

First is the simple calculator here is the activity_main.xml and MainActivity.java

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/linearLayout1"
        android:layout_marginLeft="10pt"
        android:layout_marginRight="10pt"
        android:layout_marginTop="3pt">
        <EditText
            android:layout_weight="1"
            android:layout_height="wrap_content"
            android:layout_marginRight="5pt"
            android:id="@+id/etNum1"
            android:layout_width="match_parent"
            android:inputType="numberDecimal">
        </EditText>
        <EditText
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:layout_marginLeft="5pt"
            android:id="@+id/etNum2"
            android:layout_width="match_parent"
            android:inputType="numberDecimal">
        </EditText>
    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/linearLayout2"
        android:layout_marginTop="4pt"
        android:layout_marginLeft="6pt"
        android:layout_marginRight="6pt">
        <ImageButton
            android:id="@+id/btnAdd"
            android:layout_width="50dp"
            android:layout_height="50dp"
            android:scaleType="fitCenter"
            android:src="@drawable/plus" />
        <ImageButton
            android:id="@+id/btnSub"
            android:layout_width="50dp"
            android:layout_height="50dp"
            android:scaleType="fitCenter"
            android:src="@drawable/sub" />
    </LinearLayout>
</LinearLayout>
```

```

        <ImageButton
            android:id="@+id/btnMult"
            android:layout_width="50dp"
            android:layout_height="50dp"
            android:scaleType="fitCenter"
            android:src="@drawable/mult" />

        <ImageButton
            android:id="@+id/btnDiv"
            android:layout_width="50dp"
            android:layout_height="50dp"
            android:scaleType="fitCenter"
            android:src="@drawable/div" />
    </LinearLayout>

    <TextView
        android:id="@+id/tvResult"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="5pt"
        android:layout_marginTop="3pt"
        android:layout_marginRight="5pt"
        android:gravity="center_horizontal"></TextView>
</LinearLayout>

```

MainActivity.java

```

package com.example.p0191_simplecalculator;

import android.app.Activity;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ImageButton;
import android.widget.TextView;

public class MainActivity extends Activity implements View.OnClickListener {

    EditText etNum2;
    EditText etNum1;

    ImageButton btnAdd;
    ImageButton btnSub;
    ImageButton btnMult;
    ImageButton btnDiv;

    TextView tvResult;

    String oper = "";

```

```

/** Called when the activity is first created. */
@Override
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    // find the elements
    etNum1 = (EditText) findViewById(R.id.etNum1);
    etNum2 = (EditText) findViewById(R.id.etNum2);

    btnAdd = (ImageButton) findViewById(R.id.btnAdd);
    btnSub = (ImageButton) findViewById(R.id.btnSub);
    btnMult = (ImageButton) findViewById(R.id.btnMult);
    btnDiv = (ImageButton) findViewById(R.id.btnDiv);

    tvResult = (TextView) findViewById(R.id.tvResult);

    // set a listener
    btnAdd.setOnClickListener(this);
    btnSub.setOnClickListener(this);
    btnMult.setOnClickListener(this);
    btnDiv.setOnClickListener(this);
}

@Override
public void onClick(View v) {
    // TODO Auto-generated method stub
    float num1 = 0;
    float num2 = 0;
    float result = 0;

    // check if the fields are empty
    if (TextUtils.isEmpty(etNum1.getText().toString())
        || TextUtils.isEmpty(etNum2.getText().toString())) {
        return;
    }

