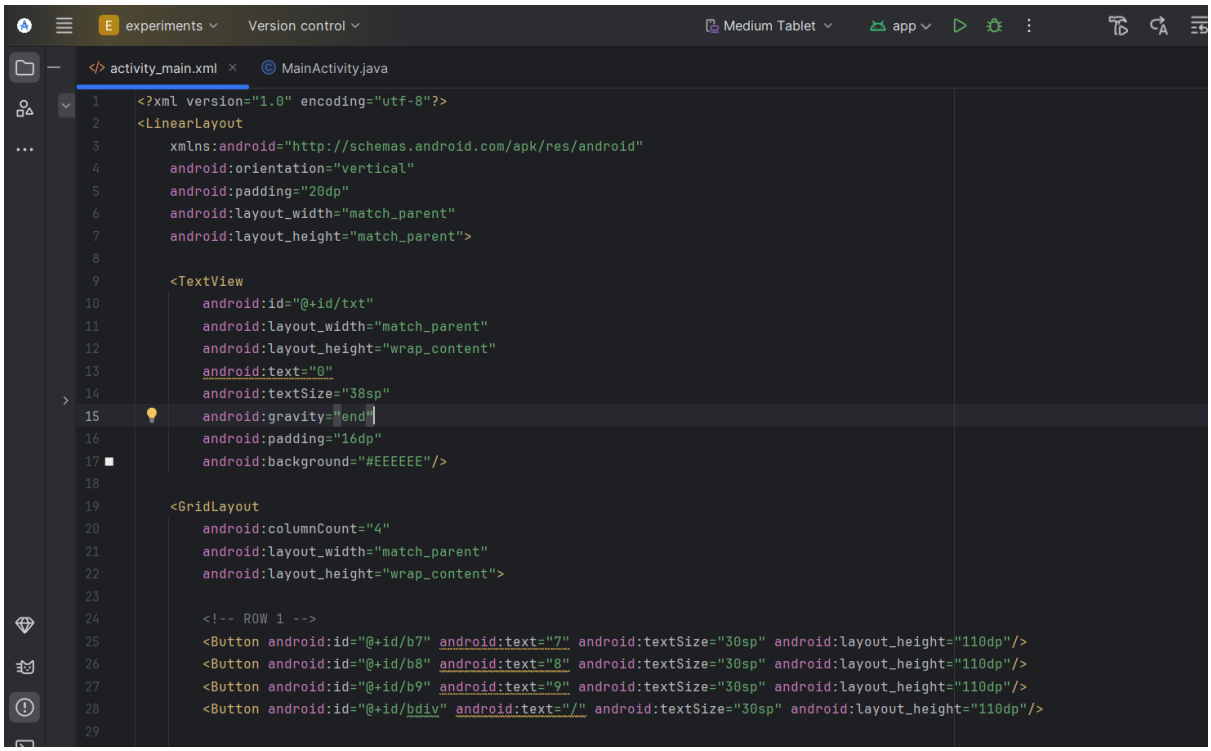
Elderly Friendly Calculator App

Xml code:




```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:padding="20dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <TextView
        android:id="@+id/txt"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="0"
        android:textSize="38sp"
        android:gravity="end"
        android:padding="16dp"
        android:background="#EEEEEE"/>

    <GridLayout
        android:columnCount="4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <!-- ROW 1 -->
        <Button android:id="@+id/b7" android:text="7" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/b8" android:text="8" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/b9" android:text="9" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/bdiv" android:text="/" android:textSize="30sp" android:layout_height="110dp"/>
```

```xml

        <Button android:id="@+id/b4" android:text="4" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/b5" android:text="5" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/b6" android:text="6" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/bmul" android:text="*" android:textSize="30sp" android:layout_height="110dp"/>


        <Button android:id="@+id/b1" android:text="1" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/b2" android:text="2" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/b3" android:text="3" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/bminus" android:text="-" android:textSize="30sp" android:layout_height="110dp"/>

        <Button android:id="@+id/b0" android:text="0" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/bclear" android:text="C" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/beq" android:text="=" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/bplus" android:text="+" android:textSize="30sp" android:layout_height="110dp"/>

    </GridLayout>

</LinearLayout>
```

Main activity :

activity_main.xml | MainActivity.java

```java
package com.example.experiments;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;
import android.app.AlertDialog;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    5 usages
    TextView txt;
    8 usages
    String current = "";
    7 usages
    int first = 0, second = 0;
    5 usages
    String op = "";
    3 usages
    boolean operatorPressed = false;

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

        txt = findViewById(R.id.txt);
```

