**Universitatea Liberă Internațională din Moldova**

Facultatea: **ȘTIINȚE ECONOMICE ȘI TEHNOLOGII INFORMAȚIONALE**

Catedra: **Informatica**  
Disciplina: **Programarea Android**Logo, company name

Description automatically generated

**Отчет**  
по Лабораторной работе №1

A efectuat  
student gr. I-INF-201-21:

Dronov Dmitrii

A verificat  
profesor:

Bodrug S.

Chișinău, 2023

# Введение

**Тема:** Создание калькулятора

**Цель:** Написать свой калькулятор в Android Studio используя язык программирования Java

**Задачи:**

# Решение

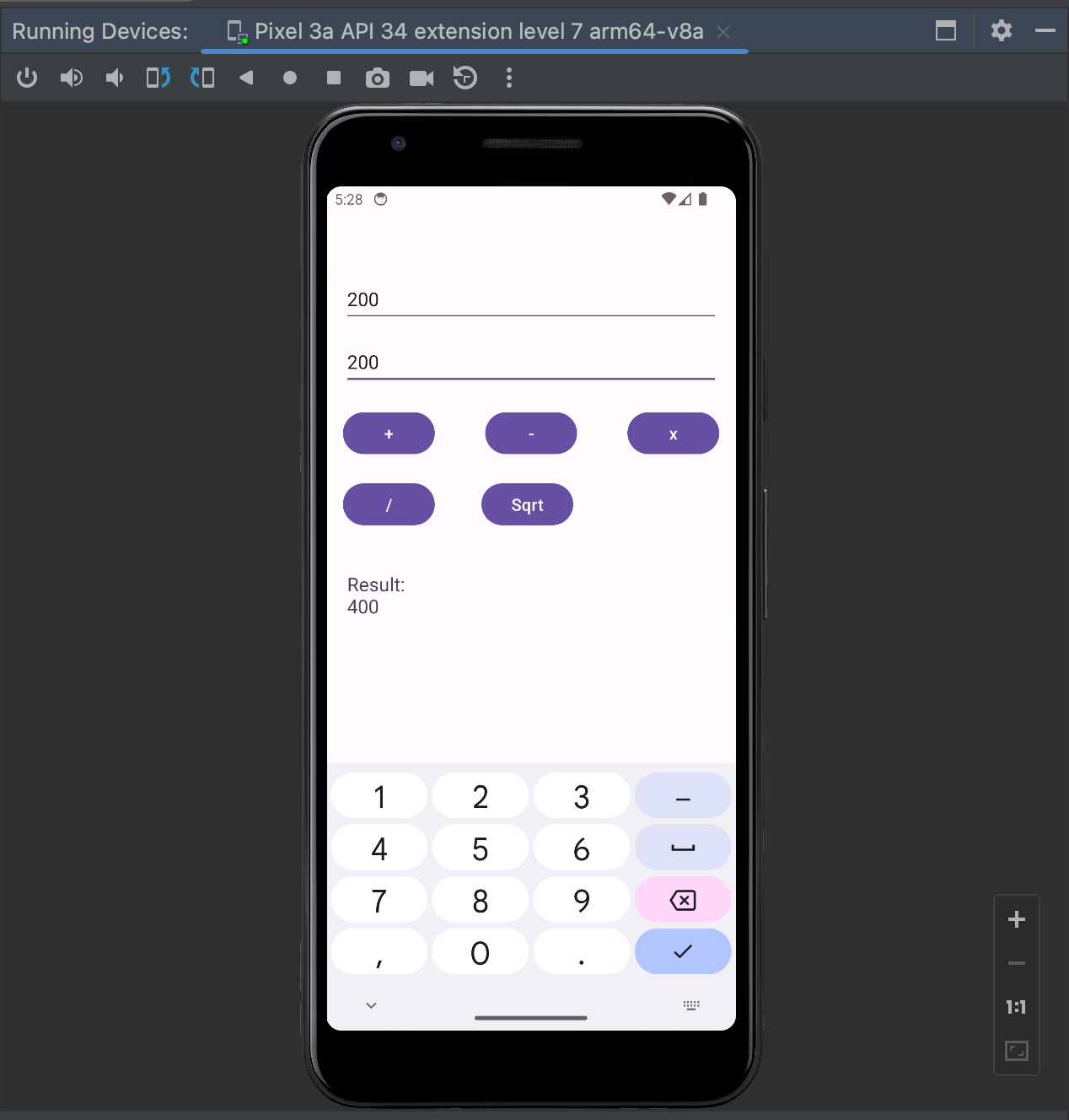
activity\_main.xml:

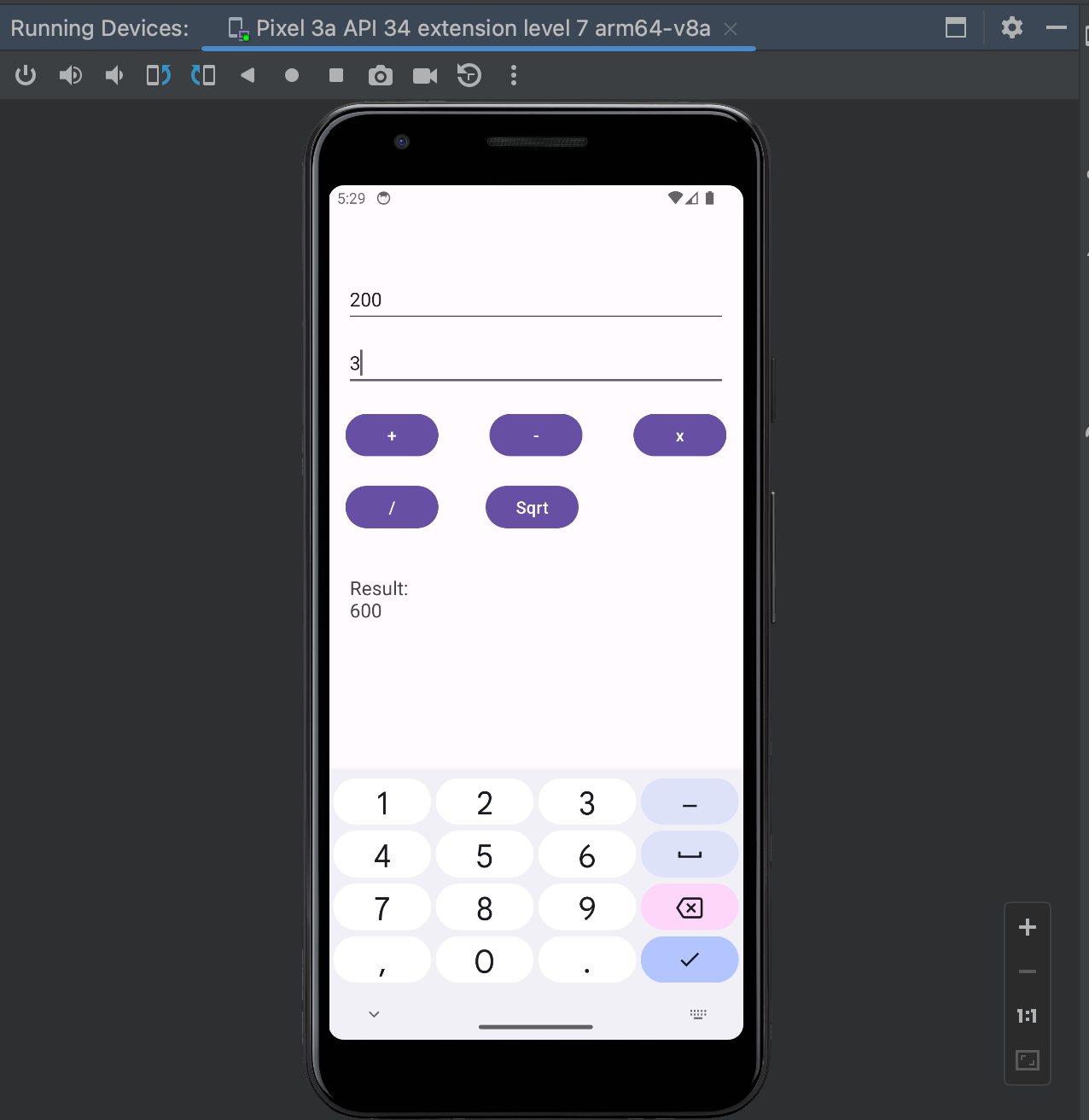
<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/num1EditText"  
 android:layout\_width="0dp"  
 android:layout\_height="48dp"  
 android:layout\_marginTop="44dp"  
 android:hint="Enter number 1"  
 android:inputType="numberDecimal"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <EditText  
 android:id="@+id/num2EditText"  
 android:layout\_width="0dp"  
 android:layout\_height="48dp"  
 android:layout\_marginTop="12dp"  
 android:hint="Enter number 2"  
 android:inputType="numberDecimal"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.47"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/num1EditText" />  
  
 <Button  
 android:id="@+id/addButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:text="+"  
 android:textSize="16sp"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/num2EditText" />  
  
 <Button  
 android:id="@+id/subtractButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:text="-"  
 android:textSize="16sp"  
 app:layout\_constraintEnd\_toStartOf="@+id/multiplyButton"  
 app:layout\_constraintStart\_toEndOf="@+id/addButton"  
 app:layout\_constraintTop\_toBottomOf="@+id/num2EditText" />  
  
 <Button  
 android:id="@+id/multiplyButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:text="x"  
 android:textSize="16sp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/num2EditText" />  
  
 <Button  
 android:id="@+id/divideButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:text="/"  
 android:textSize="16sp"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/addButton" />  
  
 <Button  
 android:id="@+id/sqrtButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:layout\_marginEnd="140dp"  
 android:text="Sqrt"  
 android:textSize="16sp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/subtractButton" />  
  
 <TextView  
 android:id="@+id/resultTextView"  
 android:layout\_width="84dp"  
 android:layout\_height="41dp"  
 android:layout\_marginStart="4dp"  
 android:layout\_marginTop="40dp"  
 android:text="Result: "  
 android:textSize="18sp"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/divideButton" />  
</androidx.constraintlayout.widget.ConstraintLayout>

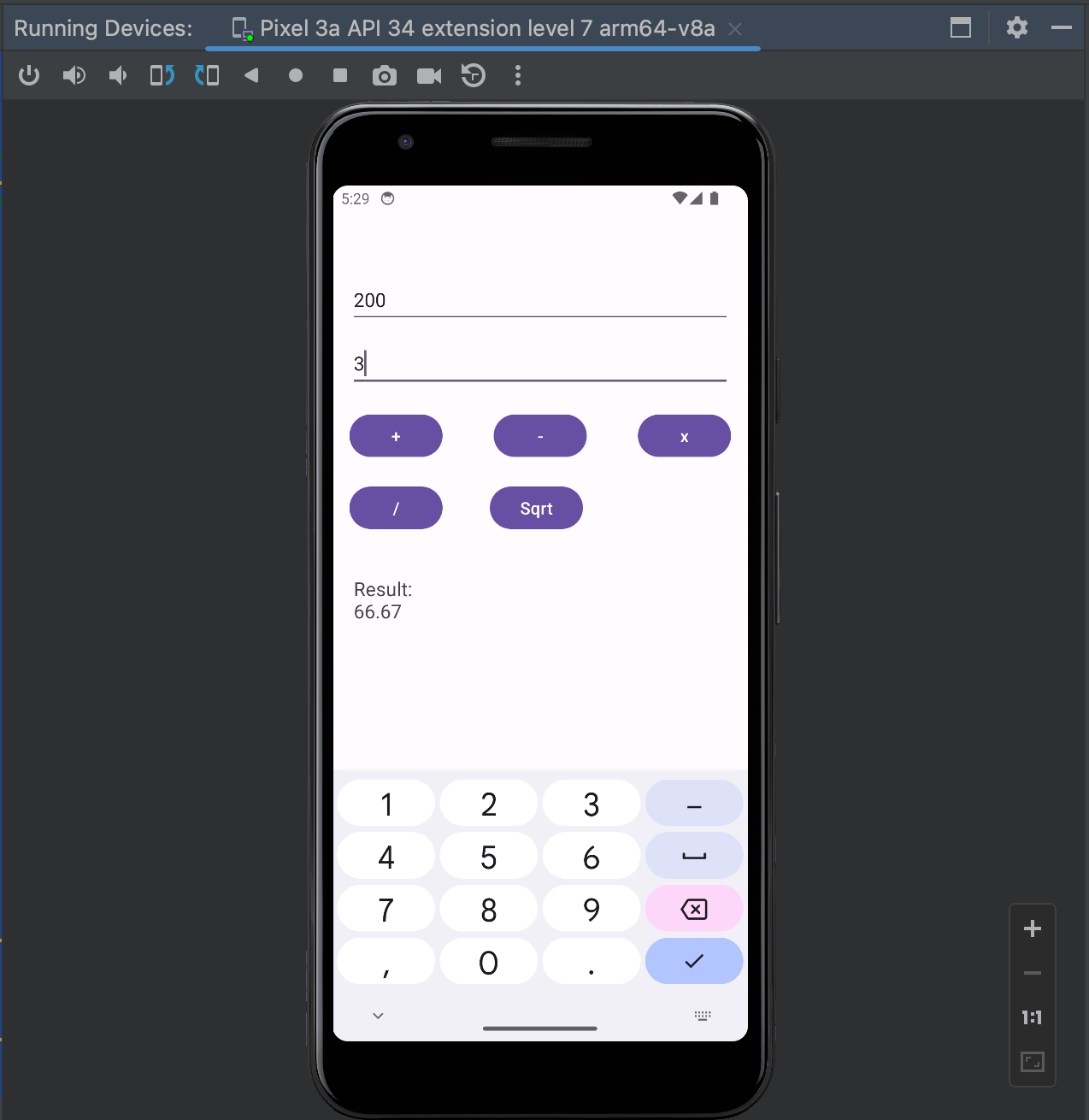
activity\_main.java

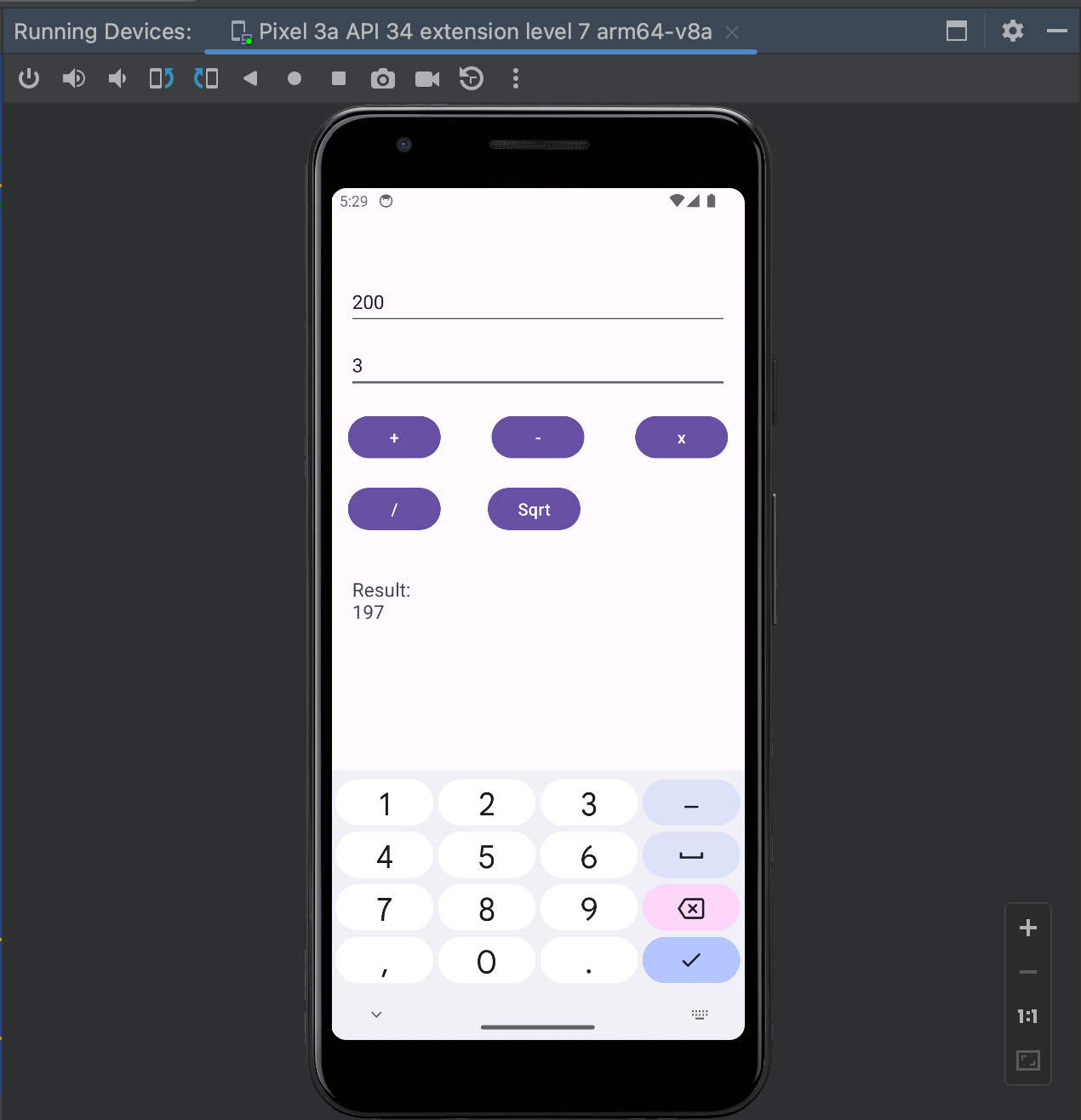
package com.example.calculator;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import java.text.DecimalFormat;  
  
import com.example.calculator.R;  
  
public class activity\_main extends AppCompatActivity {  
  
 // Declare variables to hold references to UI elements  
 private EditText num1EditText, num2EditText;  
 private TextView resultTextView;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 // Initialize UI elements from the layout  
 num1EditText = findViewById(R.id.*num1EditText*);  
 num2EditText = findViewById(R.id.*num2EditText*);  
 resultTextView = findViewById(R.id.*resultTextView*);  
  
 // Set click listeners for arithmetic operation buttons  
  
 Button addButton = findViewById(R.id.*addButton*);  
 addButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 performCalculation('+');  
 }  
 });  
  
 Button subtractButton = findViewById(R.id.*subtractButton*);  
 subtractButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 performCalculation('-');  
 }  
 });  
  
 Button multiplyButton = findViewById(R.id.*multiplyButton*);  
 multiplyButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 performCalculation('\*');  
 }  
 });  
  
 Button divideButton = findViewById(R.id.*divideButton*);  
 divideButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 performCalculation('/');  
 }  
 });  
  
 Button sqrtButton = findViewById(R.id.*sqrtButton*);  
 sqrtButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 calculateSquareRoot();  
 }  
 });  
 }  
  
 private void performCalculation(char operator) {  
 // Get the values entered in the input fields  
 String num1Str = num1EditText.getText().toString();  
 String num2Str = num2EditText.getText().toString();  
  
 // Check if either input field is empty  
 if (num1Str.isEmpty() || num2Str.isEmpty()) {  
 Toast.*makeText*(this, "Please enter both numbers", Toast.*LENGTH\_SHORT*).show();  
 return; // Exit the method to prevent calculations with empty inputs  
 }  
  
 // Convert the input values to numeric format  
 double num1 = Double.*parseDouble*(num1Str);  
 double num2 = Double.*parseDouble*(num2Str);  
 double result = 0;  
  
 // Perform the selected calculation based on the operator  
 switch (operator) {  
 case '+':  
 result = num1 + num2;  
 break;  
 case '-':  
 result = num1 - num2;  
 break;  
 case '\*':  
 result = num1 \* num2;  
 break;  
 case '/':  
 if (num2 != 0) {  
 result = num1 / num2;  
 } else {  
 Toast.*makeText*(this, "Cannot divide by zero", Toast.*LENGTH\_SHORT*).show();  
 return; // Exit the method if division by zero is attempted  
 }  
 break;  
 }  
  
 // Format and display the calculation result  
 DecimalFormat df = new DecimalFormat("#.##");  
 resultTextView.setText("Result: " + df.format(result));  
 }  
  
 private void calculateSquareRoot() {  
 String num1Str = num1EditText.getText().toString();  
 // Check if the input field is empty  
 if (num1Str.isEmpty()) {  
 Toast.*makeText*(this, "Please enter a number", Toast.*LENGTH\_SHORT*).show();  
 return; // Exit the method to prevent calculations with empty inputs  
 }  
  
 double num = Double.*parseDouble*(num1Str);  
 double sqrtResult = Math.*sqrt*(num);  
 DecimalFormat df = new DecimalFormat("#.##");  
 resultTextView.setText("Square Root: " + df.format(sqrtResult));  
 }  
}

## Результаты







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