**Calculator App**

A PROJECT REPORT

**Submitted by**

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# SHRI DATTA MEGHE POLYTECHNIC

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**Xml file**

<?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"  
 tools:context=".MainActivity">  
  
 <Button  
 android:id="@+id/button1"  
 android:layout\_width="101dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginTop="549dp"  
 android:text="9" />  
  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="100dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginLeft="3dp"  
 android:layout\_marginTop="549dp"  
 android:layout\_toRightOf="@+id/button1"  
 android:text="8" />  
  
 <Button  
 android:id="@+id/button3"  
 android:layout\_width="103dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginLeft="2dp"  
 android:layout\_marginTop="547dp"  
 android:layout\_toRightOf="@+id/button2"  
 android:text="7" />  
  
 <Button  
 android:id="@+id/button4"  
 android:layout\_width="103dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/button3"  
 android:text="6" />  
  
 <Button  
 android:id="@+id/button5"  
 android:layout\_width="100dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/button1"  
 android:layout\_marginTop="0dp"  
 android:layout\_toRightOf="@+id/button6"  
 android:text="4" />  
  
 <Button  
 android:id="@+id/button6"  
 android:layout\_width="102dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/button1"  
 android:layout\_toRightOf="@+id/button1"  
 android:text="5" />  
  
 <Button  
 android:id="@+id/button7"  
 android:layout\_width="101dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/button4"  
 android:text="3" />  
  
 <Button  
 android:id="@+id/button8"  
 android:layout\_width="102dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/button6"  
 android:layout\_toRightOf="@+id/button7"  
 android:text="2" />  
  
 <Button  
 android:id="@+id/button9"  
 android:layout\_width="102dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/button5"  
 android:layout\_toRightOf="@id/button8"  
 android:text="1" />  
  
 <Button  
 android:id="@+id/button10"  
 android:layout\_width="103dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginLeft="0dp"  
 android:layout\_marginTop="550dp"  
 android:layout\_toRightOf="@id/button3"  
 android:text="/" />  
  
 <Button  
 android:id="@+id/button11"  
 android:layout\_width="98dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/button10"  
 android:layout\_toRightOf="@id/button5"  
 android:text="\*" />  
  
 <Button  
 android:id="@+id/button12"  
 android:layout\_width="101dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/button11"  
 android:layout\_toRightOf="@id/button9"  
 android:text="+" />  
  
 <Button  
 android:id="@+id/button13"  
 android:layout\_width="101dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/button7"  
 android:text="clear" />  
  
 <Button  
 android:id="@+id/button14"  
 android:layout\_width="105dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/button8"  
 android:layout\_marginLeft="3dp"  
 android:layout\_toRightOf="@id/button13"  
 android:text="0" />  
  
 <Button  
 android:id="@+id/button15"  
 android:layout\_width="99dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/button9"  
 android:layout\_alignParentBottom="true"  
 android:layout\_marginLeft="0dp"  
 android:layout\_marginBottom="1dp"  
 android:layout\_toRightOf="@id/button14"  
 android:text="=" />  
  
 <Button  
 android:id="@+id/button16"  
 android:layout\_width="102dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/button12"  
 android:layout\_marginLeft="3dp"  
 android:layout\_toRightOf="@id/button15"  
 android:text="-" />  
  
 <TextView  
 android:id="@+id/tvcontrol"  
 android:layout\_width="272dp"  
 android:layout\_height="119dp"  
 android:layout\_below="@id/button16"  
 android:layout\_marginLeft="100dp"  
 android:layout\_marginTop="-462dp"  
 android:layout\_marginBottom="500dp"  
 android:text=""  
 android:textSize="50dp" />  
  
 <TextView  
 android:id="@+id/tvresult"  
 android:layout\_width="210dp"  
 android:layout\_height="129dp"  
 android:layout\_below="@id/button16"  
 android:layout\_marginLeft="100dp"  
 android:layout\_marginTop="-642dp"  
 android:layout\_marginBottom="500dp"  
 android:text=""  
 android:textSize="50dp" />  
</RelativeLayout>

