

11) ListView CRUD - Insert, Delete, Search

StudentCrudDbHelper.java

```
package com.example.madpracticals;

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 StudentCrudDbHelper extends SQLiteOpenHelper {
    private static final String DB_NAME = "student_crud.db";
    private static final int DB_VER = 1;
    public static final String TABLE = "Student";

    public StudentCrudDbHelper(@Nullable Context context) {
        super(context, DB_NAME, null, DB_VER);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("CREATE TABLE " + TABLE + " (roll INTEGER PRIMARY KEY, name TEXT)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldV, int newV) {
        db.execSQL("DROP TABLE IF EXISTS " + TABLE);
        onCreate(db);
    }

    public void insert(int roll, String name) {
        ContentValues cv = new ContentValues();
        cv.put("roll", roll); cv.put("name", name);
        getWritableDatabase().insert(TABLE, null, cv);
    }

    public Cursor getAll() {
```

```

        return getReadableDatabase().rawQuery("SELECT * FROM " + TABLE
+ " ORDER BY roll", null);
    }

    public void delete(int roll) {
        getWritableDatabase().delete(TABLE, "roll=?", new
String[] {String.valueOf(roll)});
    }

    public Cursor searchByName(String q) {
        return getReadableDatabase().rawQuery("SELECT * FROM " + TABLE
+ " WHERE name LIKE ?", new String[] {"%" + q + "%"});
    }
}

```

StudentCrudActivity.java

```

package com.example.madpracticals;

import android.database.Cursor;
import android.os.Bundle;
import android.widget.AdapterView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivityStudentCrudBinding;
import java.util.ArrayList;

public class StudentCrudActivity extends AppCompatActivity {
    private ActivityStudentCrudBinding b;
    private StudentCrudDbHelper db;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivityStudentCrudBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());
        db = new StudentCrudDbHelper(this);

        b.btnInsert.setOnClickListener(v -> {
            try {
                int r =
Integer.parseInt(b.etRoll.getText().toString().trim());
                String name = b.etName.getText().toString().trim();
                if (name.isEmpty()) { Toast.makeText(this, "Enter

```

```

name", Toast.LENGTH_SHORT).show(); return; }
        db.insert(r, name);
        loadAll();
    } catch (NumberFormatException e) { Toast.makeText(this,
"Enter valid roll", Toast.LENGTH_SHORT).show(); }
    });

    b.btnDelete.setOnClickListener(v -> {
        try {
            int r =
Integer.parseInt(b.etDelRoll.getText().toString().trim());
            db.delete(r);
            loadAll();
        } catch (NumberFormatException e) { Toast.makeText(this,
"Enter valid roll", Toast.LENGTH_SHORT).show(); }
    });

    b.btnSearch.setOnClickListener(v -> {
        String q = b.etSearch.getText().toString().trim();
        loadSearch(q);
    });

    loadAll();
}

private void loadAll() {
    Cursor c = db.getAll();
    ArrayList<String> arr = new ArrayList<>();
    while (c.moveToNext()) {
        arr.add(c.getInt(0) + " - " + c.getString(1));
    }
    c.close();
    b.listView.setAdapter(new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, arr));
}

private void loadSearch(String q) {
    Cursor c = db.searchByName(q);
    ArrayList<String> arr = new ArrayList<>();
    while (c.moveToNext()) arr.add(c.getInt(0) + " - " +
c.getString(1));
    c.close();
    b.listView.setAdapter(new ArrayAdapter<>(this,

```

```

        android.R.layout.simple_list_item_1, arr));
    }
}

```

activity_student_crud.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:padding="12dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <EditText android:id="@+id/etRoll" android:hint="Roll"
        android:inputType="number" android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <EditText android:id="@+id/etName" android:hint="Name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <Button android:id="@+id/btnInsert" android:text="Insert"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <View android:layout_width="match_parent"
        android:layout_height="8dp"/>
    <EditText android:id="@+id/etDelRoll" android:hint="Roll to delete"
        android:inputType="number" android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <Button android:id="@+id/btnDelete" android:text="Delete"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <View android:layout_width="match_parent"
        android:layout_height="8dp"/>
    <EditText android:id="@+id/etSearch" android:hint="Search by name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <Button android:id="@+id/btnSearch" android:text="Search"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <ListView android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" android:layout_weight="1"/>
</LinearLayout>

```

Manifest note: No permissions required.

12) Login form with validation

LoginActivity.java

