
}
```

```
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 x DatabaseHelper.java x content\_main.xml x activity\_add\_edit.xml x AddEdit.java x

```
1 package com.example.aplikasisqlite;
2
3 import ...
12
13 public class AddEdit extends AppCompatActivity {
14
15     private EditText inputName;
16     private EditText inputAddress;
17     private DatabaseHelper databaseHelper;
18     private ArrayList<String> arrayList;
19
20     @Override
21     protected void onCreate(Bundle savedInstanceState) {
22         super.onCreate(savedInstanceState);
23         setContentView(R.layout.activity_add_edit);
24     }
```

# 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();  
}
```

`@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.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
    @Override  
    public boolean onItemClick(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();  
}
```

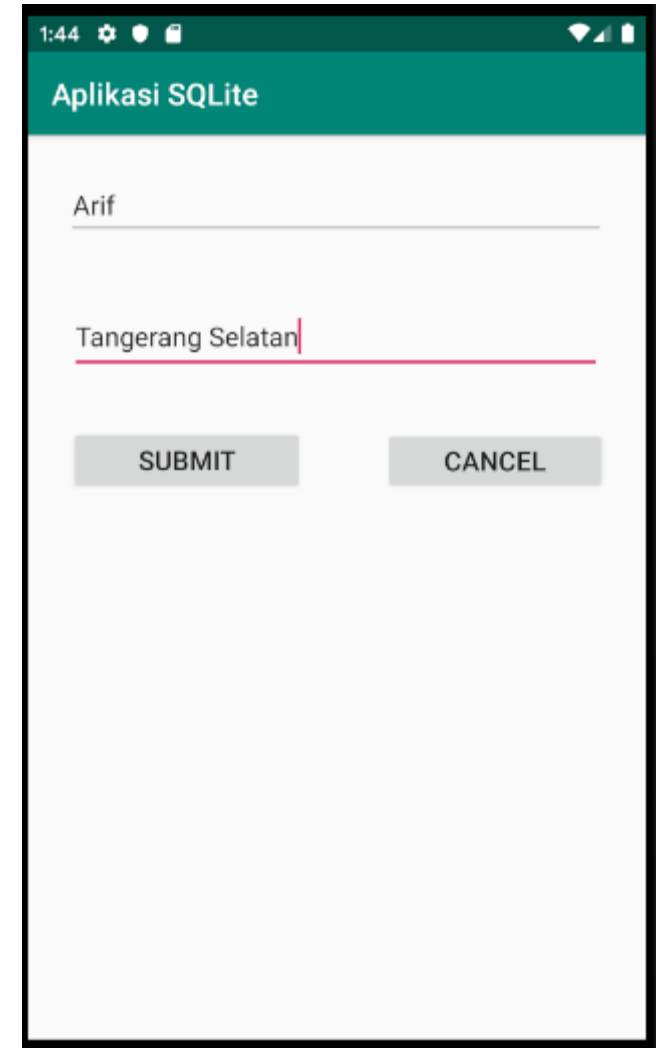
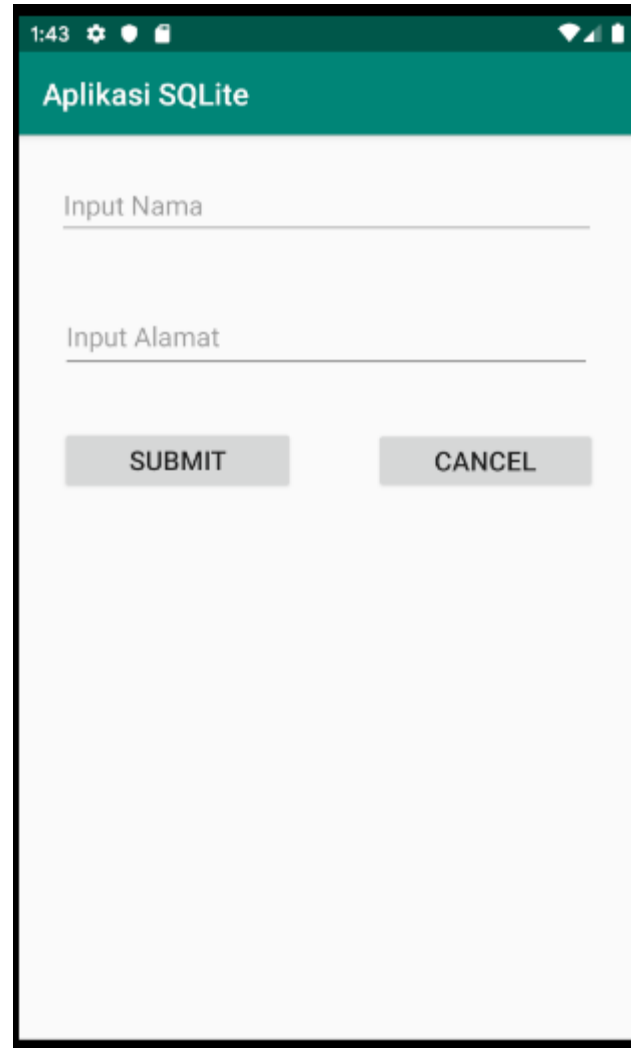
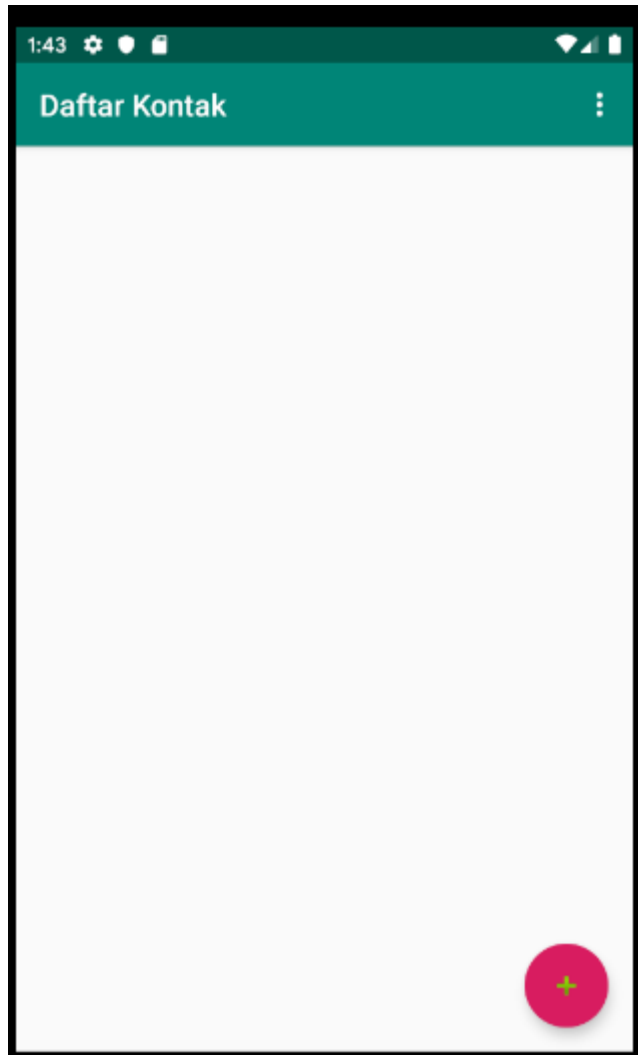
```
1 package com.example.aplikasisqlite;
2
3 import ...
4
12
13 public class AddEdit extends AppCompatActivity {
14
15     private EditText inputName;
16     private EditText inputAddress;
17     private DatabaseHelper databaseHelper;
18     private ArrayList<String> arrayList;
19     private String idExtra;
20     private Bundle extras;
21     public static final String TAG_ID = "id";
22     public static final String TAG_NAME = "name";
23     public static final String TAG_ADDRESS = "address";
24 }
```

@Override

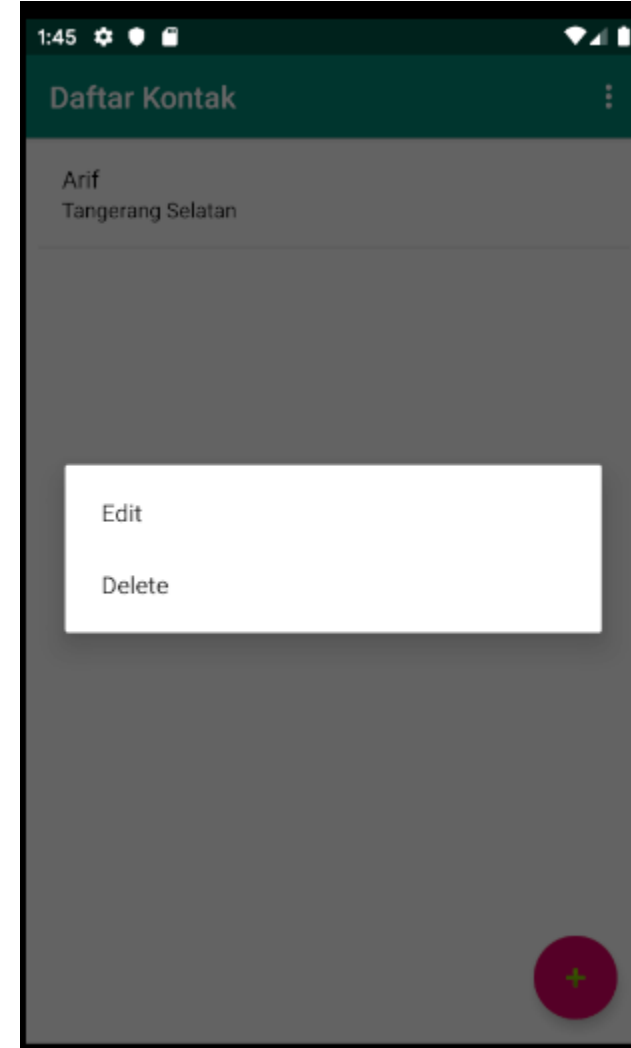
