**PROGRAM 12 - DATABASE OPERATIONS**

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>  
  
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:padding="16dp">  
 <EditText  
 android:id="@+id/editTextName"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Name" />  
  
 <EditText  
 android:id="@+id/editTextAge"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Age"  
 android:inputType="number"  
 android:minHeight="48dp" />  
  
 <EditText  
 android:id="@+id/editTextMark"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Mark"  
 android:inputType="number"  
 android:minHeight="48dp" />  
 <Button  
 android:id="@+id/buttonInsert"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Insert Data" />  
 <Button  
 android:id="@+id/buttonSelect"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="select Data" />  
 <TextView  
 android:id="@+id/textViewData"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:text="User Data:"  
 android:textStyle="bold" />  
 </LinearLayout>

**MainActivity.java**

package com.example.databaseoperations;  
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.TextView;  
import android.widget.Toast;  
public class MainActivity extends AppCompatActivity {  
 private DatabaseHelper db; // database name  
 private EditText editTextName, editTextAge, editTextMark;  
 private TextView textViewData;  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 db = new DatabaseHelper(this);  
 editTextName = findViewById(R.id.*editTextName*);  
 editTextAge = findViewById(R.id.*editTextAge*);  
 editTextMark = findViewById(R.id.*editTextMark*);  
 textViewData = findViewById(R.id.*textViewData*);  
 Button buttonInsert = findViewById(R.id.*buttonInsert*);  
 Button buttonSelect = findViewById(R.id.*buttonSelect*);  
 buttonInsert.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 String name = editTextName.getText().toString();  
 int age = Integer.*parseInt*(editTextAge.getText().toString());  
 int mark = Integer.*parseInt*(editTextMark.getText().toString());  
 boolean insertData = db.insertUser(name, age, mark); // insert data  
 if (insertData) {  
 Toast.*makeText*(MainActivity.this, "User Inserted Successfully",  
 Toast.*LENGTH\_SHORT*).show();  
 displayData();  
 } else {  
 Toast.*makeText*(MainActivity.this, "Failed to Insert User",  
 Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
 });  
 buttonSelect.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 displayData();  
 }  
 });  
 }  
 //display data  
 private void displayData() {  
 Cursor cursor = db.getAllUsers();  
 if (cursor.getCount() == 0) {  
 textViewData.setText("No users found");  
 } else {  
 StringBuilder data = new StringBuilder();  
 while (cursor.moveToNext()) {  
 int id = cursor.getInt(0);  
 String name = cursor.getString(1);  
 int age = cursor.getInt(2);  
 int mark = cursor.getInt(3);  
 data.append("ID: ").append(id)  
 .append(", Name: ").append(name)  
 .append(", Age: ").append(age)  
 .append(", Mark: ").append(mark)  
 .append("\n");  
 }  
 textViewData.setText(data.toString());  
 }  
 }  
}

**DatabaseHelper.java**

package com.example.databaseoperations;  
  
import android.content.ContentValues;  
import android.content.Context;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.database.sqlite.SQLiteOpenHelper;  
public class DatabaseHelper extends SQLiteOpenHelper{  
 private static final String *DATABASE\_NAME* = "UserDatabase.db";  
 private static final String *TABLE\_NAME* = "UserTable";  
 private static final String *COL\_1* = "ID";  
 private static final String *COL\_2* = "NAME";  
 private static final String *COL\_3* = "AGE";  
 private static final String *COL\_4* = "MARK";  
 public DatabaseHelper(Context context) {  
 super(context, *DATABASE\_NAME*, null, 1);  
 }  
 @Override  
 public void onCreate(SQLiteDatabase db) {  
 db.execSQL("CREATE TABLE " + *TABLE\_NAME* + " (" +  
 *COL\_1* + " INTEGER PRIMARY KEY AUTOINCREMENT," +  
 *COL\_2* + " TEXT," +  
 *COL\_3* + " INTEGER," +  
 *COL\_4* + " INTEGER)");  
 }  
 @Override  
 public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {  
 db.execSQL("DROP TABLE IF EXISTS " + *TABLE\_NAME*);  
 onCreate(db);  
 }  
 public boolean insertUser(String name, int age, int mark) {  
 SQLiteDatabase db = this.getWritableDatabase();  
 ContentValues contentValues = new ContentValues();  
 contentValues.put(*COL\_2*, name);  
 contentValues.put(*COL\_3*, age);  
 contentValues.put(*COL\_4*, mark);  
 long result = db.insert(*TABLE\_NAME*, null, contentValues);  
 return result != -1;  
 }  
 public Cursor getAllUsers() {  
 SQLiteDatabase db = this.getWritableDatabase();  
 return db.rawQuery("SELECT \* FROM " + *TABLE\_NAME*, null);  
 }  
}

**OUTPUT**

