

Question**Database Programming with SQLite.****Activity_main.xml**

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

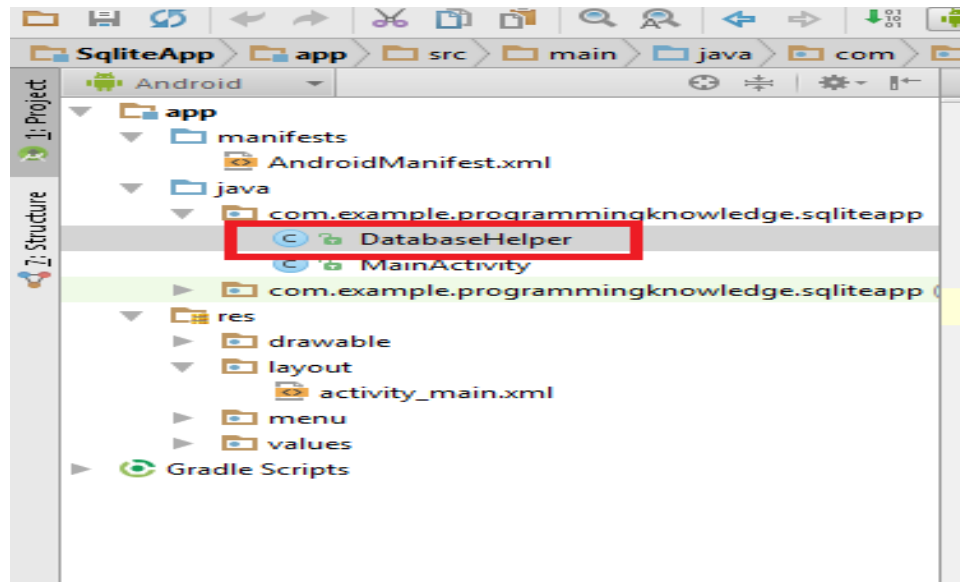
```
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:textAppearance="?android:attr/textAppearanceLarge"  
    android:text="id"  
    android:id="@+id/textView_id"  
    android:layout_below="@+id/editText_Marks"  
    android:layout_alignParentLeft="true"  
    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" />
```

```
</RelativeLayout>
```

Now create a new Java class called **DatabaseHelper.java**



DatabaseHelper.java

package com.maharashtracollege.profshahidansari;

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** = "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});
}
}
```

Main Activity.java

```
package com.maharashtracollege.profshahidansari;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;
import androidx.core.app.NotificationManagerCompat;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.database.sqlite.SQLiteDatabase;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

import java.nio.channels.Channel;
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;
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();
            }
        }
    );
}

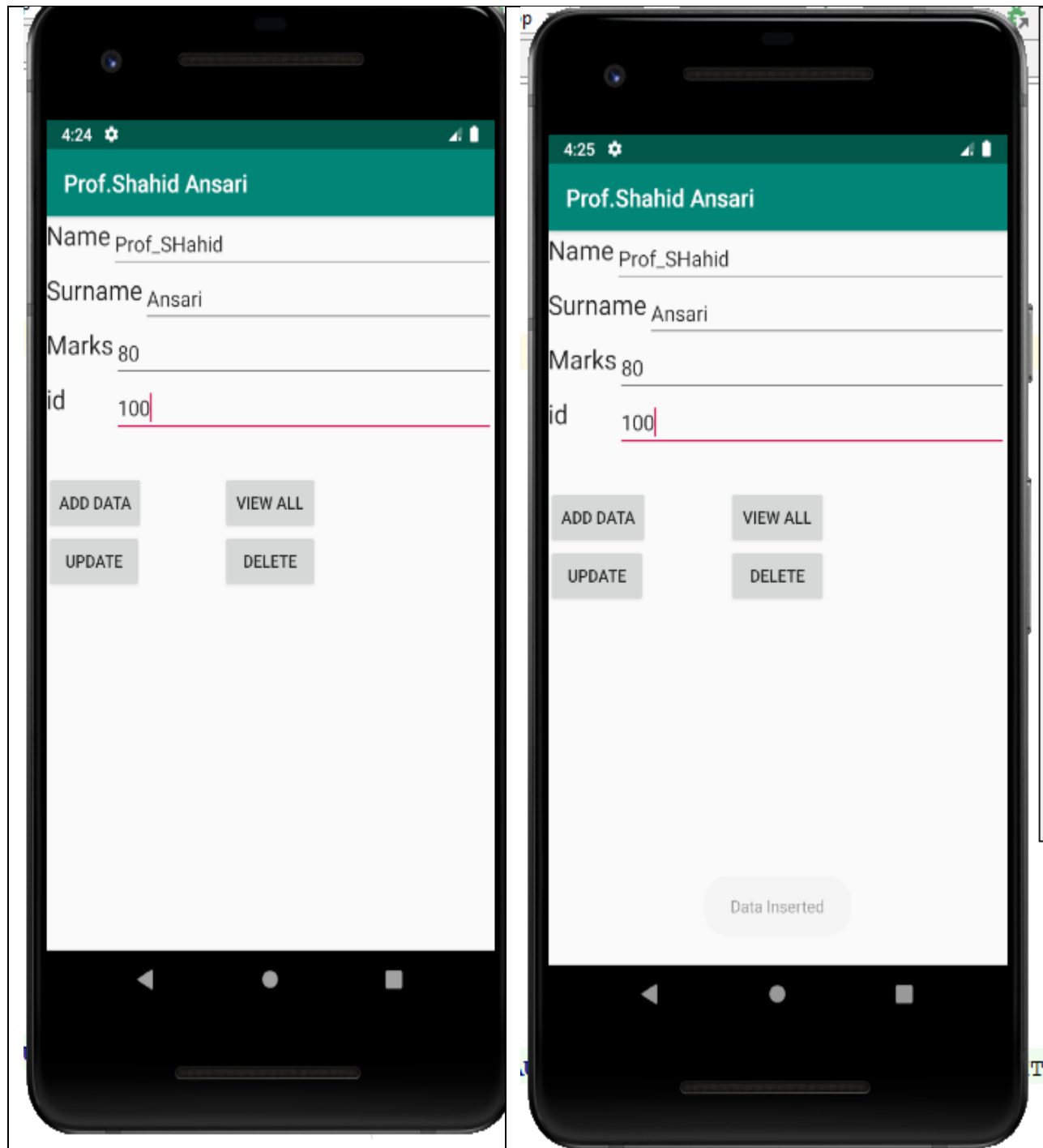
public void viewAll() {
    btnviewAll.setOnClickListener(
        new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Cursor res = myDb.getAllData();
                if(res.getCount() == 0) {
                    // show message
                    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();  
}  
  
}
```



Click On ViewAll Button