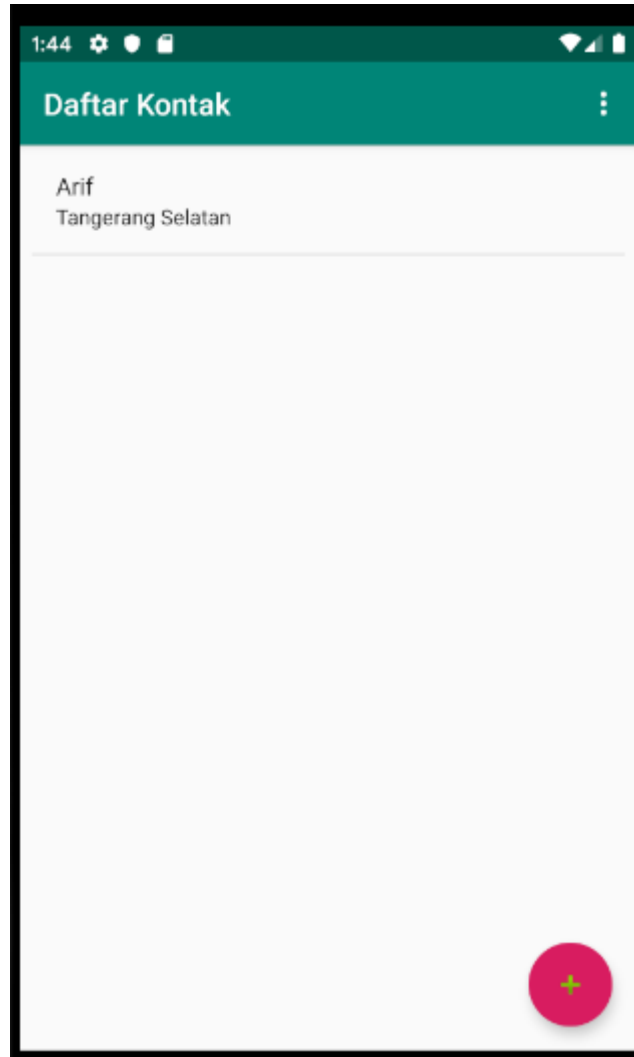
```
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_add_edit);  
  
    inputName = findViewById(R.id.inputNama);  
    inputAddress = findViewById(R.id.inputAlamat);  
    extras = getIntent().getExtras();  
  
    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

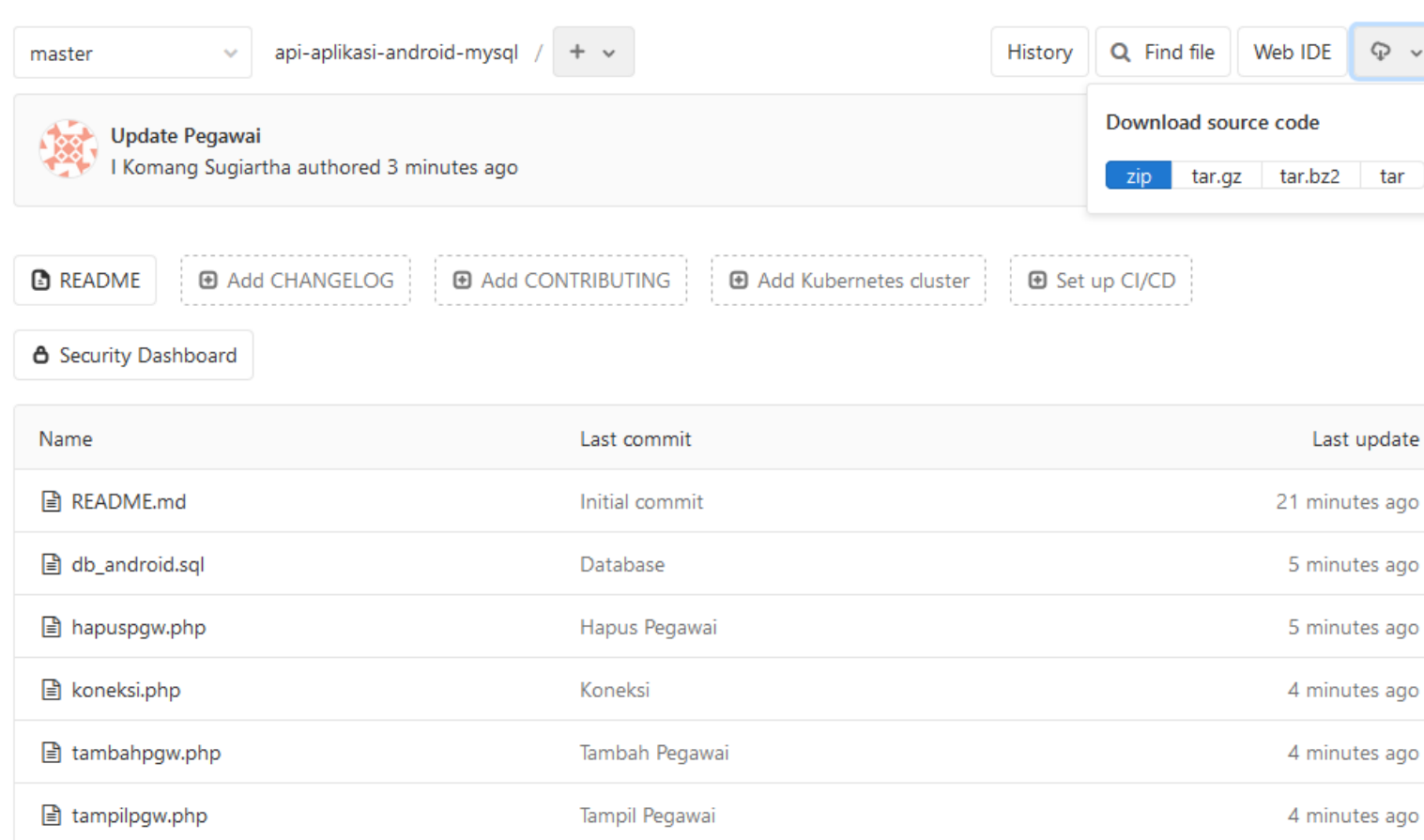


# Aplikasi Database SQLite



# Backend API Aplikasi Android

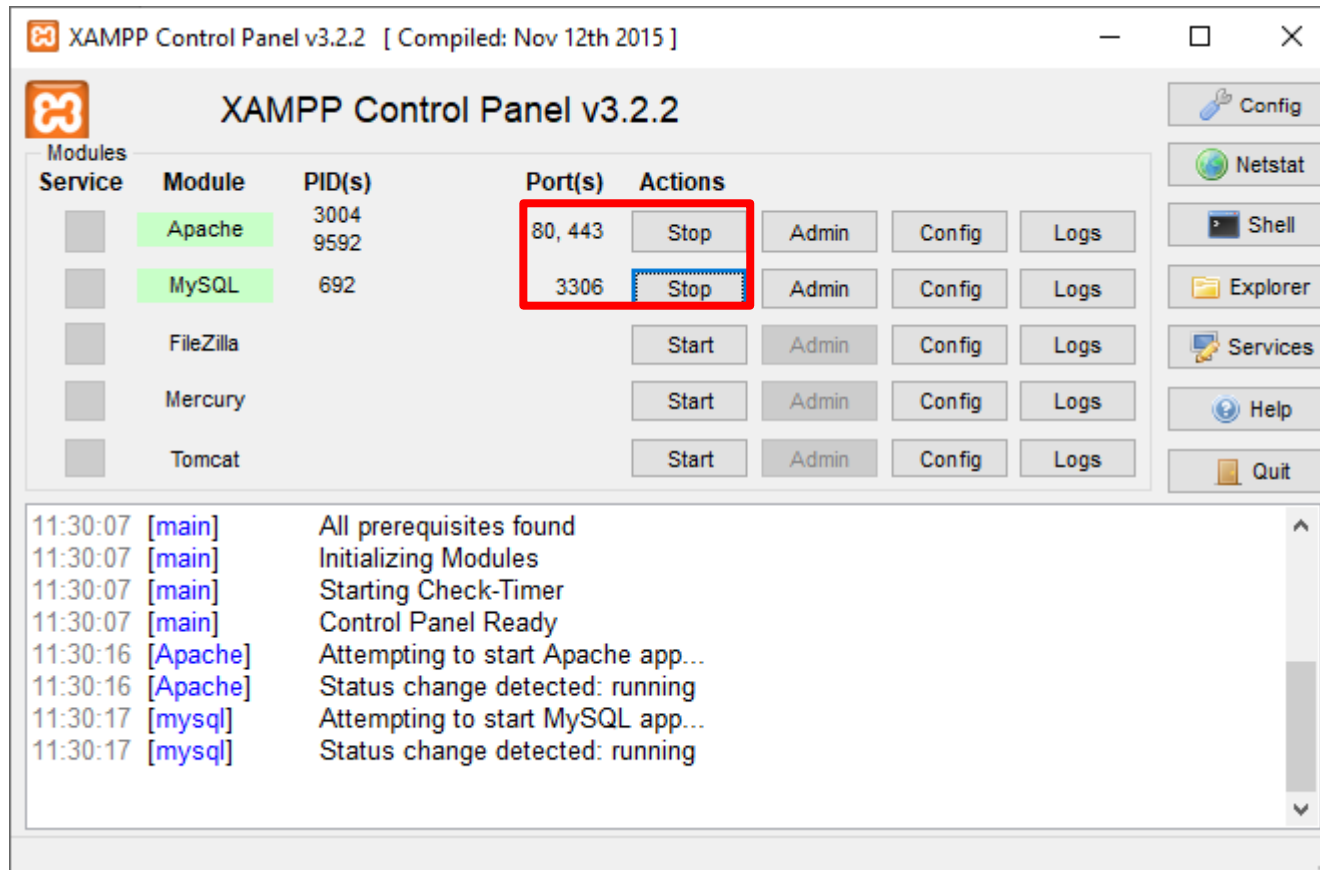
- ❖ Download backend API melalui link berikut : <https://gitlab.com/sugiartha/api-aplikasi-android-mysql>



The screenshot shows the GitLab interface for the repository 'api-aplikasi-android-mysql'. The 'Download source code' dropdown menu is open, showing options: 'zip', 'tar.gz', 'tar.bz2', and 'tar'. A large blue arrow points to the dropdown button. Below the dropdown, there are buttons for 'README', 'Add CHANGELOG', 'Add CONTRIBUTING', 'Add Kubernetes cluster', and 'Set up CI/CD'. A 'Security Dashboard' button is also visible. A table lists the repository's files and their commit history.

