

JAVA Code:

```
package com.example.database;

import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    EditText id,fName,lName,marks;
    Button bAdd,bView,bUpdate,bDelete;
    Databasehelper myDB;

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

        myDB = new Databasehelper(this);
        bAdd = findViewById(R.id.button);
        bView = findViewById(R.id.button2);
        bUpdate = findViewById(R.id.button3);
        bDelete = findViewById(R.id.button4);
        id = findViewById(R.id.editTextTextPersonName);
        fName = findViewById(R.id.editTextTextPersonName2);
        lName = findViewById(R.id.editTextTextPersonName3);
        marks = findViewById(R.id.editTextNumberDecimal);

        AddData();
        ViewAll();
        updateData();
        deleteData();
    }

    private void updateData() {

        bUpdate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                boolean isUpdate =
myDB.updateData(id.getText().toString(),fName.getText().toString(),
lName.getText().toString(),marks.getText().toString());
                if(isUpdate){
                    Toast.makeText(MainActivity.this, "Data updated",
Toast.LENGTH_SHORT).show();
                }
                else {
                    Toast.makeText(MainActivity.this, "Data not updated",
Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
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}

private void ViewAll() {
    bView.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Cursor res = myDB.getAllData();
            if(res.getCount() == 0 ){
                showMessage("Error","No data found .....");
                return;
            }
            StringBuffer buffer = new StringBuffer();
            while(res.moveToNext()){
                buffer.append("ID : " +res.getString(0) +"\n");
                buffer.append("First Name : " +res.getString(1) +"\n");
                buffer.append("Last Name : " +res.getString(2) +"\n");
                buffer.append("Marks : " +res.getString(3) +"\n\n");
            }
            showMessage("Data ",buffer.toString());
        }
    });
}

private void showMessage(String title, String s) {
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(s);
    builder.show();
}

private void AddData() {

    bAdd.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            boolean isInserted =
myDB.insertData(fName.getText().toString(),lName.getText().toString(),marks.getText
().toString());
            if(isInserted){
                Toast.makeText(MainActivity.this, "Data inserted",
Toast.LENGTH_SHORT).show();
            }
            else
            {
                Toast.makeText(MainActivity.this, "Data not inserted",
Toast.LENGTH_SHORT).show();
            }
        }
    });
}

private void deleteData() {
    bDelete.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Integer deleteRows = myDB.deleteData(id.getText().toString());
            if(deleteRows > 0){

```

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        Toast.makeText(MainActivity.this, "Data deleted",
Toast.LENGTH_SHORT).show();
    }
    else
    {
        Toast.makeText(MainActivity.this, "Data not deleted",
Toast.LENGTH_SHORT).show();
    }
}
});
}
}
}

```

```

package com.example.database;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

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 = "First_Name";
    public static final String col_3 = "Last_Name";
    public static final String col_4 = "Marks";
    public Databasehelper(@Nullable 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,First_Name STRING," + "Last_Name STRING,Marks INTEGER)");
    }
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {

    }

    public boolean insertData(String first_name,String last_name,String marks) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put(col_2,first_name);
        contentValues.put(col_3,last_name);
        contentValues.put(col_4,marks);
        long result = db.insert(TABLE_NAME,null,contentValues);
        if(result == -1){
            return false;
        }
        else
        {

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        return true;
    }
}

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

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

public boolean updateData(String id, String first_name, String
last_name, String marks) {
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues contentValues = new ContentValues();
    contentValues.put(col_1, id);
    contentValues.put(col_2, first_name);
    contentValues.put(col_3, last_name);
    contentValues.put(col_4, marks);
    db.update(TABLE_NAME, contentValues, "ID = ?", new String[] {id});
    return true;
}
}

```

XML Code:

```

<?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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/student_database"
        android:textSize="36sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.1" />

    <TextView
        android:id="@+id/textView"

```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/id_no"
android:textSize="18sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.1"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.2" />
```

<TextView

```
android:id="@+id/textView2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/first_name"
android:textSize="18sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.1"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.3" />
```

<TextView

```
android:id="@+id/textView3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/last_name"
android:textSize="18sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.1"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.4" />
```

<TextView

```
android:id="@+id/textView4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/marks"
android:textSize="18sp"
android:textStyle="bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.1"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.5" />
```

<Button

```
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/add"
```

```
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.3"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.7" />
```

<Button

```
android:id="@+id/button2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/view"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.7"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.7" />
```

<Button

```
android:id="@+id/button3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/update"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.3"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.8" />
```

<Button

```
android:id="@+id/button4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/delete"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.7"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.8" />
```

<EditText

```
android:id="@+id/editTextTextPersonName"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.8"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.2"
android:importantForAutofill="no" />
```

<EditText

```
android:id="@+id/editTextTextPersonName2"
```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.8"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.3" />
```

<EditText

```
android:id="@+id/editTextTextPersonName3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.8"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.4" />
```

<EditText

```
android:id="@+id/editTextNumberDecimal"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="numberDecimal"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="0.8"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.5" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

OUTPUT:

