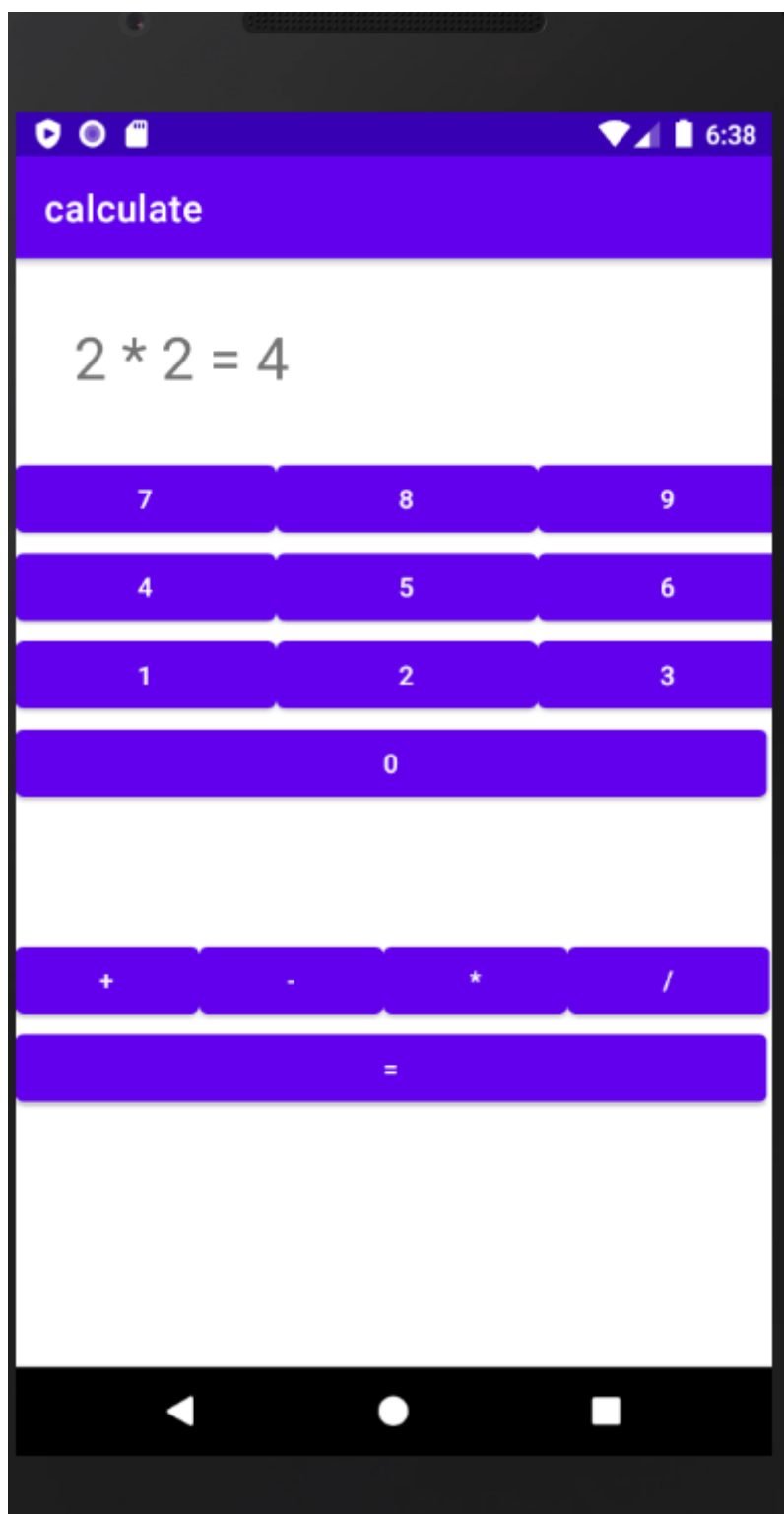


Главный экран приложения



Пример работы арифметических выражений





6:39

calculate

8 / 4 = 2

7

8

9

4

5

6

1

2

3

0

+

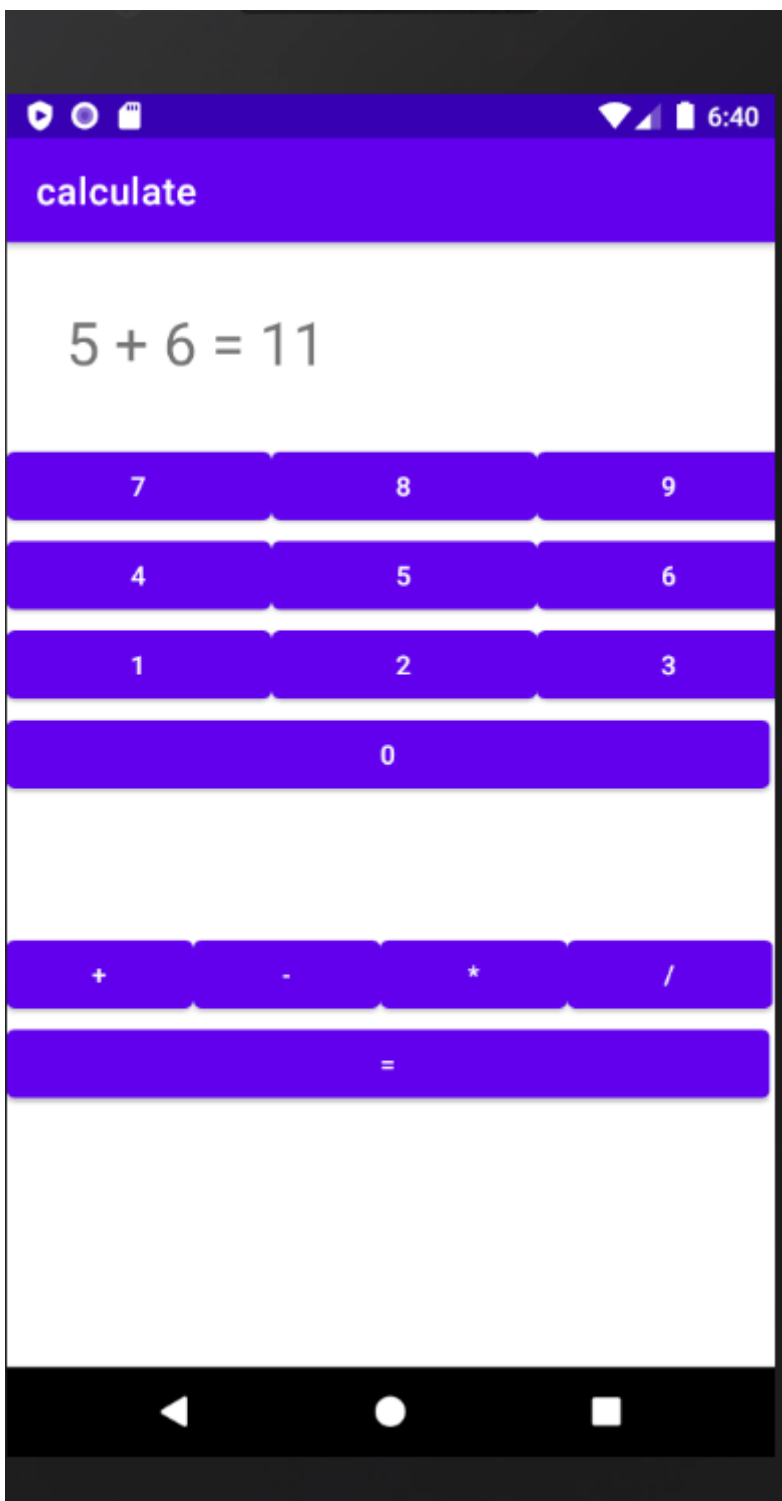
-

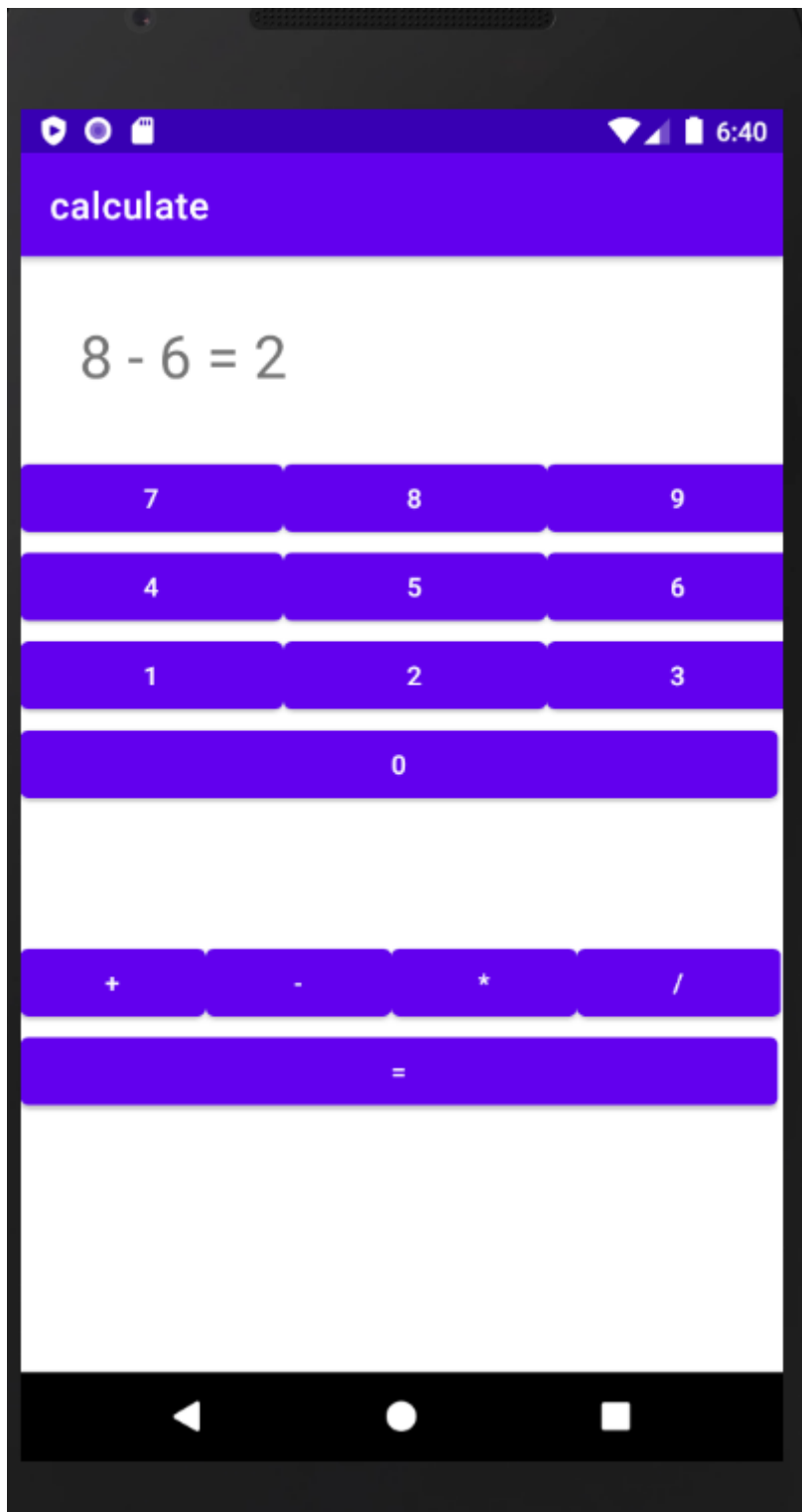
*

/

=







Есть возможность модифицировать программу, а именно поставить кнопку сброса выражения. Вычисление не только целых чисел, но и вещественных чисел.

Приложение 1

Пример кода:

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/text"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_margin="32dp"
        android:textSize="32dp"
        android:text="Введите выражение"
    />
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:layout_below="@+id/text">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal">

            <Button
                android:layout_width="142dp"
                android:layout_height="wrap_content"
                android:text="7"
                android:id="@+id/num7"/>

            <Button
                android:layout_width="142dp"
                android:layout_height="wrap_content"
                android:text="8"
