

JAVA: MainActivity.java

```
package com.example.calculator;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import androidx.appcompat.app.AlertDialog;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Toast;
```

```
import android.widget.Button;
```

```
import android.widget.EditText;
```

```
import android.widget.TextView;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    double input1 = 0, input2 = 0;
```

```
    TextView edt1;
```

```
    TextView edt2;
```

```
    boolean Addition, Subtract, Multiplication, Division, mRemainder, decimal, Zero;
```

```
    Button btn0, btn1, btn2, btn3, btn4, btn5, btn6, btn7, btn8, btn9, btnAdd, btnSub,  
        btnMul, btnDivision, btnEqual, btnDel, btnDot, btnclear;
```

```
    AlertDialog.Builder builder;
```

@Override

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

```
    btn0 = (Button) findViewById(R.id.zero);
```

```
    btn1 = (Button) findViewById(R.id.one);
```

```
    btn2 = (Button) findViewById(R.id.two);
```

```
    btn3 = (Button) findViewById(R.id.three);
```

```
    btn4 = (Button) findViewById(R.id.four);
```

```
    btn5 = (Button) findViewById(R.id.five);
```

```
    btn6 = (Button) findViewById(R.id.six);
```

```
    btn7 = (Button) findViewById(R.id.seven);
```

```
    btn8 = (Button) findViewById(R.id.eight);
```

```
    btn9 = (Button) findViewById(R.id.nine);
```

```
    btnDot = (Button) findViewById(R.id.dot);
```

```
    btnAdd = (Button) findViewById(R.id.add);
```

```
    btnSub = (Button) findViewById(R.id.minus);
```

```
    btnMul = (Button) findViewById(R.id.mul);
```

```
    btnDivision = (Button) findViewById(R.id.div);
```

```
    btnClear = (Button) findViewById(R.id.clear);
```

```
    btnEqual = (Button) findViewById(R.id.equal);
```

```
    btnDel = (Button) findViewById(R.id.del);
```

```
    builder = new AlertDialog.Builder(this);
```

```
    edt1 = (TextView) findViewById(R.id.ip);
```

```
    edt2 = (TextView) findViewById(R.id.op);
```

```
    edt1.setText(null);
```

```

btn0.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        if(edt1.getText().length() > 1)
        {
            edt1.setText(edt1.getText() + "0");
        }

        if (edt1.getText().length() == 0) {
            edt1.setText(edt1.getText() + "0");
        }
        else
        {

            if (edt1.getText().length() == 1) {
                if (edt1.getText().toString().charAt(0) == '0') {
                    Toast toast = Toast.makeText(getApplicationContext(), "Error",
Toast.LENGTH_SHORT);
                    toast.show();

                }

                if (edt1.getText().toString().charAt(0) == '.') {

                    edt1.setText(edt1.getText() + "0");

                }
            }
        }
    }
}

```

```
}
```

```
}
```

```
}
```

```
});
```

```
btn1.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
        edt1.setText(edt1.getText() + "1");
```

```
    }
```

```
});
```

```
btn2.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
        edt1.setText(edt1.getText() + "2");
```

```
    }
```

```
});
```

```
btn3.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
        edt1.setText(edt1.getText() + "3");
```

```
    }
```

```
});
```

```
btn4.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "4");  
    }  
});
```

```
btn5.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "5");  
    }  
});
```

```
btn6.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "6");  
    }  
});
```

```
btn7.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "7");  
    }  
});
```

```
btn8.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "8");  
    }  
});
```

```
btn9.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText(edt1.getText() + "9");  
    }  
});
```

```
btnAdd.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        if (edt1.getText().length() != 0) {  
            input1 = Float.parseFloat(edt1.getText() + "");  
            edt2.setText(edt1.getText() + "+");  
            Addition = true;  
            decimal = false;  
            edt1.setText(null);  
        }  
    }  
});
```

```
btnSub.setOnClickListener(new View.OnClickListener() {
```

```

@Override
public void onClick(View v) {
    if (edt1.getText().length() != 0) {
        input1 = Float.parseFloat(edt1.getText() + "");
        edt2.setText(edt1.getText() + "-");
        Subtract = true;
        decimal = false;
        edt1.setText(null);
    }
}
});

```

```

btnMul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            edt2.setText(edt1.getText() + "*");
            Multiplication = true;
            decimal = false;
            edt1.setText(null);
        }
    }
});

```

```

btnDivision.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {

```

```

        input1 = Float.parseFloat(edt1.getText() + "");
        edt2.setText(edt1.getText() + "/"");
        Division = true;
        decimal = false;
        edt1.setText(null);
    }
}
});