Name	Last commit	Last update
README.md	Initial commit	21 minutes ago
db_android.sql	Database	5 minutes ago
hapuspgw.php	Hapus Pegawai	5 minutes ago
koneksi.php	Koneksi	4 minutes ago
tambahpgw.php	Tambah Pegawai	4 minutes ago
tampilpgw.php	Tampil Pegawai	4 minutes ago

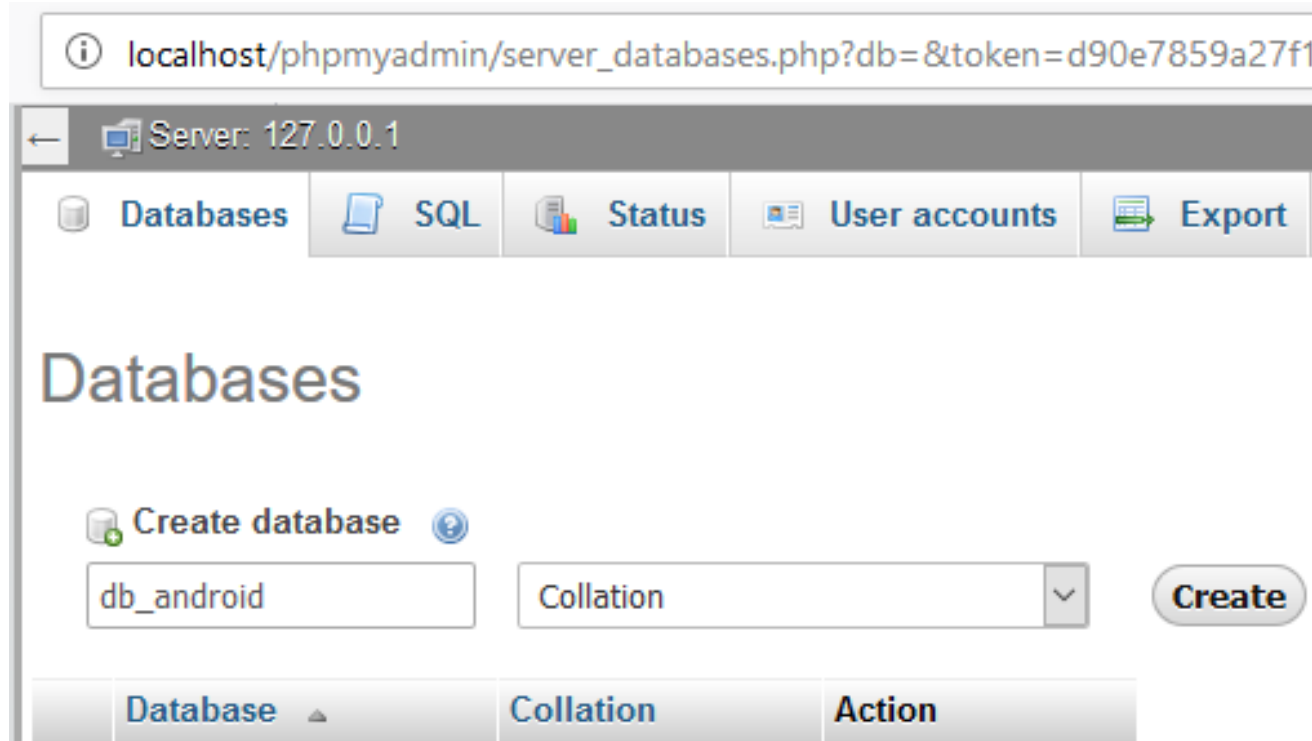
# Backend API Aplikasi Android



- ❖ Buka aplikasi XAMPP
- ❖ Start Apache dan MySQL

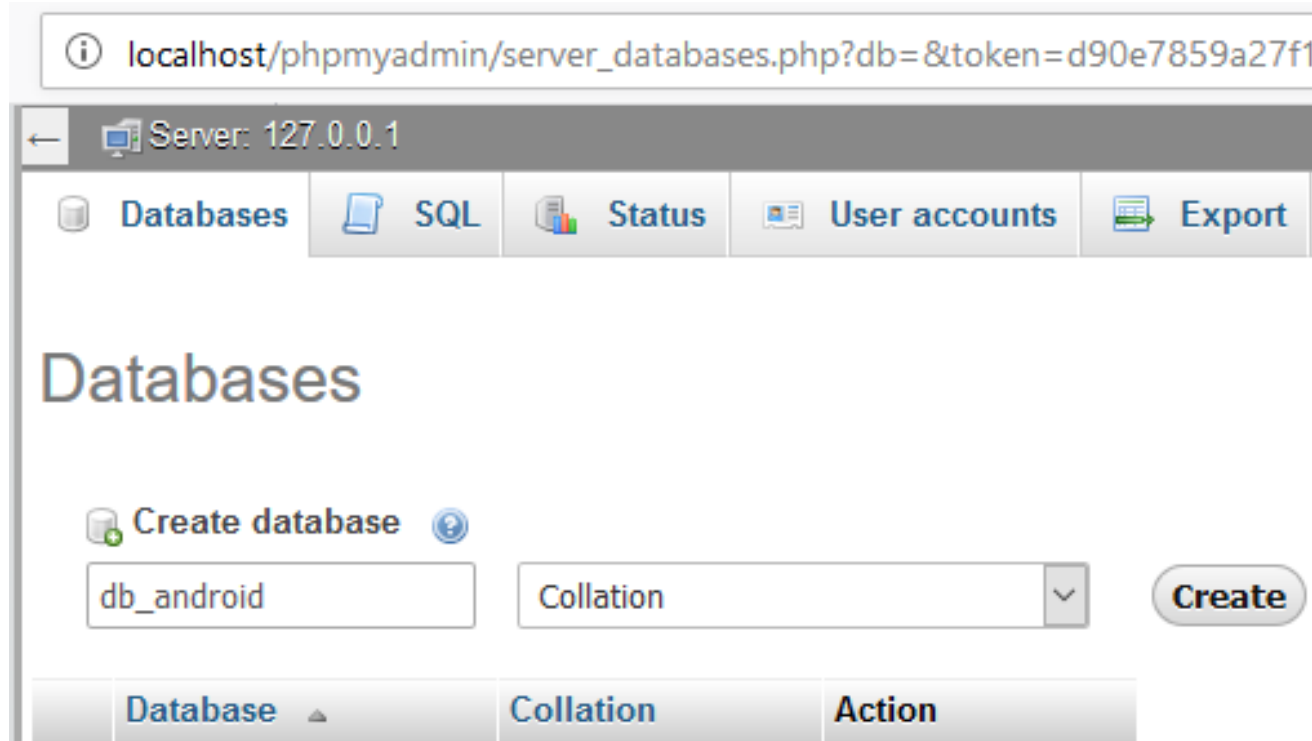


# Backend API Aplikasi Android



- ❖ 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

```
C:\Windows\system32\cmd.exe

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::e0ca:f92f:eb87:3668%19
    IPv4 Address. . . . . : 10.10.3.79
    Subnet Mask . . . . . : 255.255.248.0
    Default Gateway . . . . . : 10.10.0.1

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : 

C:\Users\I Komang Sugiarta>
```

## < Topik\_Silabus >

## Pelatihan

# Kesimpulan Pertemuan #

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

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