



Department of Computer Science and Engineering

Android Development Mini Project on E-Mail Book

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Description

The mini-project is an implementation of E-mail book which is analogous to a Phone book in which we can search email of a person using his/her name. The layout of the project has been made using the constraint layout in android studios. The project uses Java as the programming language and makes use of SQLite for querying to the database. When the Submit button is hit, the program inputs the value from the EditText field and runs a query to display all entries whose name matches the input string. The query output is then displayed into a List View on a different Activity. The List View consists of a serial number field, a name field and an E-mail field inside of it.

Layout Design

activity_main.xml (layout):

```
<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/Title"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="36dp"
        android:autoText="false"
        android:fontFamily="monospace"
        android:text="Email-Book"
        android:textAllCaps="false"
        android:textSize="34sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toTopOf="@+id/textView"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="24dp"
        android:fontFamily="@font/cardo"
        android:text="Please enter a name to search for it in the database:"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout_constraintBottom_toTopOf="@+id/editTextTextPersonName"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toStartOf="parent" />

    <EditText
        android:id="@+id/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="208dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Enter the Name"
        android:textColor="#B1B1B1"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.482"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/button"
```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="36dp"
        android:text="Submit"
        app:iconTint="#FFFFFF"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName" />

<TableLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:stretchColumns="1,2"
    app:layout_constraintTop_toBottomOf="@+id/button"
    android:layout_marginTop="36dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.5"
    app:layout_constraintStart_toStartOf="parent">

    <TableRow
        android:id="@+id/tableRow1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <TextView
            android:id="@+id/SrNo"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="@drawable/cell_heading_shape"
            android:padding="5dp"
            android:text="Sr No."
            android:textAppearance="?android:attr/textAppearanceMedium"
            android:textColor="#FFFFFF"></TextView>

        <TextView
            android:id="@+id/Name"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="@drawable/cell_heading_shape"
            android:padding="5dp"
            android:text="Name"
            android:textAppearance="?android:attr/textAppearanceMedium"
            android:textColor="#FFFFFF"></TextView>

        <TextView
            android:id="@+id/Email"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="@drawable/cell_heading_shape"
            android:padding="5dp"
            android:text="Email"
            android:textAppearance="?android:attr/textAppearanceMedium"
            android:textColor="#FFFFFF"></TextView>

    </TableRow>

    <TableRow
        android:id="@+id/tableRow2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">
        <TextView
            android:id="@+id/textView1"

```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:background="@drawable/cell_shape"
        android:padding="5dp"

android:textAppearance="?android:attr/textAppearanceMedium"></TextView>

        <TextView
            android:id="@+id/textView2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="@drawable/cell_shape"
            android:padding="5dp"

android:textAppearance="?android:attr/textAppearanceMedium"></TextView>

        <TextView
            android:id="@+id/textView3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="@drawable/cell_shape"
            android:padding="5dp"

android:textAppearance="?android:attr/textAppearanceMedium"></TextView>
    </TableRow>
</TableLayout>
</androidx.constraintlayout.widget.ConstraintLayout>

```

details.xml (XML for the second activity):

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical"
    >
    <ListView
        android:id="@+id/user_list"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:dividerHeight="1dp" />
    <Button
        android:id="@+id/btnBack"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="36dp"
        android:text="Back" />
</LinearLayout>

```

list_row.xml (XML for relative layout inside List View):

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:padding="5dip" >
    <TextView
        android:id="@+id/id"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textStyle="bold"
        android:textSize="17sp" />
    <TextView
        android:id="@+id/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/id"
        android:layout_marginTop="7dp"
        android:textSize="14sp" />
    <TextView
        android:id="@+id/email"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/name"
        android:layout_alignBottom="@+id/name"
        android:layout_alignParentEnd="true"
        android:textSize="14sp" />
</RelativeLayout>
```

cell_shape.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<shape
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle" >
    <solid android:color="#FFFFFF"/>
    <stroke android:width="1dp" android:color="#424242"/>
</shape>
```

cell_heading_shape.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<shape
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle" >
    <solid android:color="#FF6200EE"/>
    <stroke android:width="1dp" android:color="#424242"/>
</shape>
```

Class files

MainActivity.java:

```
package com.example.mini_project;

import android.content.Intent;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText name;
    Button submit;
    Intent intent;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name = (EditText) findViewById(R.id.editTextTextPersonName);
        submit = (Button) findViewById(R.id.button);
        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String personName = name.getText().toString();
                DBHelper dbHelper = new DBHelper(MainActivity.this);
                intent = new Intent(MainActivity.this, DetailsActivity.class);
                intent.putExtra("name", personName);
                startActivity(intent);
                Toast.makeText(getApplicationContext(),
"Success", Toast.LENGTH_LONG).show();
            }
        });
    }
}
```

DetailsActivity.java:

```
package com.example.mini_project;

import android.content.Intent;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.ListAdapter;
import android.widget.ListView;
import android.widget.SimpleAdapter;
import java.util.ArrayList;
import java.util.HashMap;

public class DetailsActivity extends AppCompatActivity {
    Intent intent;
    @Override
```



```

        protected void onCreate(Bundle savedInstanceState) {
            super.onCreate(savedInstanceState);
            setContentView(R.layout.details);
            intent = getIntent();
            DBHelper db = new DBHelper(this);
            ArrayList<HashMap<String, String>> userList =
db.GetUsers(intent.getStringExtra("name"));
            ListView lv = (ListView) findViewById(R.id.user_list);
            ListAdapter adapter = new SimpleAdapter(DetailsActivity.this, userList,
R.layout.list_row, new String[]{"id", "name", "email"}, new int[]{R.id.id, R.id.name,
R.id.email});
            lv.setAdapter(adapter);
            Button back = (Button) findViewById(R.id.btnBack);
            back.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    intent = new Intent(DetailsActivity.this, MainActivity.class);
                    startActivity(intent);
                }
            });
        }
    }
}

```

DBHelper.java:

```

package com.example.mini_project;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import java.util.ArrayList;
import java.util.HashMap;

public class DBHelper extends SQLiteOpenHelper {

    private static final int DB_VERSION = 1;
    private static final String DB_NAME = "usersdb";
    private static final String TABLE_Users = "userdetails";
    private static final String KEY_ID = "id";
    private static final String KEY_NAME = "name";
    private static final String KEY_EMAIL = "email";

    public DBHelper(Context context){
        super(context, DB_NAME, null, DB_VERSION);
    }

    @Override
    public void onCreate(SQLiteDatabase db){
        String CREATE_TABLE = "CREATE TABLE " + TABLE_Users + "("
            + KEY_ID + " INTEGER PRIMARY KEY ," + KEY_NAME + " TEXT,"
            + KEY_EMAIL + " TEXT" + ")";
        db.execSQL(CREATE_TABLE);
        // All Dummy Data inserted below
        ContentValues cValues1 = new ContentValues();
        cValues1.put(KEY_ID, 1);
        cValues1.put(KEY_NAME, "Jayesh");
        cValues1.put(KEY_EMAIL, "jayesh.naik2001@gmail.com");
        long newRowId = db.insert(TABLE_Users, null, cValues1);
        ContentValues cValues2 = new ContentValues();
        cValues2.put(KEY_ID, 2);
    }
}

```

```

        cValues2.put(KEY_NAME, "Kartik");
        cValues2.put(KEY_EMAIL, "kartik.diwan@learner.manipal.edu");
        newRowId = db.insert(TABLE_Users, null, cValues2);
        ContentValues cValues3 = new ContentValues();
        cValues3.put(KEY_ID, 3);
        cValues3.put(KEY_NAME, "Anish");
        cValues3.put(KEY_EMAIL, "Anish.m@gmail.com");
        newRowId = db.insert(TABLE_Users, null, cValues3);
        ContentValues cValues4 = new ContentValues();
        cValues4.put(KEY_ID, 4);
        cValues4.put(KEY_NAME, "Kartik");
        cValues4.put(KEY_EMAIL, "diwan.kartik88@gmail.com");
        newRowId = db.insert(TABLE_Users, null, cValues4);
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion){
        // Drop older table if exist
        db.execSQL("DROP TABLE IF EXISTS " + TABLE_Users);
        // Create tables again
        onCreate(db);
    }

    public ArrayList<HashMap<String, String>> GetUsers(String name){
        SQLiteDatabase db = this.getWritableDatabase();
        ArrayList<HashMap<String, String>> userList = new ArrayList<>();
        String query = "SELECT * FROM " + TABLE_Users;
        Cursor cursor = db.query(TABLE_Users, new String[]{KEY_ID, KEY_NAME,
KEY_EMAIL}, KEY_NAME+ "=?", new String[]{name}, null, null, null);
        if (cursor.moveToFirst())
        {
            do {
                HashMap<String, String> user = new HashMap<>();
                user.put("id", cursor.getString(0));
                user.put("name", cursor.getString(1));
                user.put("email", cursor.getString(2));
                userList.add(user);
            }while(cursor.moveToNext());
        }
        cursor.close();
        return userList;
    }
}

```

Database Design

Database Name: usersdb

Table Name: userdetails

Column name	Data Type
id	INTEGER
name	TEXT
email	TEXT

Dummy Entries provided in the project:

id	name	email
1	Jayesh	jayesh.naik2001@gmail.com
2	Kartik	kartik.diwan@learner.manipal.edu
3	Anish	Anish.m@gmail.com
4	Kartik	diwan.kartik88@gmail.com

Screen Shots

The screenshot shows an Android application interface. At the top, the status bar displays the time 19:26, battery level at 39%, and network status (VoLTE, LTE1, LTE2). The app's title bar reads "Mini_Project". Below this, the main heading "Email-Book" is displayed in a large, bold, white font. A prompt "Please enter a name to search for it in the database:" is shown in a smaller white font. A text input field contains the name "Kartik", which is underlined with a red line. Below the input field is a blue rectangular button with the text "SUBMIT" in white. At the bottom of the screen, a standard Android keyboard is visible. The keyboard's search bar shows a right arrow icon, a user profile icon labeled "Kartik Diwan", and a microphone icon. The keyboard layout includes rows for numbers (1-0), letters (q-w-e-r-t-y-u-i-o-p), letters (a-s-d-f-g-h-j-k-l), and letters (z-x-c-v-b-n-m). The bottom row features a shift key, a comma/semicolon key, a globe icon, a button labeled "English", a period/quote key, and a green checkmark key. A home indicator bar is visible at the very bottom of the screen.





