package com.example.calculator;

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

private EditText result;

private EditText newNumber;

private TextView displayOperation;

// Variables to hold the operands and type of calculations

private Double operand1 = null;

private Double operand2 = null;

private String pendingOperation = "=";

private static final String STATE\_PENDING\_OPERATION = "PendingOperation";

private static final String STATE\_OPERAND1 = "Operand1";

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

result = (EditText) findViewById(R.id.result);

newNumber = (EditText) findViewById(R.id.newNumber);

displayOperation = (TextView) findViewById(R.id.operation);

Button button0 = (Button) findViewById(R.id.button0);

Button button1 = (Button) findViewById(R.id.button1);

Button button2 = (Button) findViewById(R.id.button2);

Button button3 = (Button) findViewById(R.id.button3);

Button button4 = (Button) findViewById(R.id.button4);

Button button5 = (Button) findViewById(R.id.button5);

Button button6 = (Button) findViewById(R.id.button6);

Button button7 = (Button) findViewById(R.id.button7);

Button button8 = (Button) findViewById(R.id.button8);

Button button9 = (Button) findViewById(R.id.button9);

Button buttonDot = (Button) findViewById(R.id.buttonDecimal);

Button buttonEquals = (Button) findViewById(R.id.buttonEqual);

Button buttonDivide = (Button) findViewById(R.id.buttonDivide);

Button buttonMultiply = (Button) findViewById(R.id.buttonMultiply);

Button buttonMinus = (Button) findViewById(R.id.buttonMinus);

Button buttonPlus = (Button) findViewById(R.id.buttonPlus);

View.OnClickListener listener = new View.OnClickListener() {

@Override

public void onClick(View v) {

Button b = (Button) v;

newNumber.append(b.getText().toString());

}

};

button0.setOnClickListener(listener);

button1.setOnClickListener(listener);

button2.setOnClickListener(listener);

button3.setOnClickListener(listener);

button4.setOnClickListener(listener);

button5.setOnClickListener(listener);

button6.setOnClickListener(listener);

button7.setOnClickListener(listener);

button8.setOnClickListener(listener);

button9.setOnClickListener(listener);

buttonDot.setOnClickListener(listener);

View.OnClickListener opListener = new View.OnClickListener() {

@Override

public void onClick(View v) {

Button b = (Button) v;

String op = b.getText().toString();

String value = newNumber.getText().toString();

try {

Double doubleValue = Double.valueOf(value);

performOperation(doubleValue, op);

} catch (NumberFormatException e) {

newNumber.setText("");

}

pendingOperation = op;

displayOperation.setText(pendingOperation);

}

};

buttonEquals.setOnClickListener(opListener);

buttonDivide.setOnClickListener(opListener);

buttonMultiply.setOnClickListener(opListener);

buttonMinus.setOnClickListener(opListener);

buttonPlus.setOnClickListener(opListener);

Button buttonNeg = (Button) findViewById(R.id.buttonNeg);

buttonNeg.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String value = newNumber.getText().toString();

if (value.length() == 0) {

newNumber.setText("-");

} else {

try {

Double doubleValue = Double.valueOf(value);

doubleValue \*= -1;

newNumber.setText(doubleValue.toString());

} catch (NumberFormatException e) {

// newNumber was a minus sign or a dot, so clear it.

newNumber.setText("");

}

}

}

});

}

@Override

protected void onSaveInstanceState(@NonNull Bundle outState) {

outState.putString(STATE\_PENDING\_OPERATION, pendingOperation);

if (operand1 != null) {

outState.putDouble(STATE\_OPERAND1, operand1);

}

super.onSaveInstanceState(outState);

}

@Override

protected void onRestoreInstanceState(@NonNull Bundle savedInstanceState) {

super.onRestoreInstanceState(savedInstanceState);

pendingOperation = savedInstanceState.getString(STATE\_PENDING\_OPERATION);

operand1 = savedInstanceState.getDouble(STATE\_OPERAND1);

displayOperation.setText(pendingOperation);

}

private void performOperation(Double value, String operation) {

if (null == operand1) {

operand1 = value;

} else {

operand2 = value;

if (pendingOperation.equals("=")) {

pendingOperation = operation;

}

switch (pendingOperation) {

case "=":

operand1 = operand2;

break;

case "/":

if (operand2 == 0) {

operand1 = 0.0;

} else {

operand1 /= operand2;

}

break;

case "x":

operand1 \*= operand2;

break;

case "-":

operand1 -= operand2;

break;

case "+":

operand1 += operand2;

break;

}

}

result.setText(operand1.toString());

newNumber.setText("");

}

}