```

```

btnEqual.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (Addition || Subtract || Multiplication || Division || mRemainder) {
            if (edt1.getText() == "") {
                input2 = 0;
                edt2.setText(edt2.getText() + "0");
            } else {
                StringBuffer copy=new StringBuffer(edt2.getText());
                copy.append(edt1.getText());
                input2 = Float.parseFloat(edt1.getText() + "");
                edt2.setText(copy);
            }
        }

        if (Addition) {

            edt1.setText(input1 + input2 + "");
            Addition = false;
        }
    }
}

```



```

    if (Subtract) {

        edt1.setText(input1 - input2 + "");

        Subtract = false;

    }

    if (Multiplication) {

        edt1.setText(input1 * input2 + "");

        Multiplication = false;

    }

    if (Division) {

        if(input2==0) {

            Toast toast =
Toast.makeText(getApplicationContext(),"Error",Toast.LENGTH_SHORT);

            toast.show();

            edt1.setText("Error");

        }

        else

        {

            edt1.setText(input1 / input2 + "");

        }

        Division = false;

    }

}

});

```

```
btnClear.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        edt1.setText("");  
        edt2.setText("");  
        input1 = 0.0;  
        input2 = 0.0;  
        decimal = false;  
    }  
});
```

```
btnDel.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        if(edt1.getText().length()>0){  
            CharSequence name= edt1.getText().toString();  
            edt1.setText(name.subSequence(0,name.length()-1));  
        }  
    }  
});
```

```
btnDot.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        if (decimal) {
```

```
        Toast toast =
Toast.makeText(getApplicationContext(),"Error",Toast.LENGTH_SHORT);

        toast.show();

        //do nothing or you can show the error
    } else {
        edt1.setText(edt1.getText() + ".");
        decimal = true;
    }

    }

});

}

}
```

XML: activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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"
    android:background="@android:color/background_dark"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">

        <TextView
            android:id="@+id/op"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginLeft="20dp"
            android:layout_marginTop="50dp"
            android:shadowColor="#FFFFFF"
            android:text=""
            android:textColor="#FFFFFF"
            android:textSize="36sp" />

        <TextView
```

```
        android:id="@+id/ip"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="15dp"
        android:shadowColor="#FFFFFF"
        android:text="@string/_0"
        android:textColor="#FFFFFF"
        android:textSize="36sp" />
</LinearLayout>
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginTop="221dp"
    android:orientation="horizontal">
```

```
<Button
    android:id="@+id/clear"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:background="@android:color/background_dark"
    android:text="@string/c"
    android:textColor="@android:color/white"
    android:textSize="30sp" />
```

```
<Button
    android:id="@+id/del"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@android:color/background_dark"
        android:text="@string/del"
        android:textColor="@android:color/white"
        android:textSize="30sp" />
</LinearLayout>
```

```
<TableLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginTop="270dp">
```

```
<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_weight="1">
```

```
<Button
    android:id="@+id/nine"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="@android:color/background_dark"
    android:padding="20dp"
    android:text="@string/_9"
    android:textColor="@android:color/white"
    android:textSize="30sp" />
```

<Button

```
    android:id="@+id/eight"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="@android:color/background_dark"
    android:padding="20dp"
    android:text="@string/_8"
    android:textColor="@android:color/white"
    android:textSize="30sp" />
```

<Button

```
    android:id="@+id/seven"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="@android:color/background_dark"
    android:padding="20dp"
    android:text="@string/_7"
    android:textColor="@android:color/white"
    android:textSize="30sp" />
```

<Button

```
    android:id="@+id/mul"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="@android:color/holo_red_dark"
```

```
        android:padding="20dp"
        android:text="@string/x"
        android:textColor="@android:color/primary_text_dark"
        android:textSize="30sp" />
</TableRow>
```

```
<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_weight="1">
```

```
<Button
    android:id="@+id/six"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="@android:color/background_dark"
    android:padding="20dp"
    android:text="@string/_6"
    android:textColor="#FFFFFF"
    android:textSize="30sp" />
```

```
<Button
    android:id="@+id/five"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="@android:color/background_dark"
    android:padding="20dp"
```



```
android:text="@string/_5"  
android:textColor="#FFFFFF"  
android:textSize="30sp" />
```

```
<Button
```

```
    android:id="@+id/four"  
    android:layout_width="wrap_content"  
    android:layout_height="match_parent"  
    android:layout_weight="1"  
    android:background="@android:color/background_dark"  
    android:padding="20dp"  
    android:text="@string/_4"  
    android:textColor="#FFFFFF"  
    android:textSize="30sp" />
```

