

# ANDROID ASSIGNMENT CALCULATOR

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## activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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/black"
    android:orientation="vertical">

    <TextView
        android:id="@+id/tvExpression"
        android:layout_width="wrap_content"
        android:layout_height="80sp"
        android:textColor="@color/numberButton"
        android:gravity="end"
        android:ellipsize="start"
        android:textSize="40sp"
        android:singleLine="true"/>

    <TextView
        android:id="@+id/tvResult"
        android:layout_width="wrap_content"
        android:layout_height="80sp"
        android:textColor="@color/numberButton"
        android:ellipsize="end"
        android:gravity="end"
        android:textSize="30sp"
        android:singleLine="true"/>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="0dp"
            android:layout_weight="1"
            android:orientation="horizontal">
            <TextView
                android:id="@+id/tvClear"
                style="@style/NumberButtonStyle"
                android:text="CE"/>

            <TextView
                android:id="@+id/tvOpen"
                style="@style/NumberButtonStyle"
                android:text="("/>

            <TextView
```

```

        android:id="@+id/tvClose"
        style="@style/NumberButtonStyle"
        android:text=")"/>

<TextView
    android:id="@+id/tvDivide"
    style="@style/NumberButtonStyle"
    android:text="/" />
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">

    <TextView
        android:id="@+id/tvSeven"
        style="@style/NumberButtonStyle"
        android:text="7"/>

    <TextView
        android:id="@+id/tvEight"
        style="@style/NumberButtonStyle"
        android:text="8"/>

    <TextView
        android:id="@+id/tvNine"
        style="@style/NumberButtonStyle"
        android:text="9"/>

    <TextView
        android:id="@+id/tvMul"
        style="@style/NumberButtonStyle"
        android:text="*" />
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">

    <TextView
        android:id="@+id/tvFour"
        style="@style/NumberButtonStyle"
        android:text="4"/>

    <TextView
        android:id="@+id/tvFive"
        style="@style/NumberButtonStyle"
        android:text="5"/>

    <TextView
        android:id="@+id/tvSix"
        style="@style/NumberButtonStyle"
        android:text="6"/>

    <TextView

```

```

        android:id="@+id/tvMinus"
        style="@style/NumberButtonStyle"
        android:text="-"/>
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">

    <TextView
        android:id="@+id/tvOne"
        style="@style/NumberButtonStyle"
        android:text="1"/>

    <TextView
        android:id="@+id/tvTwo"
        style="@style/NumberButtonStyle"
        android:text="2"/>

    <TextView
        android:id="@+id/tvThree"
        style="@style/NumberButtonStyle"
        android:text="3"/>

    <TextView
        android:id="@+id/tvPlus"
        style="@style/NumberButtonStyle"
        android:text="+"/>
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">

    <TextView
        android:id="@+id/tvDot"
        style="@style/NumberButtonStyle"
        android:text="."/>

    <TextView
        android:id="@+id/tvZero"
        style="@style/NumberButtonStyle"
        android:text="0"/>

    <ImageView
        android:id="@+id/tvBack"
        style="@style/NumberButtonStyle"
        android:src="@drawable/backspace"
        android:scaleType="center"/>

    <TextView
        android:id="@+id/tvEquals"
        style="@style/NumberButtonStyle"
        android:text="="/>

```

</LinearLayout>

</LinearLayout>

</LinearLayout>

## MainActivity.kt

```
package com.example.calculator

import android.support.v7.app.AppCompatActivity
import android.os.Bundle
import kotlinx.android.synthetic.main.activity_main.*
import net.objecthunter.exp4j.ExpressionBuilder

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        tvOne.setOnClickListener { appendOnExpresstion( "1", true) }
        tvTwo.setOnClickListener { appendOnExpresstion( "2", true) }
        tvThree.setOnClickListener { appendOnExpresstion( "3", true) }
        tvFour.setOnClickListener { appendOnExpresstion( "4", true) }
        tvFive.setOnClickListener { appendOnExpresstion( "5", true) }
        tvSix.setOnClickListener { appendOnExpresstion( "6", true) }
        tvSeven.setOnClickListener { appendOnExpresstion( "7", true) }
        tvEight.setOnClickListener { appendOnExpresstion( "8", true) }
        tvNine.setOnClickListener { appendOnExpresstion( "9", true) }
        tvZero.setOnClickListener { appendOnExpresstion( "0", true) }
        tvDot.setOnClickListener { appendOnExpresstion( ".", true) }

        tvPlus.setOnClickListener { appendOnExpresstion( "+", false) }
        tvMinus.setOnClickListener { appendOnExpresstion( "-", false) }
        tvMul.setOnClickListener { appendOnExpresstion( "*", false) }
        tvDivide.setOnClickListener { appendOnExpresstion( "/", false) }
        tvOpen.setOnClickListener { appendOnExpresstion( "(", false) }
        tvClose.setOnClickListener { appendOnExpresstion( ")", false) }

        tvClear.setOnClickListener{
            tvExpression.text = ""
            tvResult.text = ""
        }

        tvBack.setOnClickListener {
            val string = tvExpression.text.toString()
            if(string.isNotEmpty()){
                tvExpression.text = string.substring(0,string.length-1)
            }
            tvResult.text = ""
        }
        tvEquals.setOnClickListener{
            try {
                val expression =
ExpressionBuilder(tvExpression.text.toString()).build()
                val result = expression.evaluate()
                val longResult = result.toLong()
                if(result == longResult.toDouble())
                    tvResult.text = longResult.toString()
                else
                    tvResult.text = result.toString()
            }
        }
    }
}
```

```

        catch (e:Exception){
            Log.d("Exception", "message : " + e.message)
        }
    }

}

fun appendOnExpresstion( string: String, canClear : Boolean) {
    if(canClear){
        tvResult.text = ""
        tvExpression.append(string)
    }else{
        tvExpression.append(tvResult.text)
        tvExpression.append(string)
        tvResult.text = ""
    }
}
}

```

## Build.gradle(:app)

```
apply plugin: 'com.android.application'
apply plugin: 'kotlin-android'
apply plugin: 'kotlin-android-extensions'

android {
    compileSdkVersion 30
    buildToolsVersion "30.0.2"

    defaultConfig {
        applicationId "com.example.calculator"
        minSdkVersion 15
        targetSdkVersion 30
        versionCode 1
        versionName "1.0"

        testInstrumentationRunner "android.support.test.runner.AndroidJUnitRunner"
    }

    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'),
'proguard-rules.pro'
        }
    }
}

dependencies {
    implementation fileTree(dir: "libs", include: ["*.jar"])
    implementation "org.jetbrains.kotlin:kotlin-stdlib:$kotlin_version"
    //noinspection GradleCompatible
    implementation 'com.android.support:appcompat-v7:26.1.0'

    implementation 'net.objecthunter:exp4j:0.4.8'
    testImplementation 'junit:junit:4.12'
    androidTestImplementation 'com.android.support.test:runner:1.0.1'
    androidTestImplementation 'com.android.support.test.espresso:espresso-
core:3.0.2'
}
```

## Styles.xml

```
resources>
  <!-- Base application theme. -->
  <style name="AppTheme" parent="Theme.AppCompat.Light.DarkActionBar">
    <!-- Customize your theme here. -->
    <item name="colorPrimary">@color/colorPrimary</item>
    <item name="colorPrimaryDark">@color/colorPrimaryDark</item>
    <item name="colorAccent">@color/colorAccent</item>
  </style>

  <style name="ActionButtonStyle">
    <item name="android:layout_width">0dp</item>
    <item name="android:layout_height">match_parent</item>
    <item name="android:layout_weight">1</item>
    <item name="android:background">@color/actionButton</item>
    <item name="android:textSize">21sp</item>
    <item name="android:textColor">@android:color/white</item>
    <item name="android:layout_gravity">center</item>
    <item name="android:layout_margin">0.5dp</item>
  </style>

  <style name="NumberButtonStyle">
    <item name="android:layout_width">0dp</item>
    <item name="android:layout_height">match_parent</item>
    <item name="android:layout_weight">1</item>
    <item name="android:background">@color/numberButton</item>
    <item name="android:textSize">21sp</item>
    <item name="android:textColor">@android:color/white</item>
    <item name="android:layout_gravity">center</item>
    <item name="android:layout_margin">0.5dp</item>
  </style>

</resources>
```