Program2

**Kotlin**

package com.example.p1

import androidx.appcompat.app.AppCompatActivity

import android.os.Bundle

import android.view.View

import android.widget.Button

import android.widget.TextView

import net.objecthunter.exp4j.ExpressionBuilder

class MainActivity : AppCompatActivity() {

lateinit var txtInput: TextView

var lastNumeric: Boolean = false

var stateError: Boolean = false

var lastDot: Boolean = false

override fun onCreate(savedInstanceState: Bundle?) {

super.onCreate(savedInstanceState)

setContentView(R.layout.activity\_main)

txtInput = findViewById(R.id.txtInput)

}

fun onDigit(view: View) {

if (stateError) {

txtInput.text = (view as Button).text

stateError = false

} else {

txtInput.append((view as Button).text)

}

lastNumeric = true

}

fun onDecimalPoint(view: View) {

if (lastNumeric && !stateError && !lastDot) {

txtInput.append(".")

lastNumeric = false

lastDot = true

}

}

fun onOperator(view: View) {

if (lastNumeric && !stateError) {

txtInput.append((view as Button).text)

lastNumeric = false

lastDot = false

}

}

fun onClear(view: View) {

this.txtInput.text = ""

lastNumeric = false

stateError = false

lastDot = false

}

fun onEqual(view: View) {

if (lastNumeric && !stateError) {

val txt = txtInput.text.toString()

val expression = ExpressionBuilder(txt).build()

try {

val result = expression.evaluate()

txtInput.text = result.toString()

lastDot = true // Result contains a dot

} catch (ex: ArithmeticException) {

txtInput.text = "Error"

stateError = true

lastNumeric = false

}

}

}

}

**XML**

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.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">

<TextView

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:ems="10"

android:textSize="48sp"

android:background="#efefef"

android:id="@+id/txtInput"

android:gravity="right|center\_vertical"

android:maxLength="12"

android:layout\_marginLeft="8dp"

android:layout\_marginEnd="8dp"

android:layout\_marginStart="8dp"

app:layout\_constraintTop\_toTopOf="parent"

android:layout\_marginRight="8dp"/>

<TableLayout

android:layout\_width="match\_parent"

android:layout\_height="0dp"

android:layout\_marginTop="8dp"

app:layout\_goneMarginTop="8dp"

android:layout\_marginLeft="8dp"

android:layout\_marginBottom="8dp"

android:layout\_marginRight="8dp"

app:layout\_constraintLeft\_toLeftOf="parent"

app:layout\_constraintRight\_toRightOf="parent"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/txtInput"

android:gravity="fill">

<TableRow

android:layout\_width="match\_parent"

android:layout\_height="0dp"

android:layout\_weight="1"

android:gravity="center">

<Button

android:text="7"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnSeven"/>

<Button

android:text="8"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnEight"/>

<Button

android:text="9"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnNine"/>

<Button

android:text="/"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onOperator"

android:id="@+id/btnDivide"/>

</TableRow>

<TableRow

android:layout\_width="match\_parent"

android:layout\_height="0dp"

android:layout\_weight="1"

android:gravity="center">

<Button

android:text="4"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnFour"/>

<Button

android:text="5"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnFive"/>

<Button

android:text="6"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnSix"/>

<Button

android:text="\*"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onOperator"

android:id="@+id/btnMultiply"/>

</TableRow>

<TableRow

android:layout\_width="match\_parent"

android:layout\_height="0dp"

android:layout\_weight="1"

android:gravity="center">

<Button

android:text="1"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnOne"/>

<Button

android:text="2"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnTwo"/>

<Button

android:text="3"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnThree"/>

<Button

android:text="-"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onOperator"

android:id="@+id/btnSubtract"/>

</TableRow>

<TableRow

android:layout\_width="match\_parent"

android:layout\_height="0dp"

android:layout\_weight="1"

android:gravity="center">

<Button

android:text="."

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDecimalPoint"

android:id="@+id/btnDecimal"/>

<Button

android:text="0"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onDigit"

android:id="@+id/btnZero"/>

<Button

android:text="CLR"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onClear"

android:id="@+id/btnClear"/>

<Button

android:text="+"

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onOperator"

android:id="@+id/btnAdd"/>

</TableRow>

<TableRow

android:layout\_width="match\_parent"

android:layout\_height="0dp"

android:layout\_weight="1">

<Button

android:text="="

android:layout\_width="0dp"

android:layout\_weight="1"

android:layout\_height="match\_parent"

android:onClick="onEqual"

android:id="@+id/btnEqual"/>

</TableRow>

</TableLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

**GRADLE**

plugins {

id 'com.android.application'

id 'kotlin-android'

}

android {

compileSdkVersion 31

buildToolsVersion "30.0.3"

defaultConfig {

applicationId "com.example.p1"

minSdkVersion 16

targetSdkVersion 31

versionCode 1

versionName "1.0"

testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"

}

buildTypes {

release {

minifyEnabled false

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

}

}

compileOptions {

sourceCompatibility JavaVersion.VERSION\_1\_8

targetCompatibility JavaVersion.VERSION\_1\_8

}

kotlinOptions {

jvmTarget = '1.8'

}

}

dependencies {

implementation "org.jetbrains.kotlin:kotlin-stdlib:$kotlin\_version"

implementation 'androidx.core:core-ktx:1.7.0'

implementation 'androidx.appcompat:appcompat:1.4.1'

implementation 'com.google.android.material:material:1.5.0'

implementation 'androidx.constraintlayout:constraintlayout:2.1.3'

implementation 'net.objecthunter:exp4j:0.4.8'

testImplementation 'junit:junit:4.+'

androidTestImplementation 'androidx.test.ext:junit:1.1.3'

androidTestImplementation 'androidx.test.espresso:espresso-core:3.4.0'

}