```
package com.example.madpracticals;

import android.content.Intent;
import android.os.Bundle;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivityLoginBinding;

public class LoginActivity extends AppCompatActivity {
    private ActivityLoginBinding b;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivityLoginBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());

        b.btnLogin.setOnClickListener(v -> {
            String user = b.etUser.getText().toString().trim();
            String pass = b.etPass.getText().toString().trim();
            if (user.isEmpty() || pass.isEmpty()) {
                Toast.makeText(this, "Enter credentials", Toast.LENGTH_SHORT).show();
                return;
            }
            if (user.equals("admin") && pass.equals("1234")) {
                Intent i = new Intent(this, WelcomeActivity.class);
                i.putExtra("user", user);
                startActivity(i);
            } else Toast.makeText(this, "Invalid login",
                Toast.LENGTH_SHORT).show();
        });
    }
}
```

activity_login.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:padding="18dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <EditText android:id="@+id/etUser" android:hint="Username"
```

```

android:layout_width="match_parent"
android:layout_height="wrap_content"/>
    <EditText android:id="@+id/etPass" android:hint="Password"
android:inputType="textPassword" android:layout_width="match_parent"
android:layout_height="wrap_content"/>
    <Button android:id="@+id/btnLogin" android:text="Login"
android:layout_width="match_parent"
android:layout_height="wrap_content"/>
</LinearLayout>

```

WelcomeActivity.java

```

package com.example.madpracticals;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivityWelcomeBinding;

public class WelcomeActivity extends AppCompatActivity {
    private ActivityWelcomeBinding b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivityWelcomeBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());
        b.tv.setText("Welcome " + getIntent().getStringExtra("user"));
    }
}

```

Manifest note: Add both activities to AndroidManifest.xml. This is a simple hardcoded validation example.

13) Greet message via Intent

GreetInputActivity.java

```

package com.example.madpracticals;

import android.content.Intent;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivityGreetInputBinding;

public class GreetInputActivity extends AppCompatActivity {
    private ActivityGreetInputBinding b;
    @Override

```

```

        protected void onCreate(Bundle savedInstanceState) {
            super.onCreate(savedInstanceState);
            b = ActivityGreetInputBinding.inflate(getLayoutInflater());
            setContentView(b.getRoot());

            b.btnSend.setOnClickListener(v -> {
                String name = b.etName.getText().toString().trim();
                if (name.isEmpty()) return;
                Intent i = new Intent(this, GreetDisplayActivity.class);
                i.putExtra("name", name);
                startActivity(i);
            });
        }
    }
}

```

GreetDisplayActivity.java

```

package com.example.madpracticals;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivityGreetDisplayBinding;

public class GreetDisplayActivity extends AppCompatActivity {
    private ActivityGreetDisplayBinding b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivityGreetDisplayBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());
        b.tv.setText("Hello, " + getIntent().getStringExtra("name"));
    }
}

```

activity_greet_input.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:padding="18dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <EditText android:id="@+id/etName" android:hint="Enter name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>

```

```

        <Button android:id="@+id/btnSend" android:text="Greet"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    </LinearLayout>

```

Manifest note: Add both activities to AndroidManifest.xml.

14) Change Font Size/Color/Family

FontChangeActivity.java

```

package com.example.madpracticals;

import android.graphics.Typeface;
import android.os.Bundle;
import android.widget.AdapterView;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivityFontChangeBinding;

public class FontChangeActivity extends AppCompatActivity {
    private ActivityFontChangeBinding b;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivityFontChangeBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());

        String[] sizes = {"14", "18", "22", "26"};
        b.spSize.setAdapter(new ArrayAdapter<>(this,
        android.R.layout.simple_spinner_dropdown_item, sizes));
        b.btnApply.setOnClickListener(v -> {
            int size = Integer.parseInt((String)
b.spSize.getSelectedItem());
            b.tvSample.setTextSize(size);
            if (b.cbBold.isChecked())
b.tvSample.setTypeface(Typeface.DEFAULT_BOLD);
            else b.tvSample.setTypeface(Typeface.DEFAULT);
            if (b.btnRed.isChecked())
b.tvSample.setTextColor(getColor(android.R.color.holo_red_dark));
            else if (b.btnBlue.isChecked())
b.tvSample.setTextColor(getColor(android.R.color.holo_blue_dark));
            else
b.tvSample.setTextColor(getColor(android.R.color.black));

```



```

        });
    }
}

```

activity_font_change.xml

```

<?xml version="1.0" encoding="utf-8"?>
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <LinearLayout android:orientation="vertical" android:padding="12dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">
        <TextView android:id="@+id/tvSample" android:text="Sample Text"
            android:textSize="18sp" android:layout_width="match_parent"
            android:layout_height="wrap_content"/>
        <Spinner android:id="@+id/spSize"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"/>
        <CheckBox android:id="@+id/cbBold" android:text="Bold"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"/>
        <RadioGroup android:id="@+id/rgColor"
            android:orientation="horizontal" android:layout_width="wrap_content"
            android:layout_height="wrap_content">
            <RadioButton android:id="@+id/btnRed" android:text="Red"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"/>
            <RadioButton android:id="@+id/btnBlue" android:text="Blue"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"/>
            <RadioButton android:id="@+id/btnBlack" android:text="Black"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content" android:checked="true"/>
        </RadioGroup>
        <Button android:id="@+id/btnApply" android:text="Apply"
            android:layout_width="match_parent"
            android:layout_height="wrap_content" android:layout_marginTop="8dp"/>
    </LinearLayout>
</ScrollView>

```

Manifest note: No permissions required.

15) Registration form with validation

RegisterActivity.java

```
package com.example.madpracticals;

import android.os.Bundle;
import android.util.Patterns;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivityRegisterBinding;

public class RegisterActivity extends AppCompatActivity {
    private ActivityRegisterBinding b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivityRegisterBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());

        b.btnRegister.setOnClickListener(v -> {
            String name = b.etName.getText().toString().trim();
            String email = b.etEmail.getText().toString().trim();
            String pass = b.etPass.getText().toString();
            if (name.isEmpty() || email.isEmpty() || pass.isEmpty()) {
                Toast.makeText(this, "Fill all fields", Toast.LENGTH_SHORT).show();
                return;
            }
            if (!Patterns.EMAIL_ADDRESS.matcher(email).matches()) {
                Toast.makeText(this, "Invalid email", Toast.LENGTH_SHORT).show();
                return;
            }
            Toast.makeText(this, "Registered: " + name,
                Toast.LENGTH_SHORT).show();
        });
    }
}
```

activity_register.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:padding="12dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <EditText android:id="@+id/etName" android:hint="Full name"
        android:layout_width="match_parent"
```

```

android:layout_height="wrap_content"/>
    <EditText android:id="@+id/etEmail" android:hint="Email"
android:inputType="textEmailAddress"
android:layout_width="match_parent"
android:layout_height="wrap_content"/>
    <EditText android:id="@+id/etPass" android:hint="Password"
android:inputType="textPassword" android:layout_width="match_parent"
android:layout_height="wrap_content"/>
    <Button android:id="@+id/btnRegister" android:text="Register"
android:layout_width="match_parent"
android:layout_height="wrap_content"/>
</LinearLayout>

```

Manifest note: No permissions required.

16) Multiplication table using TableLayout

MultiplicationActivity.java

```

package com.example.madpracticals;

import android.os.Bundle;
import android.widget.TableLayout;
import android.widget.TableRow;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
import
com.example.madpracticals.databinding.ActivityMultiplicationBinding;

public class MultiplicationActivity extends AppCompatActivity {
    private ActivityMultiplicationBinding b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivityMultiplicationBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());

        int n = 5; // example base
        TableLayout table = b.table;
        for (int i=1;i<=10;i++) {
            TableRow row = new TableRow(this);
            TextView t1 = new TextView(this);
            TextView t2 = new TextView(this);
            t1.setText(n + " x " + i + " = ");

```

```

        t2.setText(String.valueOf(n*i));
        row.addView(t1);
        row.addView(t2);
        table.addView(row);
    }
}
}

```

activity_multiplication.xml

```

<?xml version="1.0" encoding="utf-8"?>
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <TableLayout xmlns:android="http://schemas.android.com/apk/res/android"
        android:id="@+id/table" android:layout_width="match_parent"
        android:layout_height="wrap_content" android:padding="12dp">
    </TableLayout>
</ScrollView>

```

Manifest note: No permissions required.

17) ListView demo with Toast on item click

SimpleListActivity.java

```

package com.example.madpracticals;

import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivitySimpleListBinding;

public class SimpleListActivity extends AppCompatActivity {
    private ActivitySimpleListBinding b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivitySimpleListBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());

        String[] items = {"Alpha", "Beta", "Gamma", "Delta", "Epsilon"};
        b.listView.setAdapter(new ArrayAdapter<>(this,

```

```

        android.R.layout.simple_list_item_1, items));
        b.listView.setOnItemClickListener((AdapterView<?> parent, View
view, int position, long id) ->
            Toast.makeText(SimpleListActivity.this, "Clicked: " +
items[position], Toast.LENGTH_SHORT).show()
        );
    }
}

