

Practical 12 Solution

Step 1: Start a new Application with an appropriate name, here I named "sqlitedemo".

Step 2: Create the activity.xml File with RelativeLayout.

Step 3: Create the Java Activity code ie MainActivity.java.

Step 4: Go to app->java-><your package name>, here "com.example.sqlitedemo", right click and add new java class and name it, here I named "databasehelper".

Add the following code.

Step 5: Run the app

activity_main.xml

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools" android:layout_width="match_parent"
    android:layout_height="match_parent"

    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textAppearance="?android:attr/textAppearanceLarge"
        android:text="Name"
        android:id="@+id/textView"
        android:layout_alignParentTop="true"
        android:layout_alignParentLeft="true"
```

```
android:layout_alignParentStart="true" />
```

```
<TextView
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:textAppearance="?android:attr/textAppearanceLarge"
```

```
android:text="Surname"
```

```
android:id="@+id/textView2"
```

```
android:layout_below="@+id/editText_name"
```

```
android:layout_alignParentLeft="true"
```

```
android:layout_alignParentStart="true" />
```

```
<TextView
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:textAppearance="?android:attr/textAppearanceLarge"
```

```
android:text="Marks"
```

```
android:id="@+id/textView3"
```

```
android:layout_below="@+id/editText_surname"
```

```
android:layout_alignParentLeft="true"
```

```
android:layout_alignParentStart="true" />
```

```
<EditText
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
android:id="@+id/editText_name"
```

```
android:layout_alignTop="@+id/textView"
```

```
android:layout_toRightOf="@+id/textView"
```

```
android:layout_toEndOf="@+id/textView" />
```

<EditText

```
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:id="@+id/editText_surname"  
    android:layout_alignTop="@+id/textView2"  
    android:layout_toRightOf="@+id/textView2"  
    android:layout_toEndOf="@+id/textView2" />
```

<EditText

```
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:id="@+id/editText_Marks"  
    android:layout_below="@+id/editText_surname"  
    android:layout_toRightOf="@+id/textView3"  
    android:layout_toEndOf="@+id/textView3" />
```

<Button

```
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Add Data"  
    android:id="@+id/button_add"  
    android:layout_below="@+id/editText_Marks"  
    android:layout_alignParentLeft="true"  
    android:layout_alignParentStart="true"  
    android:layout_marginTop="76dp" />
```

<Button

```
    android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"  
android:text="View All"  
android:id="@+id/button_viewAll"  
android:layout_above="@+id/button_update"  
android:layout_centerHorizontal="true" />
```

```
<Button
```

```
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Update"  
    android:id="@+id/button_update"  
    android:layout_below="@+id/button_add"  
    android:layout_alignParentLeft="true"  
    android:layout_alignParentStart="true" />
```

```
<Button
```

```
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Delete"  
    android:id="@+id/button_delete"  
    android:layout_centerVertical="true"  
    android:layout_below="@+id/button_viewAll"  
    android:layout_alignLeft="@+id/button_viewAll"  
    android:layout_alignStart="@+id/button_viewAll" />
```

```
<TextView
```

```
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:textAppearance="?android:attr/textAppearanceLarge"
```

```
android:text="id"
android:id="@+id/textView_id"
android:layout_below="@+id/editText_Marks"
android:layout_alignParentLeft="true"
android:layout_alignParentStart="true" />
```

<EditText

```
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/editText_id"
android:layout_alignTop="@+id/textView_id"
android:layout_toRightOf="@+id/textView3"
android:layout_toEndOf="@+id/textView3" />
```

<Button

```
android:id="@+id/clear"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@id/button_update"
android:layout_marginStart="100dp"
android:onClick="clear"
android:text="RESET" />
```

<TextView

```
android:id="@+id/textView4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentBottom="true"
android:text="For Update/delete, Enter ID first"
android:textAllCaps="true"
```

```
        android:textSize="30sp" />
</RelativeLayout>
```

MainActivity.java

note- write the code from import statement onwards

Do not change your package name as that might be different from this package

```
package com.example.sqlitedemo;
import android.app.AlertDialog;
import android.database.Cursor;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    databasehelper myDb;
    EditText editName,editSurname,editMarks ,editTextId;
    Button btnAddData;
    Button btnviewAll;
    Button btnDelete;