                android:id="@+id/num8"/>

            <Button
                android:layout_width="142dp"
                android:layout_height="wrap_content"
                android:text="9"
                android:id="@+id/num9"/>

        </LinearLayout>
    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal">
        <Button
```

```

        android:layout_width="142dp"
        android:layout_height="wrap_content"
        android:text="4"
        android:id="@+id/num4"/>
    <Button
        android:layout_width="142dp"
        android:layout_height="wrap_content"
        android:text="5"
        android:id="@+id/num5"/>
    <Button
        android:layout_width="142dp"
        android:layout_height="wrap_content"
        android:text="6"
        android:id="@+id/num6"/>
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
    <Button
        android:layout_width="142dp"
        android:layout_height="wrap_content"
        android:text="1"
        android:id="@+id/num1"/>
    <Button
        android:layout_width="142dp"
        android:layout_height="wrap_content"
        android:text="2"
        android:id="@+id/num2"/>
    <Button
        android:layout_width="142dp"
        android:layout_height="wrap_content"
        android:text="3"
        android:id="@+id/num3"/>
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:paddingLeft="200dp"
        android:paddingRight="200dp"
        android:text="0"
        android:id="@+id/num0"/>

</LinearLayout>

<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:paddingTop="70dp">

    <Button
        android:layout_width="100dp"
        android:layout_height="wrap_content"
        android:text="+"
        android:id="@+id/plus"/>

```

```

        <Button
            android:layout_width="100dp"
            android:layout_height="wrap_content"
            android:text="-"
            android:id="@+id/minus"/>

        <Button
            android:layout_width="100dp"
            android:layout_height="wrap_content"
            android:text="*"
            android:id="@+id/umn"/>

        <Button
            android:layout_width="110dp"
            android:layout_height="wrap_content"
            android:text="/"
            android:id="@+id/del"/>
    </LinearLayout>

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:paddingLeft="200dp"
            android:paddingRight="200dp"
            android:text="="
            android:id="@+id/rav"/>
    </LinearLayout>
</RelativeLayout>

```

MainActivity.java

```

package com.example.calculate;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    private Calculator calculator;

    private TextView text;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        int[] numberIds = new int[] {
            R.id.num1,
            R.id.num2,

```



```

        R.id.num3,
        R.id.num4,
        R.id.num5,
        R.id.num6,
        R.id.num7,
        R.id.num8,
        R.id.num9,
        R.id.num0
    };

    int[] actionsIds = new int[] {
        R.id.plus,
        R.id.minus,
        R.id.umn,
        R.id.del,
        R.id.rav
    };

    text = findViewById(R.id.text);

    calculator = new Calculator();

    View.OnClickListener numberButtonClickListener = new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            calculator.onNumPressed(view.getId());
            text.setText(calculator.getText());
        }
    };

    View.OnClickListener actionButtonOnClickListener = new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            calculator.onActionPressed(view.getId());
            text.setText(calculator.getText());
        }
    };

    for (int i = 0; i < numberIds.length; i++) {
        findViewById(numberIds[i]).setOnClickListener(numberButtonClickListener);
    }

    for (int i = 0; i < actionsIds.length; i++) {
        findViewById(actionsIds[i]).setOnClickListener(actionButtonOnClickListener);
    }
}
}

```

Calculator.java

```

package com.example.calculate;

public class Calculator {

    private int firstArg;
    private int secondArg;
}

```

```
private StringBuilder inputStr = new StringBuilder();

private int actionSelected;

private State state;

private enum State {
    firstArgInput,
    operationSelected,
    secondArgInput,
    resultShow
}

public Calculator() {
    state = State.firstArgInput;
}

public void onNumPressed(int buttonId) {

    if (state == State.resultShow) {
        state = State.firstArgInput;
        inputStr.setLength(0);
    }

    if (state == State.operationSelected) {
        state = State.secondArgInput;
        inputStr.setLength(0);
    }

    if (inputStr.length() < 9) {
        switch (buttonId) {
            case R.id.num0:
                if (inputStr.length() != 0) {
                    inputStr.append("0");
                }
                break;
            case R.id.num1:
                inputStr.append("1");
                break;
            case R.id.num2:
                inputStr.append("2");
                break;
            case R.id.num3:
                inputStr.append("3");
                break;
            case R.id.num4:
                inputStr.append("4");
                break;
            case R.id.num5:
                inputStr.append("5");
                break;
            case R.id.num6:
                inputStr.append("6");
                break;
            case R.id.num7:
                inputStr.append("7");
                break;
            case R.id.num8:
                inputStr.append("8");
                break;
            case R.id.num9:
```

```

        inputStr.append("9");
        break;
    }
}

}

public void onActionPressed(int actionId) {
    if (actionId == R.id.rav && state == State.secondArgInput &&
inputStr.length() > 0) {
        secondArg = Integer.parseInt(inputStr.toString());
        state = State.resultShow;
        inputStr.setLength(0);
        switch (actionSelected) {
            case R.id.plus:
                inputStr.append(firstArg + secondArg);
                break;
            case R.id.minus:
                inputStr.append(firstArg - secondArg);
                break;
            case R.id.umn:
                inputStr.append(firstArg * secondArg);
                break;
            case R.id.del:
                inputStr.append(firstArg / secondArg);
                break;
        }

    } else if (inputStr.length() > 0 && state == State.firstArgInput) {
        firstArg = Integer.parseInt(inputStr.toString());
        state = State.operationSelected;
        actionSelected = actionId;
    }
}

public String getText() {
    StringBuilder str = new StringBuilder();
    switch (state) {
        default:
            return inputStr.toString();
        case operationSelected:
            return str.append(firstArg).append(' ')
                .append(getOperationChar())
                .toString();
        case secondArgInput:
            return str.append(firstArg).append(' ')
                .append(getOperationChar())
                .append(' ')
                .append(inputStr)
                .toString();
        case resultShow:
            return str.append(firstArg).append(' ')
                .append(getOperationChar())
                .append(' ')
                .append(secondArg)
                .append(" = ")
                .append(inputStr.toString())
                .toString();
    }
}

private char getOperationChar() {

```

```
        switch (actionSelected) {
            case R.id.plus:
                return '+';
            case R.id.minus:
                return '-';
            case R.id.umn:
                return '*';
            case R.id.del:
            default:
                return '/';
        }
    }

    public void reset() {
        state = State.firstArgInput;
        inputStr.setLength(0);
    }
}
```

Ссылка на github: <https://github.com/Artem-Volkov/MobileDev>