```

activity_simple_list.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
android:orientation="vertical" android:padding="12dp"
android:layout_width="match_parent"
android:layout_height="match_parent">
    <ListView android:id="@+id/listView"
android:layout_width="match_parent"
android:layout_height="match_parent"/>
</LinearLayout>

```

Manifest note: No permissions required.

18) Send SMS using Intent

SmsActivity.java

```

package com.example.madpracticals;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivitySmsBinding;

public class SmsActivity extends AppCompatActivity {
    private ActivitySmsBinding b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivitySmsBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());

        b.btnSend.setOnClickListener(v -> {

```

```

        String num = b.etTo.getText().toString().trim();
        String msg = b.etMsg.getText().toString().trim();
        if (num.isEmpty() || msg.isEmpty()) {
            Toast.makeText(this, "Enter number and
message", Toast.LENGTH_SHORT).show(); return; }
        Intent i = new Intent(Intent.ACTION_SENDTO);
        i.setData(Uri.parse("smsto:" + Uri.encode(num)));
        i.putExtra("sms_body", msg);
        startActivity(i);
    });
}
}

```

activity_sms.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
android:orientation="vertical" android:padding="12dp"
android:layout_width="match_parent"
android:layout_height="match_parent">
    <EditText android:id="@+id/etTo" android:hint="Recipient number"
android:inputType="phone" android:layout_width="match_parent"
android:layout_height="wrap_content"/>
    <EditText android:id="@+id/etMsg" android:hint="Message"
android:layout_width="match_parent"
android:layout_height="wrap_content"/>
    <Button android:id="@+id/btnSend" android:text="Send SMS"
android:layout_width="match_parent"
android:layout_height="wrap_content"/>
</LinearLayout>

```

Manifest note: This uses ACTION_SENDTO and opens default SMS app; no SEND_SMS permission required.

19) Login validation (mca/android)

CourseLoginActivity.java

```

package com.example.madpracticals;

import android.os.Bundle;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import
com.example.madpracticals.databinding.ActivityCourseLoginBinding;

```

```

public class CourseLoginActivity extends AppCompatActivity {
    private ActivityCourseLoginBinding b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b = ActivityCourseLoginBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());

        b.btnLogin.setOnClickListener(v -> {
            String user = b.etUser.getText().toString().trim();
            String pass = b.etPass.getText().toString().trim();
            if (user.equals("mca") && pass.equals("mca123"))
                Toast.makeText(this, "MCA login success", Toast.LENGTH_SHORT).show();
            else if (user.equals("android") && pass.equals("and123"))
                Toast.makeText(this, "Android login success", Toast.LENGTH_SHORT).show();
            else Toast.makeText(this, "Invalid
credentials", Toast.LENGTH_SHORT).show();
        });
    }
}

```

activity_course_login.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:padding="12dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <EditText android:id="@+id/etUser" android:hint="Username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <EditText android:id="@+id/etPass" android:hint="Password"
        android:inputType="textPassword" android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <Button android:id="@+id/btnLogin" android:text="Login"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
</LinearLayout>

```

Manifest note: No permissions required.

20) Factorial using AlertDialog (show result in AlertDialog)

FactorialDialogActivity.java

```
package com.example.madpracticals;

import android.app.AlertDialog;
import android.os.Bundle;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import com.example.madpracticals.databinding.ActivityFactorialDialogBinding;
import java.math.BigInteger;

public class FactorialDialogActivity extends AppCompatActivity {
    private ActivityFactorialDialogBinding b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        b =
ActivityFactorialDialogBinding.inflate(getLayoutInflater());
        setContentView(b.getRoot());

        b.btnCompute.setOnClickListener(v -> {
            String s = b.etNum.getText().toString().trim();
            if (s.isEmpty()) { Toast.makeText(this, "Enter
number", Toast.LENGTH_SHORT).show(); return; }
            int n = Integer.parseInt(s);
            BigInteger res = BigInteger.ONE;
            for (int i=2;i<=n;i++) res =
res.multiply(BigInteger.valueOf(i));
            new AlertDialog.Builder(this)
                .setTitle("Factorial Result")
                .setMessage(n + "! = " + res.toString())
                .setPositiveButton("OK", null)
                .show();
        });
    }
}
```

activity_factorial_dialog.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
android:orientation="vertical" android:padding="12dp"
```



```
android:layout_width="match_parent"
android:layout_height="match_parent">
    <EditText android:id="@+id/etNum" android:inputType="number"
android:hint="Enter n" android:layout_width="match_parent"
android:layout_height="wrap_content"/>
    <Button android:id="@+id/btnCompute" android:text="Compute"
android:layout_width="match_parent"
android:layout_height="wrap_content"/>
</LinearLayout>
```

Manifest note: No permissions required.