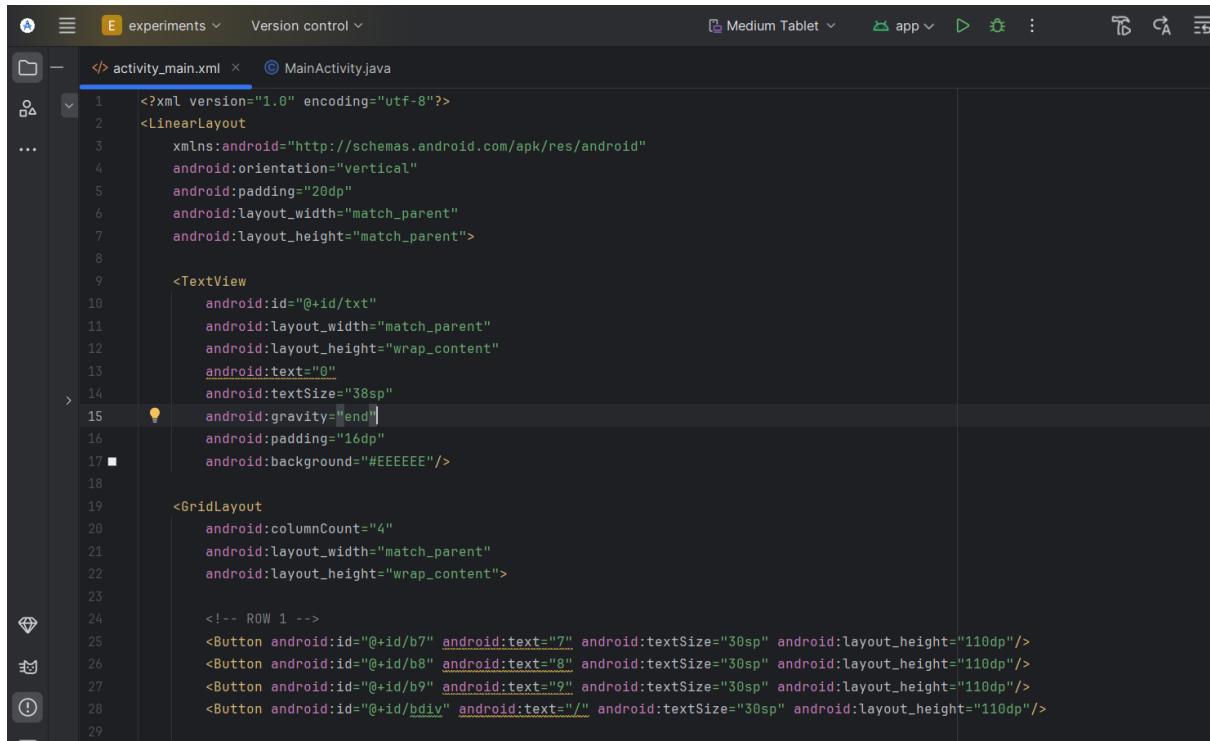


# Elderly Friendly Calculator App

## Xml code:



The screenshot shows the Android Studio interface with the XML code for `activity_main.xml`. The code defines a linear layout with a text view and a grid layout containing buttons for a calculator. The text view is at the top with a yellow info icon. The grid layout below it has four columns and contains buttons for digits 0-9, operators +, -, ×, ÷, and various functions like clear, decimal, and equals.

```
<?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">

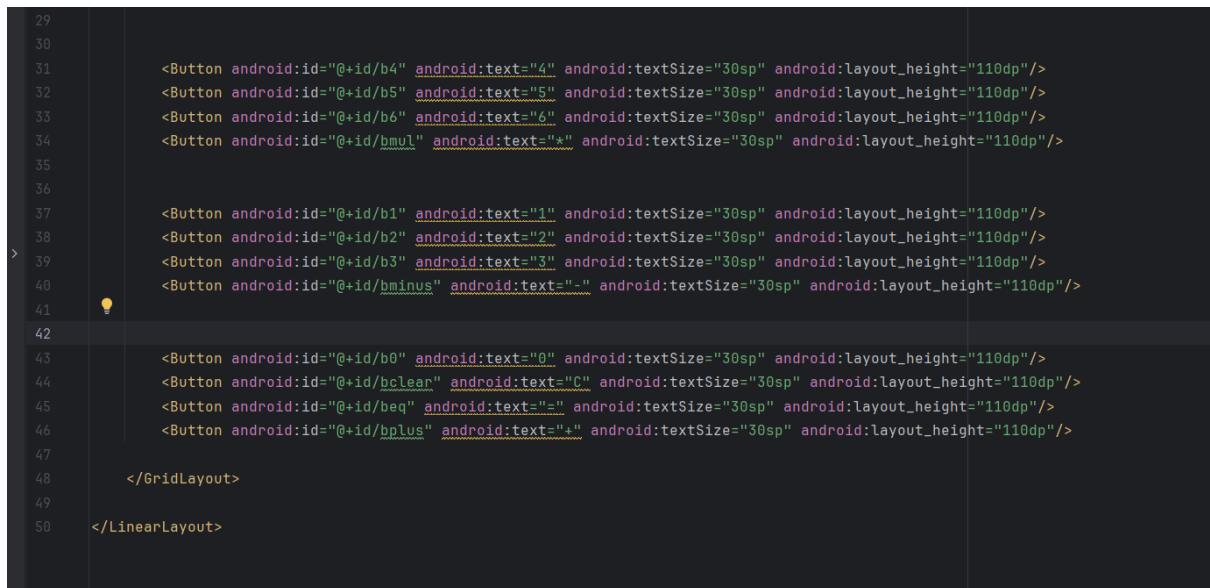
        <!-- ROW 1 -->
        <Button android:id="@+id/b7" android:text="7" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/b8" android:text="8" android:textSize="30sp" android:layout_height="110dp"/>
        <Button android:id="@+id/b9" android:text="9" android:textSize="30sp"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

        <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/beg" 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>
```



This part of the screenshot shows the continuation of the XML code for `activity_main.xml`. It concludes the grid layout and ends the main linear layout. The code uses line numbers from 29 to 50.

```
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50
```

# Main activity :

```
</> activity_main.xml      © MainActivity.java ×

1 package com.example.experiments;
2
3 import android.os.Bundle;
4 import android.view.View;
5 import android.widget.Button;
6 import android.widget.TextView;
7 import android.widget.Toast;
8 import android.app.AlertDialog;
9
10 import androidx.appcompat.app.AppCompatActivity;
11
12 D</> public class MainActivity extends AppCompatActivity {
13
14     TextView txt;
15     String current = "";
16     int first = 0, second = 0;
17     String op = "";
18     boolean operatorPressed = false;
19
20     @Override
21     protected void onCreate(Bundle savedInstanceState) {
22         super.onCreate(savedInstanceState);
23         setContentView(R.layout.activity_main);
24
25         txt = findViewById(R.id.txt);
```

```
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 = "";  
    }  
}
```

```
4 usages  
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:

