**CALCULATOR USING GRID LAYOUT**

**XML CODE:**

**<?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"**

**android:background="#F6CACA"**

**tools:context=".MainActivity">**

**<android.widget.GridLayout**

**android:id="@+id/gridLayout"**

**android:layout\_width="398dp"**

**android:layout\_height="496dp"**

**android:layout\_marginStart="1dp"**

**android:layout\_marginTop="45dp"**

**android:layout\_marginEnd="1dp"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/edt1">**

**<Button**

**android:id="@+id/button2"**

**android:layout\_width="100dp"**

**android:layout\_height="60dp"**

**android:text="C"**

**android:textSize="20sp"**

**app:layout\_column="0"**

**app:layout\_row="0" />**

**<Button**

**android:id="@+id/button3"**

**android:layout\_width="98dp"**

**android:layout\_height="60dp"**

**android:text="( )"**

**android:textSize="20sp"**

**app:layout\_column="1"**

**app:layout\_row="0" />**

**<Button**

**android:id="@+id/button4"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="60dp"**

**android:text="%"**

**android:textSize="20sp"**

**app:layout\_column="2"**

**app:layout\_row="0" />**

**<Button**

**android:id="@+id/button5"**

**android:layout\_width="121dp"**

**android:layout\_height="64dp"**

**android:layout\_row="0"**

**android:layout\_column="3"**

**android:text="/"**

**android:textSize="20sp"**

**app:layout\_column="3"**

**app:layout\_row="0" />**

**<Button**

**android:id="@+id/button6"**

**android:layout\_width="91dp"**

**android:layout\_height="59dp"**

**android:layout\_row="1"**

**android:layout\_column="0"**

**android:text="7"**

**android:textSize="20sp"**

**app:layout\_column="0"**

**app:layout\_row="1" />**

**<Button**

**android:id="@+id/button7"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="60dp"**

**android:layout\_row="2"**

**android:layout\_column="1"**

**android:text="4"**

**android:textSize="20sp"**

**app:layout\_column="0"**

**app:layout\_row="2" />**

**<Button**

**android:id="@+id/button8"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="61dp"**

**android:layout\_row="1"**

**android:layout\_column="2"**

**android:text="1"**

**android:textSize="20sp"**

**app:layout\_column="0"**

**app:layout\_row="3" />**

**<Button**

**android:id="@+id/button9"**

**android:layout\_width="123dp"**

**android:layout\_height="65dp"**

**android:text="+/-"**

**android:textSize="20sp"**

**app:layout\_column="0"**

**app:layout\_row="4" />**

**<Button**

**android:id="@+id/button10"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="61dp"**

**android:layout\_row="4"**

**android:layout\_column="0"**

**android:text="8"**

**android:textSize="20sp"**

**app:layout\_column="1"**

**app:layout\_row="1" />**

**<Button**

**android:id="@+id/button11"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="59dp"**

**android:layout\_row="4"**

**android:layout\_column="1"**

**android:text="9"**

**android:textSize="20sp"**

**app:layout\_column="2"**

**app:layout\_row="1" />**

**<Button**

**android:id="@+id/button12"**

**android:layout\_width="113dp"**

**android:layout\_height="62dp"**

**android:layout\_row="2"**

**android:layout\_column="3"**

**android:text="\*"**

**android:textSize="20sp"**

**app:layout\_column="3"**

**app:layout\_row="1" />**

**<Button**

**android:id="@+id/button13"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="61dp"**

**android:layout\_row="1"**

**android:layout\_column="1"**

**android:text="5"**

**android:textSize="20sp"**

**app:layout\_column="1"**

**app:layout\_row="2" />**

**<Button**

**android:id="@+id/button14"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="64dp"**

**android:layout\_row="2"**

**android:layout\_column="2"**

**android:text="2"**

**android:textSize="20sp"**

**app:layout\_column="1"**

**app:layout\_row="3" />**

**<Button**

**android:id="@+id/button15"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="60dp"**

**android:layout\_row="3"**

**android:layout\_column="2"**

**android:text="0"**

**android:textSize="20sp"**

**app:layout\_column="1"**

**app:layout\_row="4" />**

**<Button**

**android:id="@+id/button16"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="60dp"**

**android:layout\_row="2"**

**android:layout\_column="0"**

**android:text="6"**

**android:textSize="20sp"**

**app:layout\_column="2"**

**app:layout\_row="2" />**

**<Button**

**android:id="@+id/button17"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="61dp"**

**android:layout\_row="3"**

**android:layout\_column="0"**

**android:text="-"**

**android:textSize="20sp"**

**app:layout\_column="3"**

**app:layout\_row="2" />**

**<Button**

**android:id="@+id/button18"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="59dp"**

**android:text="3"**

**android:textSize="20sp"**

**app:layout\_column="2"**

**app:layout\_row="3" />**

**<Button**

**android:id="@+id/button19"**

**android:layout\_width="wrap\_content"**

**android:layout\_height="61dp"**

**android:layout\_row="4"**

**android:layout\_column="2"**

**android:text="."**

**android:textSize="24sp"**

**app:layout\_column="2"**

**app:layout\_row="4" />**

**<Button**

**android:id="@+id/button20"**

**android:layout\_width="121dp"**

**android:layout\_height="59dp"**

**android:layout\_row="3"**

**android:layout\_column="3"**

**android:text="+"**

**android:textSize="20sp"**

**app:layout\_column="3"**

**app:layout\_row="3" />**

**<Button**

**android:id="@+id/button21"**

**android:layout\_width="111dp"**

**android:layout\_height="62dp"**

**android:layout\_row="4"**

**android:layout\_column="3"**

**android:text="="**

**android:textSize="20sp"**

**app:layout\_column="3"**

**app:layout\_row="4" />**

**</android.widget.GridLayout>**

**<EditText**

**android:id="@+id/edt1"**

**android:layout\_width="423dp"**

**android:layout\_height="93dp"**

**android:layout\_marginTop="140dp"**

**android:layout\_marginBottom="95dp"**

**android:background="#A3D4DA"**

**android:backgroundTint="#CCEBEF"**

**android:textSize="34sp"**

**app:layout\_constraintBottom\_toTopOf="@+id/gridLayout"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintHorizontal\_bias="0.0"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent"**

**app:layout\_constraintVertical\_bias="1.0"**

**tools:ignore="MissingConstraints" />**

**<EditText**

**android:id="@+id/editTextTextPersonName2"**

**android:layout\_width="406dp"**

**android:layout\_height="61dp"**

**android:layout\_marginStart="1dp"**

**android:layout\_marginTop="15dp"**

**android:layout\_marginBottom="42dp"**

**android:background="#F6C7D7"**

**android:ems="10"**

**android:foregroundGravity="center"**

**android:gravity="center"**

**android:inputType="textPersonName"**

**android:text="Calculator"**

**android:textColor="#673AB7"**

**android:textSize="50sp"**

**android:textStyle="bold"**

**app:layout\_constraintBottom\_toTopOf="@+id/edt1"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent"**

**android:layout\_marginLeft="1dp" />**

**</androidx.constraintlayout.widget.ConstraintLayout>**

**JAVA CODE:**

**package com.example.gridcalculator;**

**import android.os.Bundle;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**public class MainActivity extends AppCompatActivity {**

**Button button0, button1, button2, button3, button4, button5,**

**button6,**

**button7, button8, button9, buttonAdd, buttonSub,**

**buttonDivision,**

**buttonMul, buttond, buttonC, buttonEqual,buttonperc;**

**EditText cEditText;**

**float mValueOne, mValueTwo;**

**boolean cAddition, mSubtract, cMultiplication, cDivision,cperc;**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.*activity\_main*);**

**button0 = (Button) findViewById(R.id.*button15*);**

**button1 = (Button) findViewById(R.id.*button8*);**

**button2 = (Button) findViewById(R.id.*button14*);**

**button3 = (Button) findViewById(R.id.*button18*);**

**button4 = (Button) findViewById(R.id.*button7*);**

**button5 = (Button) findViewById(R.id.*button13*);**

**button6 = (Button) findViewById(R.id.*button16*);**

**button7 = (Button) findViewById(R.id.*button6*);**

**button8 = (Button) findViewById(R.id.*button10*);**

**button9 = (Button) findViewById(R.id.*button11*);**

**buttond = (Button) findViewById(R.id.*button19*);**

**buttonAdd = (Button) findViewById(R.id.*button20*);**

**buttonSub = (Button) findViewById(R.id.*button17*);**

**buttonMul = (Button) findViewById(R.id.*button12*);**

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

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

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

**buttonEqual = (Button) findViewById(R.id.*button21*);**

**cEditText = (EditText) findViewById(R.id.*edt1*);**

**button1.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "1");**

**}**

**});**

**button2.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "2");**

**}**

**});**

**button3.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "3");**

**}**

**});**

**button4.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "4");**

**}**

**});**

**button5.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "5");**

**}**

**});**

**button6.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "6");**

**}**

**});**

**button7.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "7");**

**}**

**});**

**button8.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "8");**

**}**

**});**

**button9.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "9");**

**}**

**});**

**button0.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + "0");**

**}**

**});**

**buttonAdd.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**if (cEditText == null) {**

**cEditText.setText("");**

**} else {**

**mValueOne = Float.*parseFloat*(cEditText.getText() +**

**"");**

**cAddition = true;**

**cEditText.setText(null);**

**}**

**}**

**});**

**buttonSub.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**mValueOne = Float.*parseFloat*(cEditText.getText() +**

**"");**

**mSubtract = true;**

**cEditText.setText(null);**

**}**

**});**

**buttonMul.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**mValueOne = Float.*parseFloat*(cEditText.getText() +**

**"");**

**cMultiplication = true;**

**cEditText.setText(null);**

**}**

**});**

**buttonDivision.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**mValueOne = Float.*parseFloat*(cEditText.getText() +**

**"");**

**cDivision = true;**

**cEditText.setText(null);**

**}**

**});**

**buttonperc.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**mValueOne = Float.*parseFloat*(cEditText.getText() +**

**"");**

**cperc = true;**

**cEditText.setText(null);**

**}**

**});**

**buttonEqual.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**mValueTwo = Float.*parseFloat*(cEditText.getText() +**

**"");**

**if (cAddition == true) {**

**cEditText.setText(mValueOne + mValueTwo + "");**

**cAddition = false;**

**}**

**if (mSubtract == true) {**

**cEditText.setText(mValueOne - mValueTwo + "");**

**mSubtract = false;**

**}**

**if (cMultiplication == true) {**

**cEditText.setText(mValueOne \* mValueTwo + "");**

**cMultiplication = false;**

**}**

**if (cDivision == true) {**

**cEditText.setText(mValueOne / mValueTwo + "");**

**cDivision = false;**

**}**

**if (cperc == true) {**

**cEditText.setText((mValueOne / mValueTwo)\*100 +**

**"");**

**cperc = false;**

**}**

**}**

**});**

**buttonC.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText("");**

**}**

**});**

**buttond.setOnClickListener(new View.OnClickListener() {**

**@Override**

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

**cEditText.setText(cEditText.getText() + ".");**

**}**

**});**

**}**

**}**