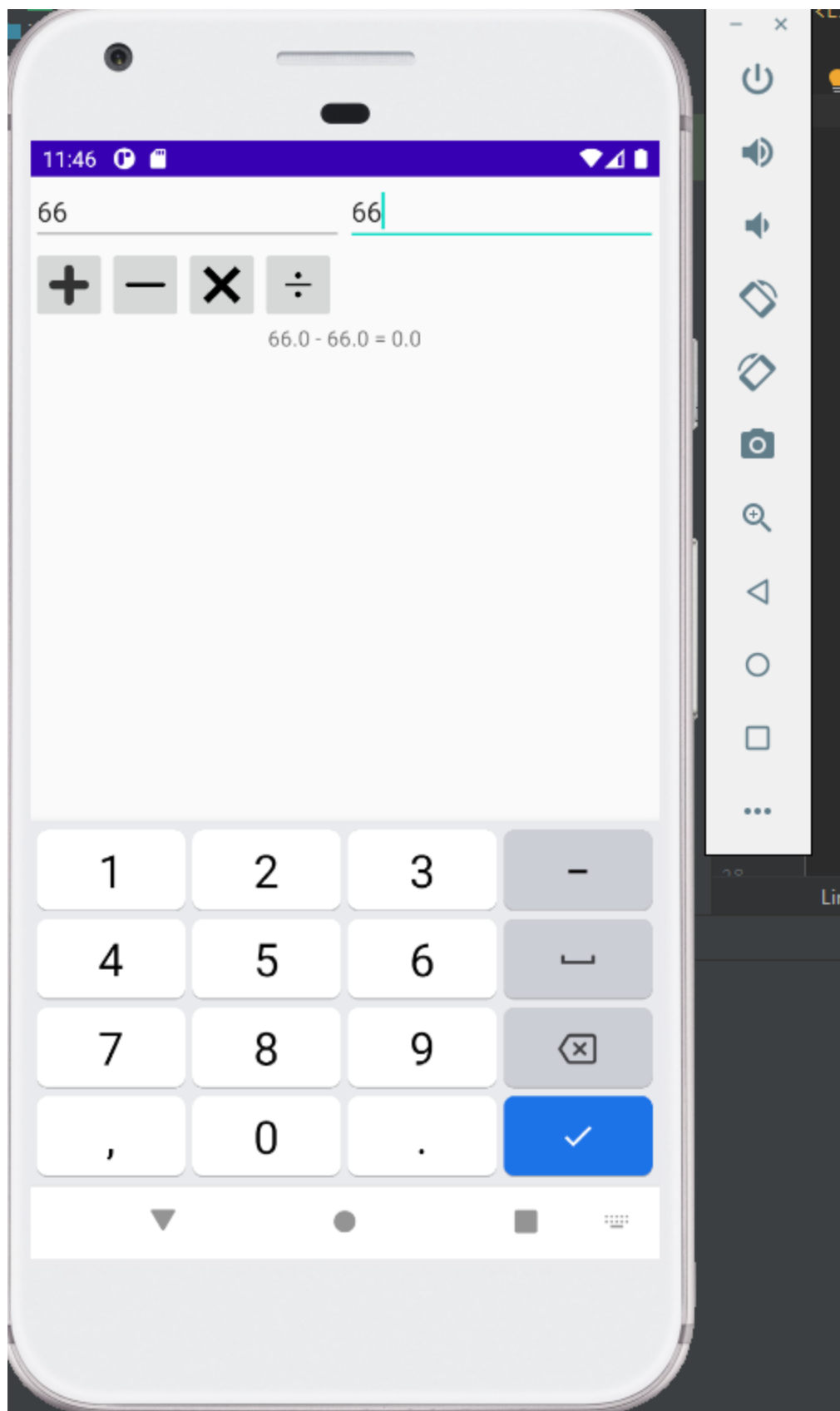
    // read EditText and fill variables with numbers
    num1 = Float.parseFloat(etNum1.getText().toString());
    num2 = Float.parseFloat(etNum2.getText().toString());

    // defines the button that has been clicked and performs the corresponding
operation
    // write operation into oper, we will use it later for output
    switch (v.getId()) {
        case R.id.btnAdd:
            oper = "+";
            result = num1 + num2;
            break;
        case R.id.btnSub:
            oper = "-";
            result = num1 - num2;
            break;
        case R.id.btnMult:

```

```
        oper = "*";
        result = num1 * num2;
        break;
    case R.id.btnDiv:
        oper = "/";
        result = num1 / num2;
        break;
    default:
        break;
}

// form the output line
tvResult.setText(num1 + " " + oper + " " + num2 + " = " + result);
}
}
```



Second part with Fragments

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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=".MainActivity">

    <fragment
        android:id="@+id/fragment"
        android:name="com.example.fragment.FragmentOne"
        android:layout_width="386dp"
        android:layout_height="492dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/button2" />

    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="selectFrag"
        android:text="Fragment 1"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="selectFrag"
        android:text="Fragment 2"
        app:layout_constraintTop_toBottomOf="@+id/button"
        tools:layout_editor_absoluteX="0dp" />
</android.support.constraint.ConstraintLayout>
```

MainActivity.java

```
package com.example.fragment;

import android.support.v4.app.Fragment;
import android.support.v4.app.FragmentManager;
import android.support.v4.app.FragmentTransaction;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
```

```

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    public void selectFrag(View view) {

        Fragment fr;

        if(view == findViewById(R.id.button))
            fr = new FragmentOne();
        else
            fr = new FragmentTwo();

        FragmentManager manager = getSupportFragmentManager();
        FragmentTransaction transaction = manager.beginTransaction();
        transaction.replace(R.id.fragment, fr);
        transaction.commit();

    }
}

```

Fragment_one.xml

```

<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#00BCD4"
    tools:context=".FragmentOne">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Fragment One"
        android:textAppearance="@style/TextAppearance.AppCompat.Display2"
        />

</FrameLayout>

```

Fragment_two.xml

```

<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#9C27B0">

```

```
tools:context=".FragmentOne">

<!-- TODO: Update blank fragment layout -->
<TextView
    android:layout_width="379dp"
    android:layout_height="154dp"
    android:text="Fragment Two"
    android:textAppearance="@style/TextAppearance.AppCompat.Display2" />

</FrameLayout>
```