DATABASE PROGRAMS

Insert and display

```xml
<?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=".InsertAndDisplayActivity">
    <EditText
        android:id="@+id/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="32dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="name"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/usn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="usn"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/name" />
    <EditText
        android:id="@+id/age"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="age"
        android:inputType="phone"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/usn" />
    <Button
        android:id="@+id/save_btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Save"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/phone" />
    <View
        android:id="@+id/divider"
        android:layout_width="match_parent"
        android:layout_height="1dp"
        android:layout_marginTop="32dp"
```

```xml
        android:background="?android:attr/listDivider"
        app:layout_constraintTop_toBottomOf="@+id/save_btn"
        tools:layout_editor_absoluteX="-8dp" />
    <TextView
        android:id="@+id/saved_data"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="32dp"
        android:text="saved data"
        android:textSize="16sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/divider" />
    <Button
        android:id="@+id/show_saved_data_btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="show saved data"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/saved_data" />
    <EditText
        android:id="@+id/phone"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="phone"
        android:inputType="phone"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/age" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

```java
package com.example.see_db;
import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
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 InsertAndDisplayActivity extends AppCompatActivity {
    EditText nameInput, usnInput, ageInput, phoneInput;
    Button saveBtn, showBtn;
    TextView dataTxt;
    SQLiteDatabase db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_insert_and_display);
        try {
            db = this.openOrCreateDatabase("TrialDb", MODE_WORLD_WRITEABLE,
null);
            db.execSQL("create table if not exists info (name varchar(20), usn
varchar(20), age int, phone varchar(20));");
        } catch (Exception e) {
```

```java
                Toast.makeText(getApplicationContext(), "Database error!",
Toast.LENGTH_SHORT).show();
        }
        nameInput = findViewById(R.id.name);
        usnInput = findViewById(R.id.usn);
        ageInput = findViewById(R.id.age);
        phoneInput = findViewById(R.id.phone);
        dataTxt = findViewById(R.id.saved_data);
        saveBtn = findViewById(R.id.save_btn);
        showBtn = findViewById(R.id.show_saved_data_btn);
        saveBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name = nameInput.getText().toString();
                String usn = usnInput.getText().toString();
                String age = ageInput.getText().toString();
                String phone = phoneInput.getText().toString();
                try {
                    db.execSQL("insert into info values ('" + name + "', '" +
usn + "', " + age + ", '" + phone + "');");
                    Toast.makeText(getApplicationContext(), "Data inserted",
Toast.LENGTH_SHORT).show();
                } catch (Exception e) {
                    Toast.makeText(getApplicationContext(), "Database error!",
Toast.LENGTH_SHORT).show();
                }
            }
        });
        showBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String data = "";
                int index = 0;
                try {
                    Cursor c = db.rawQuery("select * from info", null);
                    if(c != null) {
                        if(c.moveToFirst()) {
                            do {
                                data += index + " - ";
                                data += "Name: " +
c.getString(c.getColumnIndex("name"));
                                data += ", USN: " +
c.getString(c.getColumnIndex("usn"));
                                data += ", Age: " +
c.getInt(c.getColumnIndex("age"));
                                data += ", Phone: " +
c.getString(c.getColumnIndex("phone")) + "\n";
                                ++index;
                            } while (c.moveToNext());
                        }
                        dataTxt.setText(data);
                    }
                } catch (Exception e) {
                    Toast.makeText(getApplicationContext(), "Database error!",
Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
```

```
}
```

SEARCH AND CALL

```xml
<?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=".CallActivity">
    <EditText
        android:id="@+id/call_save_usn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="32dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="USN"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/call_save_phone"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="phone"
        android:inputType="phone"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/call_save_usn" />
    <Button
        android:id="@+id/call_save_btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Button"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/call_save_phone" />
    <View
        android:id="@+id/divider2"
        android:layout_width="match_parent"
        android:layout_height="1dp"
        android:layout_marginTop="32dp"
        android:background="?android:attr/listDivider"
```

```xml
        app:layout_constraintTop_toBottomOf="@+id/call_save_btn"
        tools:layout_editor_absoluteX="-12dp" />
    <EditText
        android:id="@+id/call_usn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="32dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="USN"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/divider2" />
    <Button
        android:id="@+id/call_btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Call"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/call_usn" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

```java
package com.example.see_db;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import android.Manifest;
import android.content.Intent;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class CallActivity extends AppCompatActivity {
    EditText usnInput, phoneInput, callUsnInput;
    Button saveBtn, callBtn;
    SQLiteDatabase db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_call);
        try {
            db = this.openOrCreateDatabase("trialDB",
MODE_WORLD_WRITEABLE, null);
            db.execSQL("create table if not exists callinfo (usn
varchar(20), phone varchar(20));");
        } catch (Exception e) {
```

```java
                Toast.makeText(getApplicationContext(), "database
error!", Toast.LENGTH_SHORT).show();
        }
        usnInput = findViewById(R.id.call_save_usn);
        phoneInput = findViewById(R.id.call_save_phone);
        callUsnInput = findViewById(R.id.call_usn);
        saveBtn = findViewById(R.id.call_save_btn);
        callBtn = findViewById(R.id.call_btn);
        saveBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String usn = usnInput.getText().toString();
                String phone = phoneInput.getText().toString();
                try {
                    db.execSQL("insert into callinfo values ('" + usn
+ "', '" + phone + "');");
                    Toast.makeText(getApplicationContext(), "data
saved!", Toast.LENGTH_SHORT).show();
                } catch (Exception e) {
                    Toast.makeText(getApplicationContext(), "database
error!", Toast.LENGTH_SHORT).show();
                }
            }
        });
        callBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String usn = callUsnInput.getText().toString();
                ActivityCompat.requestPermissions(CallActivity.this,
new String[] {Manifest.permission.CALL_PHONE}, 1);
                try {
                    Cursor c = db.rawQuery("select phone from callinfo
where usn = '" + usn + "';", null);
                    if(c.getCount() > 0) {
                        c.moveToNext();
                        String phone = c.getString(0);
                        Intent i = new Intent(Intent.ACTION_CALL);
                        i.setData(Uri.parse("tel:" + phone));
                        startActivity(i);
                    } else {
                        Toast.makeText(getApplicationContext(), "No
such usn!", Toast.LENGTH_SHORT).show();
                    }
                } catch (Exception e) {
                    Toast.makeText(getApplicationContext(), "database
error!", Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

```xml
<uses-permission
android:name="android.permission.CALL_PHONE"></uses-permission>
```