    Button btnviewUpdate;
    @Override
```

```

protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    myDb = new databasehelper(this);
    editName = (EditText)findViewById(R.id.editText_name);
    editSurname = (EditText)findViewById(R.id.editText_surname);
    editMarks = (EditText)findViewById(R.id.editText_Marks);
    editTextId = (EditText)findViewById(R.id.editText_id);
    btnAddData = (Button)findViewById(R.id.button_add);
    btnviewAll = (Button)findViewById(R.id.button_viewAll);
    btnviewUpdate= (Button)findViewById(R.id.button_update);
    btnDelete= (Button)findViewById(R.id.button_delete);
    AddData();
    viewAll();
    UpdateData();
    DeleteData();
}

public void DeleteData() {
    btnDelete.setOnClickListener(
        new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Integer deletedRows = myDb.deleteData(editTextId.getText().toString());
                if(deletedRows > 0)
                    Toast.makeText(MainActivity.this,"Data Deleted",Toast.LENGTH_LONG).show();
                else
                    Toast.makeText(MainActivity.this,"Data not Deleted",Toast.LENGTH_LONG).show();
            }
        }
    );
}

```

```

        }
    );
}

public void UpdateData() {
    btnviewUpdate.setOnClickListener(
        new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                boolean isUpdate = myDb.updateData(editTextId.getText().toString(),
                    editName.getText().toString(),
                    editSurname.getText().toString(),editMarks.getText().toString());
                if(isUpdate == true)
                    Toast.makeText(MainActivity.this,"Data
Update",Toast.LENGTH_LONG).show();
                else
                    Toast.makeText(MainActivity.this,"Data not
Updated",Toast.LENGTH_LONG).show();
            }
        }
    );
}

public void AddData() {
    btnAddData.setOnClickListener(
        new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                boolean isInserted = myDb.insertData(editName.getText().toString(),
                    editSurname.getText().toString(),
                    editMarks.getText().toString() );
                if(isInserted == true)

```

```

        Toast.makeText(MainActivity.this,"Data
Inserted",Toast.LENGTH_LONG).show();

        else

            Toast.makeText(MainActivity.this,"Data not
Inserted",Toast.LENGTH_LONG).show();

    }

}

);

}

```

```

public void viewAll() {

    btnviewAll.setOnClickListener(

        new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                Cursor res = myDb.getAllData();

                if(res.getCount() == 0) {

                    // show message

                    showMessage("Error","Nothing found");

                    return;

                }

                StringBuffer buffer = new StringBuffer();

                while (res.moveToNext()) {

                    buffer.append("Id :"+ res.getString(0)+"\n");

                    buffer.append("Name :"+ res.getString(1)+"\n");

                    buffer.append("Surname :"+ res.getString(2)+"\n");

                    buffer.append("Marks :"+ res.getString(3)+"\n\n");

                }

                // Show all data

```

```
        showMessage("Data",buffer.toString());
    }
}
);
}
```

```
public void showMessage(String title,String Message){
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(Message);
    builder.show();
}
public void clear(View v) {
    editName.setText("");
    editSurname.setText("");
    editMarks.setText("");
    editTextId.setText("");
}
}
```

databasehelper.java

note- write the code from import statement onwards

Do not change your package name as that might be different from this package

```
package com.example.sqlitedemo;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
```

```

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

/**
 * Created by ProgrammingKnowledge on 4/3/2015.
 */
public class databasehelper extends SQLiteOpenHelper {

    public static final String DATABASE_NAME = "Student.db";
    public static final String TABLE_NAME = "student_table";
    public static final String COL_1 = "ID";
    public static final String COL_2 = "NAME";
    public static final String COL_3 = "SURNAME";
    public static final String COL_4 = "MARKS";

    public databasehelper(Context context) {
        super(context, DATABASE_NAME, null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("create table " + TABLE_NAME + " (ID INTEGER PRIMARY KEY
        AUTOINCREMENT,NAME TEXT,SURNAME TEXT,MARKS INTEGER)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS "+TABLE_NAME);
        onCreate(db);
    }
}

```

```
public boolean insertData(String name,String surname,String marks) {  
    SQLiteDatabase db = this.getWritableDatabase();  
    ContentValues contentValues = new ContentValues();  
    contentValues.put(COL_2,name);  
    contentValues.put(COL_3,surname);  
    contentValues.put(COL_4,marks);  
    long result = db.insert(TABLE_NAME,null ,contentValues);  
    if(result == -1)  
        return false;  
    else  
        return true;  
}
```

```
public Cursor getAllData() {  
    SQLiteDatabase db = this.getWritableDatabase();  
    Cursor res = db.rawQuery("select * from "+TABLE_NAME,null);  
    return res;  
}
```

```
public boolean updateData(String id,String name,String surname,String marks) {  
    SQLiteDatabase db = this.getWritableDatabase();  
    ContentValues contentValues = new ContentValues();  
    contentValues.put(COL_1,id);  
    contentValues.put(COL_2,name);  
    contentValues.put(COL_3,surname);  
    contentValues.put(COL_4,marks);  
    db.update(TABLE_NAME, contentValues, "ID = ?",new String[] { id });  
    return true;  
}
```

```
public Integer deleteData (String id) {  
    SQLiteDatabase db = this.getWritableDatabase();  
    return db.delete(TABLE_NAME, "ID = ?",new String[] {id});  
}  
}
```