Practical 26

1. Write a Program to insert, delete and update record in database.

Xml Code :

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
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"
  tools:context=".MainActivity"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:paddingTop="20dp">
  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Student Database"
    android:textColor="@color/black"
    android:layout_gravity="center"
    android:textStyle="bold|italic"
android:textSize="40sp"
android:layout_marginBottom="30dp"/>
  <TableLayout
android:layout_width="match_parent"
android:layout_height="wrap_content">
    <TableRow
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:paddingStart="20dp">
      <TextView
        android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:text="Student ID : "
        android:textColor="@color/black"
        android:textSize="20sp"/>
      <EditText
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="10dp"
        android:inputType="number"
        android:id="@+id/ed1"/>
    </TableRow>
    <TableRow
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:paddingStart="20dp">
      <TextView
        android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:text="Student Name : "
        android:textSize="20sp"
        android:textColor="@color/black"/>
      <EditText
        android:layout_marginStart="10dp"
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:inputType="text"
        android:id="@+id/ed2"/>
    </TableRow>
    <TableRow
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:paddingStart="20dp">
      <TextView
        android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:text="Student Fees : "
        android:textSize="20sp"
        android:textColor="@color/black"/>
      <EditText
        android:layout_marginStart="10dp"
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:inputType="number"
        android:id="@+id/ed3"/>
    </TableRow>
  </TableLayout>
  <LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="40dp"
android:gravity="center">
    <Button
      android:id="@+id/add"
      android:layout_width="190dp"
      android:layout_height="wrap_content"
      android:text="Insert"
      android:textColor="@color/white"
      android:layout_marginHorizontal="3dp"
      android:backgroundTint="@color/black"/>
    <Button
      android:id="@+id/update"
      android:layout_width="190dp"
      android:layout_height="wrap_content"
```

```xml
            android:text="Update"                            android:text="Delete"
            android:textColor="@color/white"                 android:textColor="@color/white"
            android:layout_marginHorizontal="3dp"            android:backgroundTint="@color/black"
            android:backgroundTint="@color/black"/>          android:layout_marginHorizontal="3dp"/>
    </LinearLayout>                                      <Button
    <LinearLayout                                           android:id="@+id/view"
        android:layout_width="match_parent"                 android:layout_width="190dp"
        android:layout_height="wrap_content"                android:layout_height="wrap_content"
        android:layout_marginTop="15dp"                     android:text="VIEW"
        android:gravity="center">                           android:textColor="@color/white"
    <Button                                                 android:backgroundTint="@color/black"
        android:id="@+id/delete"                            android:layout_marginHorizontal="3dp"/>
        android:layout_width="190dp"                    </LinearLayout>
        android:layout_height="wrap_content"            </LinearLayout>
```

Java Code

```java
package com.example.exp26;
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 {
    Database myDB;
    EditText ed1, ed2, ed3;
    Button add, view, update, delete;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        myDB = new Database(this); //will call the constructor of Database class
        ed1 = findViewById(R.id.ed1);
        ed2 = findViewById(R.id.ed2);
        ed3 = findViewById(R.id.ed3);
        add = findViewById(R.id.add);
        view = findViewById(R.id.view);
        update = findViewById(R.id.update);
        delete = findViewById(R.id.delete);
        addF();
        viewF();
        updateF();
        deleteF();
    }
    public void addF(){
        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                boolean isInserted = myDB.addData(ed1.getText().toString(),
                    ed2.getText().toString(),ed3.getText().toString());
                if (isInserted == true)
              Toast.makeText(getApplicationContext(), "Data inserted Successfully!!!", Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(getApplicationContext(), "Failed to insert Data!!!", Toast.LENGTH_SHORT).show();
            }});}
    public void viewF(){
        view.setOnClickListener(new View.OnClickListener() {
```

