**Prog 3) SQLite Database Tutorial: Insert, Delete, Update and View Data from SQLite DB in Android Studio**

We will create three files:

**MainActivity.java**

**DBHelper.java**

**activity\_main.xml**

In the MainActivity, we will define the DBHelper class variable DB which will be used to access the SQLite database.

**MainActivity.java:**

package com.example.sqllitetry;  
  
import androidx.appcompat.app.AlertDialog;  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.database.Cursor;  
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, contact, dob;  
 Button insert, update, delete, view;  
 DBHelper DB;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 name = findViewById(R.id.*name*);  
 contact = findViewById(R.id.*contact*);  
 dob = findViewById(R.id.*dob*);  
 insert = findViewById(R.id.*btnInsert*);  
 update = findViewById(R.id.*btnUpdate*);  
 delete = findViewById(R.id.*btnDelete*);  
 view = findViewById(R.id.*btnView*);  
 DB = new DBHelper(this);  
 insert.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String nameTXT = name.getText().toString();  
 String contactTXT = contact.getText().toString();  
 String dobTXT = dob.getText().toString();  
  
 Boolean checkinsertdata = DB.insertuserdata(nameTXT, contactTXT, dobTXT);  
 if(checkinsertdata==true)  
 Toast.*makeText*(MainActivity.this, "New Entry Inserted", Toast.*LENGTH\_SHORT*).show();  
 else  
 Toast.*makeText*(MainActivity.this, "New Entry Not Inserted", Toast.*LENGTH\_SHORT*).show();  
 } });  
 update.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String nameTXT = name.getText().toString();  
 String contactTXT = contact.getText().toString();  
 String dobTXT = dob.getText().toString();  
  
 Boolean checkupdatedata = DB.updateuserdata(nameTXT, contactTXT, dobTXT);  
 if(checkupdatedata==true)  
 Toast.*makeText*(MainActivity.this, "Entry Updated", Toast.*LENGTH\_SHORT*).show();  
 else  
 Toast.*makeText*(MainActivity.this, "New Entry Not Updated", Toast.*LENGTH\_SHORT*).show();  
 } });  
  
 delete.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String nameTXT = name.getText().toString();  
 Boolean checkudeletedata = DB.deletedata(nameTXT);  
 if(checkudeletedata==true)  
 Toast.*makeText*(MainActivity.this, "Entry Deleted", Toast.*LENGTH\_SHORT*).show();  
 else  
 Toast.*makeText*(MainActivity.this, "Entry Not Deleted", Toast.*LENGTH\_SHORT*).show();  
 } });  
  
 view.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 Cursor res = DB.getdata();  
 if(res.getCount()==0){  
 Toast.*makeText*(MainActivity.this, "No Entry Exists", Toast.*LENGTH\_SHORT*).show();  
 return;  
 }  
 StringBuffer buffer = new StringBuffer();  
 while(res.moveToNext()){  
 buffer.append("Name :"+res.getString(0)+"\n");  
 buffer.append("Contact :"+res.getString(1)+"\n");  
 buffer.append("Date of Birth :"+res.getString(2)+"\n\n");  
 }  
  
 AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);  
 builder.setCancelable(true);  
 builder.setTitle("User Entries");  
 builder.setMessage(buffer.toString());  
 builder.show();  
 } });  
 }}

Then we will create our UI i.e., main\_activity.xml to perform all the activities.

**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"  
 android:padding="10dp"  
 tools:context=".MainActivity">  
 <TextView  
 android:id="@+id/texttitle"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Please enter the details below"  
 android:textSize="24dp"  
 android:layout\_marginTop="20dp"/>  
 <EditText  
 android:id="@+id/name"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Name"  
 android:textSize="24dp"  
 android:layout\_below="@+id/texttitle"  
 android:inputType="textPersonName"/>  
 <EditText  
 android:id="@+id/contact"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Contact"  
 android:textSize="24dp"  
 android:layout\_below="@+id/name"  
 android:inputType="number"/>  
  
 <EditText  
 android:id="@+id/dob"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/contact"  
 android:hint="Date of Birth"  
 android:inputType="number"  
 android:textSize="24dp" />  
 <Button  
 android:id="@+id/btnInsert"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textSize="24dp"  
 android:text="Insert New Data"  
 android:layout\_marginTop="30dp"  
 android:layout\_below="@id/dob"/>  
 <Button  
 android:id="@+id/btnUpdate"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textSize="24dp"  
 android:text="Update Data"  
 android:layout\_below="@id/btnInsert"/>  
 <Button  
 android:id="@+id/btnDelete"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textSize="24dp"  
 android:text="Delete Existing Data"  
 android:layout\_below="@id/btnUpdate"/>  
 <Button  
 android:id="@+id/btnView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textSize="24dp"  
 android:text="View Data"  
 android:layout\_below="@id/btnDelete"/>  
</RelativeLayout>

Along with the above, we will need to create the Database named DB and a table "userdetails".

**DBHelper.java**

package com.example.sqllitetry;  
  
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 DBHelper extends SQLiteOpenHelper {  
 public DBHelper(Context context) {  
 super(context, "Userdata.db", null, 1);  
 }  
 @Override  
 public void onCreate(SQLiteDatabase DB) {  
 DB.execSQL("create Table Userdetails(name TEXT primary key, contact TEXT, dob TEXT)");  
 }  
 @Override  
 public void onUpgrade(SQLiteDatabase DB, int i, int ii) {  
 DB.execSQL("drop Table if exists Userdetails");  
 }  
 public Boolean insertuserdata(String name, String contact, String dob)  
 {  
 SQLiteDatabase DB = this.getWritableDatabase();  
 ContentValues contentValues = new ContentValues();  
 contentValues.put("name", name);  
 contentValues.put("contact", contact);  
 contentValues.put("dob", dob);  
 long result=DB.insert("Userdetails", null, contentValues);  
 if(result==-1){  
 return false;  
 }else{  
 return true;  
 }  
 }  
 public Boolean updateuserdata(String name, String contact, String dob)  
 {  
 SQLiteDatabase DB = this.getWritableDatabase();  
 ContentValues contentValues = new ContentValues();  
 contentValues.put("contact", contact);  
 contentValues.put("dob", dob);  
 Cursor cursor = DB.rawQuery("Select \* from Userdetails where name = ?", new String[]{name});  
 if (cursor.getCount() > 0) {  
 long result = DB.update("Userdetails", contentValues, "name=?", new String[]{name});  
 if (result == -1) {  
 return false;  
 } else {  
 return true;  
 }  
 } else {  
 return false;  
 }  
 }  
 public Boolean deletedata (String name)  
 {  
 SQLiteDatabase DB = this.getWritableDatabase();  
 Cursor cursor = DB.rawQuery("Select \* from Userdetails where name = ?", new String[]{name});  
  if (cursor.getCount() > 0) {  
 long result = DB.delete("Userdetails", "name=?", new String[]{name});  
 if (result == -1) {  
 return false;  
 } else {  
 return true;  
 }  
 } else {  
 return false;  
 }  
 }  
  
 public Cursor getdata ()  
 {  
 SQLiteDatabase DB = this.getWritableDatabase();  
 Cursor cursor = DB.rawQuery("Select \* from Userdetails", null);  
 return cursor;  
 }  
}