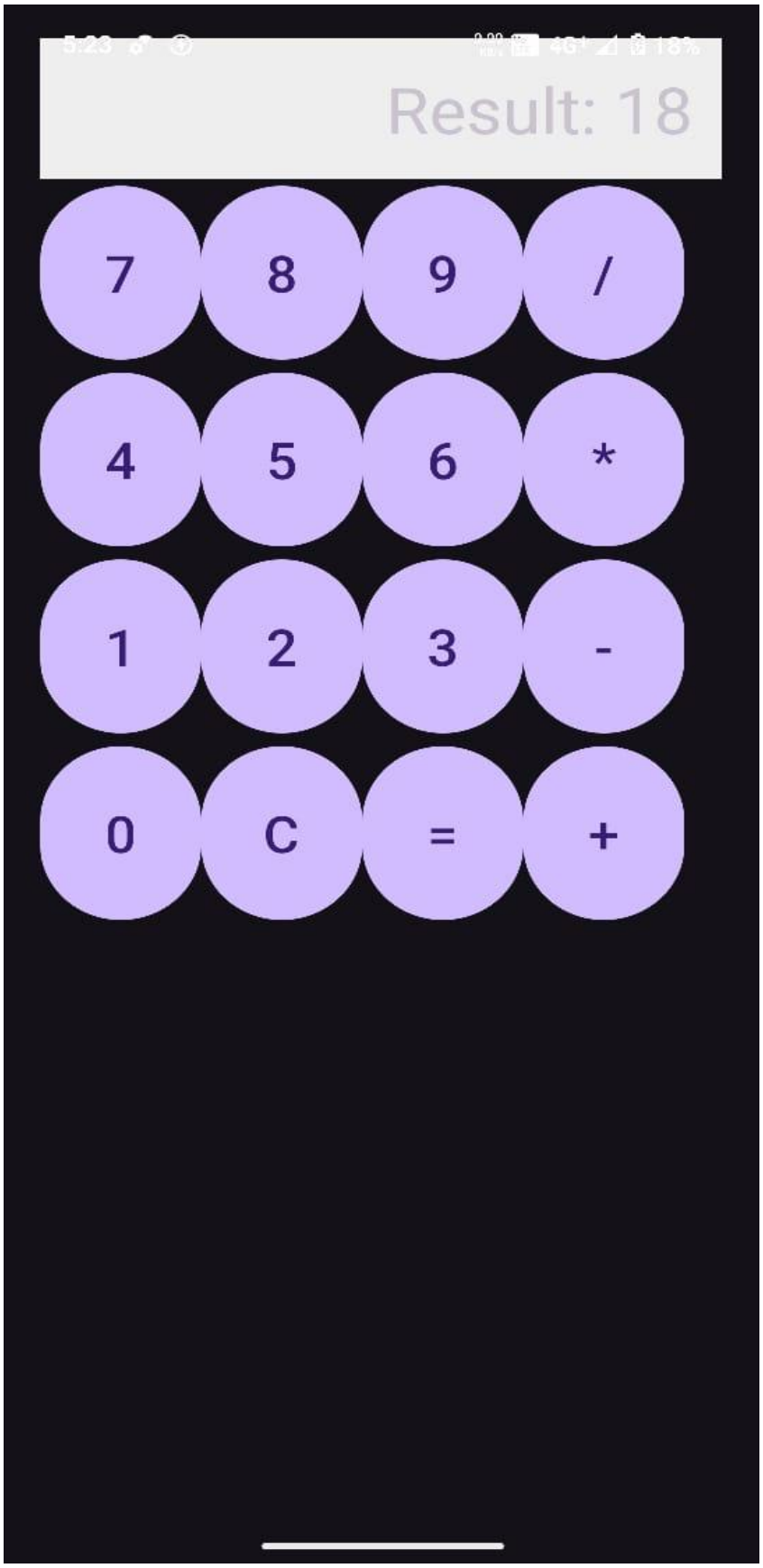
```java
        int numbers[] = {
                R.id.b0, R.id.b1, R.id.b2, R.id.b3, R.id.b4,
                R.id.b5, R.id.b6, R.id.b7, R.id.b8, R.id.b9
        };

        for(int id : numbers) {
            Button b = findViewById(id);
            b.setOnClickListener( View v -> {
                Button btn = (Button)v;
                pressNumber(btn.getText().toString());
            });
        }

        findViewById(R.id.bplus).setOnClickListener( View v -> setOp("+"));
        findViewById(R.id.bminus).setOnClickListener( View v -> setOp("-"));
        findViewById(R.id.bmul).setOnClickListener( View v -> setOp("*"));
        findViewById(R.id.bdiv).setOnClickListener( View v -> setOp("/"));

        findViewById(R.id.bclear).setOnClickListener( View v -> {
            show( s: "Clear");
            current = "";
            first = second = 0;
            operatorPressed = false;
            txt.setText("0");
        });
```

```
    void calculate() {

        int result = 0;

        if(op.equals("+"))
            result = first + second;

        if(op.equals("-"))
            result = first - second;

        if(op.equals("*"))
            result = first * second;

        if(op.equals("/")) {
            if(second == 0) {
                txt.setText("Cannot divide by zero");
                return;
            }
            result = first / second;
        }

        txt.setText("Result: " + result);

        first = result;
        current = "";
    }
```

```
    void show(String s) {

        Toast.makeText( context: MainActivity.this, s, Toast.LENGTH_SHORT).show();

        AlertDialog.Builder d =
                new AlertDialog.Builder( context: MainActivity.this);

        d.setTitle("Info");
        d.setMessage(s);
        d.setPositiveButton( text: "OK",  listener: null);
        d.show();
    }
}
```

```
        findViewById(R.id.beq).setOnClickListener( View v -> {
            show( s: "Pressed =");
            calculate();
        });
    }

    1 usage
    void pressNumber(String n) {

        show( s: "Pressed " + n);

        current = current + n;
        txt.setText(current);

        if(!operatorPressed)
            first = Integer.parseInt(current);
        else
            second = Integer.parseInt(current);
    }

    4 usages
    void setOp(String o) {
        show( s: "Pressed " + o);
        op = o;
        operatorPressed = true;
        current = "";
    }
```

Output:




5:22
5G+
18%
6
7
8
9
/
4
5
6
*
1
2
3
-
Info
Pressed 6
OK
Pressed 6