```java
        @Override
        public void onClick(View v) {
            Cursor resultSet = myDB.viewData();
            if (resultSet.getCount() == 0){
                showMessage("Error!!!", "No Data Found");
                return;}
            StringBuffer buff = new StringBuffer();
            while (resultSet.moveToNext()){
                buff.append("ID = " + resultSet.getString(0));
                buff.append("\nName = " + resultSet.getString(1));
                buff.append("\nSalary = " + resultSet.getString(2)+"\n\n");
            }
            showMessage("Data", buff.toString());
        }});}
    public void updateF(){
        update.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
             boolean isUpdate = myDB.updateData(ed1.getText().toString(),ed2.getText().toString(), ed3.getText().toString());
                if (isUpdate == true)
             Toast.makeText(getApplicationContext(), "Data updated Successfully!!!", Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(getApplicationContext(), "Record not Found!!!", Toast.LENGTH_SHORT).show();
            }});}
    public void deleteF(){
        delete.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Integer delRows = myDB.deleteData(ed1.getText().toString());
                if (delRows > 0)
             Toast.makeText(getApplicationContext(), "Data Deleted Successfully!!!", Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(getApplicationContext(), "Failed to delete Data!!!", Toast.LENGTH_SHORT).show();
            }});}
    public void showMessage(String title, String msg){
        androidx.appcompat.app.AlertDialog.Builder builder = new AlertDialog.Builder(this);
        builder.setCancelable(true);
        builder.setTitle(title);
        builder.setMessage(msg);
        builder.show();
    }
}
```

Database Java Code :

```java
package com.example.exp26;
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 Database extends SQLiteOpenHelper {
    public static final String DATABASE_NAME = "employee.db"; //case doesn't matter
    public static final String TABLE_NAME = "employee_table";
    public static final String COL_ID = "ID";
    public static final String COL_NAME = "NAME";
    public static final String COL_FEES = "FEES";
    public Database(@Nullable Context context) {
        super(context, DATABASE_NAME, null, 6996);
    }
```

```java
  @Override
  public void onCreate(SQLiteDatabase db) {
    db.execSQL("create table " + TABLE_NAME + " (ID INTEGER PRIMARY KEY AUTOINCREMENT,
NAME TEXT, SALARY FLOAT)");
  }
  @Override
  public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
    db.execSQL("DROP TABLE IF EXISTS "+ TABLE_NAME);
    onCreate(db);
  }
  public boolean addData(String id, String name, String sal){
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues cv = new ContentValues();
    cv.put(COL_ID, id);
    cv.put(COL_NAME, name);
    cv.put(COL_FEES, sal);
    long result = db.insert(TABLE_NAME, null, cv);
    // insert() method has return type of long which returns 1 if insertion failed
    if (result == -1)
      return false;
    else
      return true;
  }
  public Cursor viewData(){
    SQLiteDatabase db = this.getWritableDatabase();
    Cursor res = db.rawQuery("select * from "+TABLE_NAME, null);
    return res;
  }
  public boolean updateData(String id, String name, String sal){
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues cv = new ContentValues();
    cv.put(COL_ID, id);
    cv.put(COL_NAME, name);
    cv.put(COL_FEES, sal);
    Integer rows = db.update(TABLE_NAME, cv, "id = ?", new String[]{ id });
    if (rows>0)
      return true;
    else
      return false;
  }
  public Integer deleteData(String id){
    SQLiteDatabase db = this.getWritableDatabase();
    return db.delete(TABLE_NAME, "id = ?", new String[]{ id });
  }
}
```

Output :

---

exp26

Student Database

Student ID :   121

Student Name :   adi

Student Fees :   1000

INSERT	UPDATE
DELETE	VIEW

Data inserted Successfully!!!

---

exp26

Student Database

Student ID :   146

Student Name :   Raj

Student Fees :   3000

INSERT	UPDATE
DELETE	VIEW

Data inserted Successfully!!!

---

exp26

Student Database

Student ID :   146

Student Name :   KUNAL

Student Fees :   3000

INSERT	UPDATE
DELETE	VIEW

Data updated Successfully!!!

---

exp26

Student Database

Student ID :   121

Student Name :

Student Fees :

INSERT	UPDATE
DELETE	VIEW

Data Deleted Successfully!!!

---

exp26

Student Database

Student ID :   121

Student Name :   raj

Student Fees :   4000

INSERT	UPDATE
DELETE	VIEW

Record not Found!!!

---

exp26

Student Database

Student ID :

Student Name :

Data

ID = 146
Name = KUNAL
Salary = 3000

DELETE   VIEW