```
<Button
```

```
    android:id="@+id/div"  
    android:layout_width="wrap_content"  
    android:layout_height="match_parent"  
    android:layout_weight="1"  
    android:background="@android:color/holo_red_dark"  
    android:padding="20dp"  
    android:text="@string/div"  
    android:textColor="#FFFFFF"  
    android:textSize="30sp" />
```

```
</TableRow>
```

```
<TableRow
```

```
    android:layout_width="match_parent"
```

```
android:layout_height="match_parent"
android:layout_weight="1">
```

```
<Button
    android:id="@+id/three"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="@android:color/background_dark"
    android:padding="20dp"
    android:text="@string/_3"
    android:textColor="#FFFFFF"
    android:textSize="30sp" />
```

```
<Button
    android:id="@+id/two"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="@android:color/background_dark"
    android:padding="20dp"
    android:text="@string/_2"
    android:textColor="#FFFFFF"
    android:textSize="30sp" />
```

```
<Button
    android:id="@+id/one"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
```

```
android:layout_weight="1"
android:background="@android:color/background_dark"
android:padding="20dp"
android:text="@string/_1"
android:textColor="#FFFFFF"
android:textSize="30sp" />
```

<Button

```
android:id="@+id/minus"
android:layout_width="wrap_content"
android:layout_height="match_parent"
android:layout_weight="1"
android:background="@android:color/holo_red_dark"
android:padding="20dp"
android:text="@string/minus"
android:textColor="#FFFFFF"
android:textSize="30sp" />
```

</TableRow>

<TableRow

```
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_weight="1">
```

<Button

```
android:id="@+id/dot"
android:layout_width="wrap_content"
android:layout_height="match_parent"
android:layout_weight="1"
```

```
android:background="@android:color/background_dark"
android:padding="20dp"
android:text="@string/dot"
android:textColor="#FFFFFF"
android:textSize="30sp" />
```

<Button

```
android:id="@+id/zero"
android:layout_width="wrap_content"
android:layout_height="match_parent"
android:layout_weight="1"
android:background="@android:color/background_dark"
android:padding="20dp"
android:text="@string/_0"
android:textColor="#FFFFFF"
android:textSize="30sp" />
```

<Button

```
android:id="@+id/equal"
android:layout_width="wrap_content"
android:layout_height="match_parent"
android:layout_weight="1"
android:background="@android:color/background_dark"
android:padding="20dp"
android:text="@string/equal"
android:textColor="#FFFFFF"
android:textSize="30sp" />
```

<Button

```
        android:id="@+id/add"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@android:color/holo_red_dark"
        android:padding="20dp"
        android:text="@string/add"
        android:textColor="#FFFFFF"
        android:textSize="30sp" />
    </TableRow>

</TableLayout>

</RelativeLayout>
```

XML: strings.xml

```
<resources>

  <string name="app_name">Calculator</string>

  <string name="_0">0</string>
  <string name="c">C</string>
  <string name="del">del</string>
  <string name="_9">9</string>
  <string name="_8">8</string>
  <string name="_7">7</string>
  <string name="x">X</string>
  <string name="_6">6</string>
  <string name="_5">5</string>
  <string name="_4">4</string>
  <string name="div">/</string>
  <string name="_3">3</string>
  <string name="_2">2</string>
  <string name="_1">1</string>
  <string name="minus">-</string>
  <string name="dot">.</string>
  <string name="equal">=</string>
  <string name="add">+</string>

</resources>
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.calculator">

    <application
        android:allowBackup="true"
        android:icon="@drawable/cal"
        android:label="@string/app_name"
        android:roundIcon="@drawable/cal"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

build.gradle(Module:app)

```
apply plugin: 'com.android.application'
```

```
android {
```

```
    compileSdkVersion 30
```

```
    buildToolsVersion "30.0.2"
```

```
    defaultConfig {
```

```
        applicationId "com.example.calculator"
```

```
        minSdkVersion 16
```

```
        targetSdkVersion 30
```

```
        versionCode 1
```

```
        versionName "1.0"
```

```
        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
```

```
    }
```

```
    buildTypes {
```

```
        release {
```

```
            minifyEnabled false
```

```
            proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'), 'proguard-rules.pro'
```

```
        }
```

```
    }
```

```
}
```

```
dependencies {
```



```
implementation fileTree(dir: "libs", include: ["*.jar"])
implementation 'androidx.appcompat:appcompat:1.2.0'
implementation 'androidx.constraintlayout:constraintlayout:2.0.1'
testImplementation 'junit:junit:4.12'
androidTestImplementation 'androidx.test.ext:junit:1.1.2'
androidTestImplementation 'androidx.test.espresso:espresso-core:3.3.0'

}
```

App User Interface