**Java file**

package com.example.calculator;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
  
public class MainActivity extends AppCompatActivity {  
 private Button zero;  
 private Button one;  
 private Button two;  
 private Button three;  
 private Button four;  
 private Button five;  
 private Button six;  
 private Button seven;  
 private Button eight;  
 private Button nine;  
 private Button add;  
 private Button sub;  
 private Button div;  
 private Button mul;  
 private Button division;  
 private Button equal;  
 private Button clear;  
 private TextView info;  
 private TextView result;  
 private final char ADDITION = '+';  
 private final char SUBTRACTION = '-';  
 private final char MULTIPLICATION = '\*';  
 private final char DIVISION = '/';  
 private double val1 = Double.*NaN*;  
 private double val2;  
 private char ACTION;  
 private final char EQU = '0';  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 setupUIVeiws();  
  
 zero.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "0");  
 }  
 });  
 one.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "1");  
 }  
 });  
 two.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "2");  
 }  
 });  
 three.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "3");  
 }  
 });  
 four.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "4");  
 }  
 });  
 five.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "5");  
 }  
 });  
 six.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "6");  
 }  
 });  
 seven.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "7");  
 }  
 });  
 eight.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "8");  
 }  
 });  
 nine.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString() + "9");  
 }  
 });  
 add.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION = ADDITION;  
 result.setText(String.*valueOf*(val1) + "+");  
 info.setText(null);  
 }  
 });  
 sub.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION = SUBTRACTION;  
 result.setText(String.*valueOf*(val1) + "-");  
 info.setText(null);  
 }  
 });  
 mul.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION = MULTIPLICATION;  
 result.setText(String.*valueOf*(val1) + "\*");  
 info.setText(null);  
 }  
 });  
 division.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION = DIVISION;  
 result.setText(String.*valueOf*(val1) + "/");  
 info.setText(null);  
 }  
 });  
 equal.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION = EQU;  
 result.setText(result.getText().toString() + String.*valueOf*(val2) + "=" + String.*valueOf*(val1));  
 info.setText(null);  
 }  
 });  
 clear.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 if(info.getText().length() > 0){  
 CharSequence name = info.getText().toString();  
 info.setText(name.subSequence(0,name.length()-1));  
 }  
 else {  
 val1 = Double.*NaN*;  
 val2 = Double.*NaN*;  
 info.setText(null);  
 result.setText(null);  
 }  
 }  
 });  
 }  
  
 private void setupUIVeiws () {  
 nine = (Button)findViewById(R.id.*button1*);  
 eight = (Button)findViewById(R.id.*button2*);  
 seven = (Button)findViewById(R.id.*button3*);  
 six = (Button)findViewById(R.id.*button4*);  
 four = (Button)findViewById(R.id.*button5*);  
 five = (Button)findViewById(R.id.*button6*);  
 three = (Button)findViewById(R.id.*button7*);  
 two = (Button)findViewById(R.id.*button8*);  
 one = (Button)findViewById(R.id.*button9*);  
 division = (Button)findViewById(R.id.*button10*);  
 mul = (Button)findViewById(R.id.*button11*);  
 add = (Button)findViewById(R.id.*button12*);  
 clear = (Button)findViewById(R.id.*button13*);  
 zero = (Button)findViewById(R.id.*button14*);  
 equal = (Button)findViewById(R.id.*button15*);  
 sub = (Button)findViewById(R.id.*button16*);  
 info = (TextView)findViewById(R.id.*tvcontrol*);  
 result = (TextView)findViewById(R.id.*tvresult*);  
 }  
 private void compute(){  
 if (!Double.*isNaN*(val1)){  
 val2 = Double.*parseDouble*(info.getText().toString());  
 switch (ACTION){  
 case ADDITION:  
 val1 = val1 + val2;  
 break;  
 case SUBTRACTION:  
 val1 = val1 - val2;  
 break;  
 case MULTIPLICATION:  
 val1 = val1 \* val2;  
 break;  
 case DIVISION:  
 val1 = val1 / val2;  
 break;  
 case EQU:  
 break;  
 }  
 }  
 else {  
 val1 = Double.*parseDouble*(info.getText().toString());  
 }  
 }  
}

**Output**

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